



Shaping Wanganui
Have your say, korero mai
Residential



**WANGANUI DISTRICT COUNCIL
DISTRICT PLAN REVIEW**

Phase 2: Residential

**Proposed Plan Change 27
Subdivision, Earthworks and
Infrastructure**

1 November 2012

Topics

T10

Subdivision

Subdivision refers to the legal process of changing the location of existing property boundaries in order to make new allotments, or to realign the boundaries of existing allotments. Subdivision is most often the first significant step in the development process.

The role of Council's in subdivision includes being the regulatory authority in the processing subdivision consents under the Resource Management Act, as guided by the District Plan. Subdivision is not an 'as of right' activity, so all subdivision must go through the consent process. In most instances, the technical and legal nature of the process requires subdivision professionals to make an application to Council on a person's behalf.

Council may place conditions on consent that may the provision of easements, the creation of accessways, avoidance of hazards, financial/development contributions, the connection to, or provision of, infrastructure, and other matters which relates to the actual or potential effects of subdivision. As such, the subdivision process goes hand in hand with the development of public reticulated infrastructure, network utilities, and roads.

Subdivision, as a significant part in the development of infrastructure, can leave a lasting legacy on the way Wanganui looks and feels. For example, the basic roading layout in the central city is much the same as with was before 1900. Therefore, great care is needed to ensure that the development of subdivision and infrastructure not only works now, but also well into the future. Infrastructure needs to align with the anticipated and future land uses of Wanganui.

After granting subdivision consent, Council also manages two other subdivision processes. The first is the approval of the survey plan. This is a process that ensures that the draft plan approved by Council at the

subdivision consent stage reflects what has been surveyed and will become the official Plan lodged with the Department of Land Registrar.

The final process is referred to as the Certificate of completion. This process is to certify that any and all conditions placed on the subdivision consent by Council has been fulfilled and any and all contributions have been paid. Where any conditions are not complete an applicant can ask to bond these conditions where appropriate. Where conditions are relevant to the on-going use of the new allotment after the new title is issued, Council may impose a Consent Notice. This is a note permanently attached to the title to ensure a matter is addressed after the subdivision is certified complete.

As well as the regulatory authority, Council has a separate role as an infrastructure manager. This role is distinct and means Council, as manager, can specify particular requirements for the development of servicing infrastructure in terms of level of service, design, construction and other matters, in particular as servicing infrastructure is most often vested in Council, or will connect to existing Council infrastructure.

T11

Low Impact and Urban Design

Conventional approaches to subdivision and development have tended to work against nature in order to make the land work for a development proposal. More recent approaches to development have been 'softer', and increasingly include the integration of urban design principles.

Urban design is the name of the process that designs and promotes 'livable' and people focused urban spaces. It is a multidisciplinary approach to getting the best quality sustainable mix of natural processes, structures, social interaction, connectedness, and people. Urban design is often referred to as 'place making'.

The Wanganui District Council is a signatory to the New Zealand Urban Design Protocol, a document prepared by a number of agencies to

promote the integration of urban design into New Zealand Cities. Council is therefore committed to promoting good urban design outcomes.

The Protocol outlines the 7 C's of good urban design:

Context: Demonstrating an understanding that subdivision, buildings, land uses, movement corridors, the natural environment and processes, and public places and spaces occur within site specific and broader Wanganui settings.

Character: Reflecting, enhancing and protecting the distinctive natural and physical qualities within the local and broader context of Wanganui in the development proposal. This includes significant cultural and visual landscape features, the surrounding built environment, and historic heritage.

Connections: Enhancing connectivity within multi-modal transportation networks and the links between the different transport modes (pedestrian, cycleway, street) to ensure safe and easy movement for people and the integration of the subdivision with existing and future surrounding neighbourhoods through these networks.

Custodianship: Design that is environmentally and economically safe and accessible. Spaces that are protected as places of value by the community.

Collaboration: Designs that acknowledge the contribution of different disciplines and perspectives, communicating and sharing knowledge for the integration of land use, structures and networks. This includes the wider and affected communities.

CPTED: Crime Prevention Through Environmental Design.

Urban design processes are increasingly being recognised as good planning practice in creating liveable environments and is increasingly being implemented through statutory and non-statutory documents. Existing Council policy such as the Wanganui Urban Transport Strategy already incorporates some of the ideas and philosophies of the Protocol.

The promotion of livable cities and streets, the management of stormwater using natural overland flows, swales, rain gardens, suitable design proportions, integrating infrastructure with land use, and retaining existing

features and topography has become more mainstream. These approaches need not be a more expensive option, but do provide for an increase in the quality of the urban environment.

T12

Earthworks

Earthworks are a fundamental part of the development process. The act of earthworks can include the modification of land surfaces by blading, contouring, ripping, moving, removing, placing or replacing soil or earth, or by excavation, or by cutting or filling operations, including the importation of fill.

There are many reasons why people carry out earthworks. In most instances, earthworks are generally always required for the construction of buildings or other structures. Smaller scale earthworks may pass without notice, where as some larger or poorly thought through works can create a nuisance or create a significant hazard.

Conventional subdivision development can require the removal of topographical features for the development of level sites and the development of infrastructure, often modifying the natural flows of water through or from a site or sites. This can involve a large surface area and has the potential to create significant adverse effects.

More recent approaches to earthworks and subdivision development have been lower impact and choose to work with the contours of the land rather than altering it to fit for development.

Wanganui has a mix of soils and topography. This means there is a range of complex issues around stability, drainage, property and nuisance factors. Not all soils behave the same way and can require different management.

Poorly managed earthworks can result in noise effects on adjoining properties, along with the deposition of dust. However, while these create a nuisance, works that deposit silt into infrastructure, damage culturally

significant items or areas, create erosion or create instability can have disastrous consequences. Therefore, key measures to manage earthworks are prudent.

T8

Infrastructure Services Development

The term infrastructure and network utility services is applied to a range of structures, buildings, reticulation lines (eg, telecommunications) or spaces (eg, reserves) located on, in or over land or water.

Infrastructure and network utility services support land use activities, including subdivision, and contribute to the health, safety, socio-economic wellbeing and quality of life of people and communities. They also protect the environment from pollution by providing for the collection, treatment and disposal of discharges or waste material generated by land use activities.

Infrastructure services are regarded as physical resources. They have physical capacity limits and require on-going maintenance. The safe and efficient operation of the facilities, particularly the roading network, can be adversely affected by land use activities. Though facilities are “renewable”, they are costly to provide. Infrastructure services also use up land.

~~Utilities~~ Reticulated infrastructure services are an essential part of a District’s infrastructure and their upkeep and extension is necessary for the functioning of the District and for the safety, health and well-being of its residents. ~~Utilities~~ These include water systems, irrigation systems, sewerage and trade waste systems, stormwater drainage systems, ~~telecommunication networks, electricity and natural gas reticulation networks.~~

Historically most network utility services were provided either by the central government, local or supply authorities and the services were generally known as ‘public utilities’, reflecting their ownership by the public for the public good. These include telecommunication and electricity networks, and natural gas reticulation.

Though many network utility operators are now private companies seeking to make a profit from service provision, special recognition for network utilities is made in the District Plan because they provide an important function in terms of the viability of the District as a place for people to live and work. It is recognised in the Plan that although these network utility operations, improvements and maintenance can have adverse effects on the environment, the special characteristics of undertaking an activity on the basis of a network (of sites, pipes, lines etc) requires special provisions in the Plan to manage the effects.

Under the Resource Management Act, the Council is required to manage the effects of the use and development of utility networks and network utility on the environment as it would for any other structures. Given the essential role public utilities perform, it is recognised that utility operators require certainty as to those works which can proceed without consent application and those which do require consent. ~~The District Plan provisions can generally perform an enabling role where a large range of works are permitted, subject to conditions and terms.~~

The development of infrastructure services ~~needs to~~ should be:

- a. Co-ordinated with the planning and development of land use activities to ensure timely, adequate, affordable and cost-effective provision.
- b. Managed to ensure safe and efficient operation.
- c. Managed to avoid, remedy or mitigate any adverse effects on people, communities and the natural environment.

Issues

~~I19 — Maintain Existing Infrastructure — Maintaining the Existing Infrastructure System~~

~~Much of the existing infrastructure in the District is aging. There is particular concern about underground assets. There are also capacity limitations.~~

~~Regular maintenance, replacement and upgrading will be required to improve the level of service to existing development, allow further in-fill development and address pollution problems caused by the inadequacies of the existing system.~~

~~In some cases, it may be necessary to rationalise existing provisions. For example, some recreation and open space facilities are not suitably located according to need, resulting in some areas with under-utilised resources, and other areas with limited or inadequate resources.~~

~~In maintaining an efficient infrastructure system, the following concerns need to be addressed:~~

~~a. Timing — regular maintenance defers costly expenditure on replacement facilities, and timely replacement avoids breakdowns of services, causing inconvenience, or pollution problems.~~

~~b. Costs — budget provisions need to be made to enable the implementation of a long term maintenance programme.~~

~~I20 — New Infrastructure Services Meeting the Demand for New Infrastructure Services~~

~~1. In addition to maintaining the existing infrastructure system, a number of new capital projects need to be implemented in the future to meet development needs. These include:~~

~~a. Improvements to the quality and quantity of water supply.~~

~~b. Provision of collection, disposal and treatment of waste water, including a separated stormwater reticulation system.~~

~~c. Solid waste disposal facilities which meet environmental standards.~~

~~d. Improvements and extensions to the urban roading network to support a number of new developments.~~

~~e. Improvements and extensions to the roading network, and other local facilities to service rural development.~~

~~f. Improvements and extensions to utility networks to support new developments.~~

~~2. The separated stormwater reticulation system needs to be connected to individual properties. Funding arrangements between Council and private property owners have yet to be established for the implementation of this work.~~

~~In considering the demand for infrastructure, the following concerns need to be addressed:~~

~~a. Timing – provision of facilities will be co-ordinated with development to avoid premature expenditure or environmental problems caused by inadequate facilities.~~

~~b. Cost – it will be necessary to ensure cost-effective and efficient infrastructure development, and establish an equitable system of financial contribution.~~

~~c. Land requirement – it will be necessary to identify and justify the land requirement for publicly funded infrastructure services.~~

~~d. Responsibility – it will be necessary to clearly establish the relative responsibilities of Council, other agencies and the private developer in infrastructure development, and the circumstances under which the developer is responsible for upgrading or extending the existing services to cater for the new development.~~

~~e. Performance Standards – it will be necessary to clearly establish an adequate and appropriate level of provision to service urban and rural development.~~

I21 ~~Maintaining a Safe and Efficient Transportation and Utility Network~~ Conflict with network and reticulated infrastructure.

Infrastructure facilities have specific locational and operational requirements. Incompatible subdivision and land use activities can reduce the efficiency or impose constraints on the operation, maintenance, upgrading and development of these facilities. These effects can, in turn, adversely affect community health and safety.

1. Some infrastructure facilities, especially the roading network, airport and telecommunications facilities, have specific locational and operational requirements. Land use activities, including building development, can reduce the efficiency or impose constraints on the operations of these facilities. These effects can, in turn, adversely affect the safety and convenience of people and communities.

The roading network is the main form of transport in the District. It provides access for the movement of people and goods and a corridor for infrastructure services.

~~Changes in land use activities can affect the operational safety and efficiency of the roading network. In this respect, the location and design of property accesses (having regard to the size and function of the road) is an important consideration to avoid cumulative adverse effects on safety and efficiency of roading networks. These matters are considered under Council By-law and are therefore not controlled through the District Plan. Major areas of change in the District include:~~

~~a. Increased forestry, but mainly associated with logging activities – the heavy load and highly concentrated seasonal nature of activities put~~

~~pressure on the rural roading network, and the problems are compounded by the rugged terrain and sensitive environment with areas of high natural values and land.~~

~~b. Instability in much of the hill country where the majority of forestry activities are located.~~

~~c. Increased rural residential development resulting in higher traffic volumes on the internal roading network and gaining access onto State Highway 3.~~

~~d. Urban expansion - new developments in the Otamatea area will put pressure on State Highway 3 and the internal roading network.~~

~~e. Infill and redevelopment within the existing urban area - intensification of activities or land use changes increase traffic volumes and patterns and demands for parking, loading and unloading.~~

~~2. In considering the safety and efficiency of the roading network, the following concerns need to be addressed:~~

~~a. Responsibility - it is necessary to clearly establish the circumstances under which the developer is responsible for upgrading or extending the existing roading network to cater for the new development.~~

~~b. Costs - it is necessary to clearly establish a system for financial contributions by the developer towards the costs of the extension and upgrading of the roading network to cater for the new development.~~

~~c. Performance standards - it will be necessary to establish performance standards for urban and rural roads in the district, against which the impacts of developments and land use activities may be assessed.~~

~~The airport operations require an unobstructed flight path and approach area for landing and take-off. The flight path and approach area will need to be identified and the location and height of structures within the identified areas controlled to ensure the safe and efficient operation of air traffic.~~

~~The Wanganui airport is of strategic importance to the District and it needs to be recognised that aircraft noise is an inherent and unavoidable aspect~~

~~of airport operations. This issue should be considered in the location of noise-sensitive activities in the locality of the airport.~~

~~Telecommunications facilities often have specific locational requirements, eg navigational aids. Their operation relies on unobstructed visual corridors or air waves. The location and height of buildings within the transmission corridor needs to be controlled to avoid interference with telecommunication services and the accurate and efficient transmission of signals.~~

I22 ~~Managing the Environmental Impact~~ Effects of Infrastructure Development

Infrastructure facilities and network utility facilities are usually structures located on or over land. They create a visual and physical impact on the surrounding area.

Even where facilities are located underground, eg reticulation for water supply or drainage or telecommunication lines, their development still requires excavations and modification to the landform.

Examples of environmental concern associated with infrastructure development include:

- a. Earthworks and construction in areas of land instability.
- b. Damage to or loss of natural habitats, indigenous vegetation and significant landscape features.
- c. Visual impact of overhead lines and structures.
- d. Physical impact on private properties and communities.
- e. Disturbance of and damage to waahi tapu or other sites of cultural significance to Iwi.
- f. Stormwater and run-off from site development may create adverse effects on water quality in waterbodies.
- g. The health and safety of the community in which they serve and locate.

In addition, activities associated with the infrastructure facility can generate noise, dust, smell or high volumes of traffic to a level which adversely affect the amenity of adjacent areas.

~~The location and design of infrastructure facilities will be managed to avoid, remedy or mitigate damage to, or loss of, natural, cultural and amenity values of the land, people and communities.~~

~~G_h.The impact on the landscape or the coastal environment from stormwater disposal in the Coastal Residential Zone.~~

I47 Infrastructure Capacity

There is a lack of detailed information about the nature and performance of reticulated infrastructure within the urban areas of Wanganui. Some areas are believed to serviced by reticulated infrastructure that is at, or nearing, capacity. Therefore, this infrastructure may not be able to absorb further subdivision development or retain a suitable level of service, creating uncertainty.

I48 Sustainable site design

New and redeveloped sites with insufficient drainage, or designed with poor solar access, inappropriate site orientation, and a lack of consideration of the benefits of energy efficiency are less sustainable.

I49 Low impact urban design

While conventional solutions for the supply of services are effective in some circumstances, a lack of consideration of alternative approaches often limits the potential to achieve sustainable low impact design. These approaches can work with the existing natural processes and landforms, maximising environmental benefits, increase liveability and has the potential to reduce the cost of developing infrastructure.

I50 Poorly managed earthworks

Poorly managed earthworks and land modification can create a range of adverse effects on amenity values and the physical environment. These include dust, noise, damage to infrastructure and private property, the

alteration natural and modified water flow paths and can also adversely impact on cultural values.

I51 Development works

The development process through impacts on land modification, building location, scale, height or even presence alone, may adversely affect Maori values for that place.

I52 Maori Values

Maori values and information are not always well understood or respected in resource management processes.

I55 Compatibility with network utilities

Network utilities contribute to the health, safety and wellbeing of the community. However, this can be compromised by development that is not compatible with their operational requirements.

Objectives

Infrastructure Development

- O17 Infrastructure Development Which is Co-ordinated, Effective and Efficient in the Use of Natural and Physical Resources to Meet the Present and Foreseeable Future Needs of the District**

~~The provision of infrastructure facilities will be timely, affordable and at an appropriate level to service rural and urban development.~~

~~Existing facilities will be well maintained to sustain long term use. Infrastructure development will also be efficient in the use of land.~~

Sustainable subdivision and Infrastructure

- O40 Sustainable subdivision and infrastructure development in the Residential areas of Wanganui that:**

- a. Appropriately integrates infrastructure with land uses;
- b. Provides a safe, healthy and livable residential environment;
- c. Connects infrastructure and communities together;
- d. Is resource and energy efficient;
- e. Has low environmental impact and integrates the natural environment;

Urban Design, Subdivision and Infrastructure

- O41 Subdivision and infrastructure development that demonstrates the following qualities of good urban design defined in the New Zealand Urban Design Protocol:**

- a) Context
- b) Character
- c) Choice
- d) Connections
- e) Creativity
- f) Collaboration
- g) Crime Prevention Through Environmental Design (CPTED)

Subdivision qualities

O42 Subdivision infrastructure development that:

- a. Performs its function effectively.
- b. Is flexible in design.
- c. Provides resilience to natural hazards.
- d. Is durable over its lifespan.
- e. Provides capacity in reticulated services for the intended future land uses in the catchment;
- f. Provides for ongoing maintenance;
- g. Achieves lifecycle costs that are affordable to the community;
- h. Provides for the effects of climate change.

Subdivision and Network Utilities

O43 Subdivision and development in Wanganui that does not compromise the effective operation, maintenance, upgrading and development of existing network utilities.

O4 Recognition of Maori Culture and Traditions

~~Traditional practices and beliefs in resource management are to be recognised in the resource management framework for the District. To achieve this requires ongoing consultation with *hapu** and *Iwi** groups. Protection of sensitive information, and finding methods to achieve this, is a significant issue. are recognised and valued.~~

O44 Development and Maori values

Development that avoids or mitigates adverse effects on the cultural values of items and places of significance to Maori.

O45 Quality earthworks development

Earthworks and land modification in Wanganui that maintains or enhances:

- a. Amenity values
- b. Landforms and natural processes
- c. The efficiency and effectiveness of infrastructure
- d. The safety of people and property
- e. The stability of soils

Policies

- P1** ~~Promote a pattern of urban development that is **cost-effective, compact and efficient** in the use of land and infrastructure services; and **co-ordinated with a long term programme of infrastructure development.**~~

~~Urban development is an on-going process of intensification and change within the existing urban area, and expansion into new areas. It uses up land and requires the timely provision of infrastructure facilities* to support land use activities.~~

~~-~~

~~This policy recognises that urban development and infrastructure development should be co-ordinated. It also recognises that some areas are easier and cheaper to service than others.~~

~~-~~

~~Implementation of this policy relies on Council* undertaking long term comprehensive planning to assess future development needs and the most cost-effective options for urban expansion.~~

~~-~~

~~This approach is considered appropriate as it provides input to Council's* asset management and financial planning. It also provides certainty and a framework to guide private development.~~

P121 **Appropriate Residential zone development**

Require new subdivision and development of residential scale, intensity, and character to locate within the Residential Zone.

P2 **New Development within the Urban Boundary**

~~Encourage Require new urban subdivision and development to locate in areas within the urban boundary and where there is available infrastructure capacity or where upgrades or extensions to services have been planned or programmed~~

~~Greenfield development is often an easier development option than infill development or redevelopment, but it may not be the most cost-effective and efficient in the use of land and *infrastructure facilities**.~~

~~-~~

~~This policy aims to optimise the use of existing land and *infrastructure facilities* * for urban development before opening up new areas for urban development.~~

~~-~~

~~Council*~~ is required to indicate the planned level of infrastructure service and timing of provision in different parts of the urban area. This approach forms part of ~~Council's*~~ long term asset management and financial planning. It also provides certainty and a framework to guide private development.

~~This approach is considered appropriate to promote a cost-effective and efficient pattern of urban development.~~

~~* refer to definitions~~

P122 Residential levels of service

Require new residential subdivision and development to locate in areas where there is a suitable level of service from reticulated infrastructure available.

P123 Allocated infrastructure

Avoid subdivision and land use development that utilises infrastructure capacity allocated for other identified areas or uses.

P124 Reduction in residential allotment size

Provide for a reduction in minimum residential allotment size where the entire infrastructure catchment can support both:

- a. The level of service required by the proposed development, AND;
- b. The proposal will not reduce the ability of the catchment to provide for development in any other location for which it is intended to service.

P125 Quality in-fill development

Promote infill subdivision and development that:

- a. Complements the character of the area in which it is located
- b. Is located in an area that has capacity for reticulated services
- c. Provides on-site amenity
- d. Enables continued solar access.

P126 Rural Lifestyle Zone connections

Avoid connections to, and extensions of, the reticulated infrastructure network in the Rural Lifestyle Zone.

P127 Provide adequate information

Ensure adequate information is provided prior to the granting of subdivision or land use consent to demonstrate that there is provision for additional connections to reticulated infrastructure and network utilities to all allotments to a suitable standard.

P128 Infrastructure qualities

Require Infrastructure to be designed, constructed, and able to be maintained in a manner that is:

- a. Effective and efficient.
- b. Able to be maintained in an effective, efficient manner.
- c. Cost effective and affordable.
- d. Durable.
- e. Integrated with other infrastructure and land uses.
- f. Responsive to local conditions.
- g. Compatible with network utilities and other reticulated infrastructure,
- h. Designed and constructed taking into account the effects of climate change.
- i. Resilient to natural hazards.

P74 Optimise the use of existing infrastructure and ensure the provision of additional infrastructure is timely, logical, affordable and cost-effective

Promote the optimal use of existing reticulated infrastructure by identifying areas of increased density where it does not compromise environmental quality and amenity values prior to developing extended or new infrastructure.

~~This policy focuses on the maintenance, upgrade and extension of the existing infrastructure systems provided by the Council and other network utility operators. Existing facilities are a major physical resource of the District. While they can be renewed and extended, they are costly to provide. Therefore, it is necessary to make the best use of existing facilities to meet present and future needs. This Plan makes provision for the continued operation, maintenance and upgrading of existing utilities.~~

~~Infrastructure development requires a long lead time. Planning for infrastructure development will look at and provide for long term needs.~~

This policy relies on Council adopting a strategic approach to infrastructure development. This is considered appropriate and effective, given Council's responsibilities in asset management under the Local Government Act 1974. The preparation of long term infrastructure development plans provide certainty to developers about the timing and level of availability of infrastructure services. They also provide Council with a work programme and framework for financial planning.

The implementation approach also relies on District Plan rules and conditions and terms to set out responsibilities for developers. This is essentially a user-pays approach. Also, the use of incentives, in the form of reduced charges or provision of services, and requirements for financial contributions from developers, is to influence development to locate where there is spare infrastructure capacity.

Future public works will be provided for either by way of designations (through notice of requirement procedure) and identification on the District Plan maps, or by way of District Plan rules.

These approaches are considered appropriate to achieve efficient, affordable and cost-effective infrastructure development.

P75 Infrastructure for Development

Ensure the provision of infrastructure services is adequate and appropriate to the level of development and the needs of the respective areas

Currently, there are different levels of infrastructure service available in different parts of the District. It is not efficient, affordable or cost-effective to provide the same level of service throughout the District.

This policy is aimed at rationalising the level of infrastructure service provision. The level of service will relate to the nature and scale of activities, and, in some cases, to the particular local circumstances.

The policy also sets out the respective responsibilities of Council and developers. It requires Council to indicate the planned level of infrastructure service and timing of provision in different parts of the District. Appropriate

~~District Plan rules covering conditions and terms for infrastructure provision by the developer will be established.~~

~~This implementation approach is considered appropriate and efficient. It provides input to Council's asset management planning and a framework for financial planning. It provides certainty to developers by signalling what provisions are available, and when, and what contributions are required of them under different circumstances.~~

P129 Reticulated catchment requirements

Require the design of new reticulated water, wastewater and stormwater infrastructure to take into account:

- a) The relevant upstream and downstream capacity and restrictions in the servicing catchment when land in the catchment is fully developed to a level anticipated by the District Plan.
- b) The future anticipated servicing demand of the proposed development when completed.

P130 Connectivity of reticulated services

Require connectivity and compatibility between existing and new reticulated infrastructure.

P132 Appropriate level of infrastructure

Require all new residential subdivision to connect to an appropriate level of infrastructure and network utilities prior to the issue of a certificate pursuant to Section 224 of the Resource Management Act 1991.

P76 Infrastructure for New Subdivisions.

Ensure on-site infrastructure facilities, and an appropriate portion of the cost of providing upgrades or extensions to district infrastructure facilities to serve new subdivisions, building developments or other land use activities, are paid for by the developer.

~~There are two types of infrastructure services: on-site local services like internal roads, site drainage and connections to reticulated mains water supply, sewerage and drainage (or provision of appropriate alternatives if a reticulated system is not available); and trunk or district services like the roading network, water supply and, liquid and solid waste disposal systems.~~

~~On-site services are provided and paid for by the developer. Where upgrades or extensions to existing District infrastructure facilities are necessitated by a~~

~~proposed development, then an appropriate portion of the cost of the District upgrade or extension is to be paid for by the developer.~~

~~There may be circumstances where the proportion of contribution by the developer may be reduced, eg if a higher standard of provision is required to serve a catchment area wider than the proposed development, or if higher environmental standards are required to protect outstanding landscape features or significant natural values.~~

~~District Plan rules set out the circumstances and amounts of contribution by the developer. This provides a clear, consistent and equitable system of user-pays contribution to infrastructure development in the District.~~

~~**P77 — Encourage an efficient use of land for infrastructure development**~~

~~Infrastructure development uses up significant areas of land. Opportunities for minimising the land-take by infrastructure development need to be explored. These could be through co-location of facilities or project design. Rationalisation of the use of sites no longer required for their original use is another possibility.~~

~~It is not possible to set standards for design to minimise land-take for new projects. Implementation of this policy therefore relies on negotiations with developers, relevant authorities, utility companies and agencies with responsibilities for infrastructure development.~~

~~**P79 — Manage roads in the District, consistent with their transportation functions, according to the following criteria:**~~

~~**1. — National routes**~~

~~— National Routes are motorways and principal state highways:~~

~~— a. — which form part of a network of national strategic importance;~~

~~— b. — which are a significant element in the national economy;~~

~~— c. — for which a high level of user service must be provided;~~

~~—~~

- ~~— d. which have the highest degree of access control and, where required, standards for access.~~

~~2. Primary arterials~~

~~Primary (regional) arterials are roads which:~~

- ~~— a. serve as links of strategic importance between regions or within regions and between districts;~~
- ~~— b. are a significant element in the regional economy;~~
- ~~— c. have access standards for permitted activities determined principally on the basis of strategic function and traffic volumes.~~

~~3. Roads included in this category are:~~

- ~~— a. state highways not included in the National Routes category;~~
- ~~— b. roads giving access to important tourist areas or significant areas of population;~~
- ~~— c. roads linking different transport modes;~~
- ~~— d. roads providing significant intra-urban links;~~
- ~~— e. all other roads of regional or inter-regional importance.~~

~~4. Secondary arterials~~

~~Secondary (district) arterials are roads forming links between residential, commercial, industrial or recreational land use activities and which :~~

- ~~— a. serve as links of strategic district importance within or between districts, and in particular provide 'commuter' routes for car traffic from the suburbs to the town centre;~~
- ~~— b. are a significant element in the local economy;~~
- ~~— c. often also serve as local roads.~~

Access standards are determined following careful consideration of:

- a. form (the physical alignment of the road);
- b. function (the present and future role of the road);
- c. traffic volume criteria.

5. Collector routes

Collector routes are roads which:

- a. are locally preferred routes between or within areas of population or activity;
- b. complement district arterials but have property access as a higher priority;
- c. are usually paved and have standards including access standards, suitable to the safety requirements of the traffic volume on each section.

6. Local roads

Local roads are all other roads whose primary function is property access and with standards including access standards appropriate for the traffic use. use of the road by occupants of the sites adjoining the road reserve.

This policy requires the adoption of a hierarchy for the roading network which is a major physical resource in the District. The use of a roading hierarchy is a well-established method to promote the safety and efficiency of the roading network. The hierarchy classifies roads based on their purpose (their relative through movement and property access functions) and the nature and volume of traffic that they can carry in a safe and efficient manner.

It also provides a framework to guide future development in the District as the hierarchy contains road designations and indicative roading patterns. These encourage strategic linkages which ensure the road network is not being compromised and/or future development is not stifled by lack of access. Indicative roads signify council's intentions with regards to the

future function of the road and also which parcels of land should be able to gain access.

The intention is to promote safety, efficiency and linkage while ensuring that the final layout of the road is flexible and financial responsibility remains with the developer.

P80 Protect reticulated and network utility infrastructure resources in the District from the adverse effects of from inappropriate other land use and subdivision activities development which compromises their effectiveness

Land use activities can interfere with, or constrain, the operation of infrastructure resources such as transportation and telecommunications networks.

For example, land use activities generate pedestrian and vehicular traffic which may exceed the carrying capacity (volume and axle weight) of the roading network. The location and height of structures can obstruct the operation of the airport and telecommunications facilities.

Activities which are sensitive to noise are generally not suitable in close proximity to the airport, unless adequate mitigation measures can be implemented.

This policy* mainly relies on District Plan rules to set out the circumstances and conditions and terms for controlling land use activities, including building* development*. Operational requirements, especially safety standards, of essential services like the transportation and telecommunications network

P133 Integrated streets

Promote street design streets that integrate transport functions with adjoining lands uses in a manner that is appropriate for surrounding environment.

P134 Liveable streets

Encourage the development of liveable streets that contribute to a sense of place, safety and positive community interaction by enabling use of local roads for a variety of purposes that result in the integration of adjoining land uses and people with the transportation network.

P135 Rooding hierarchy

Require new transport corridors to be designed, constructed, and operated in accordance with their intended function in the Rooding Hierarchy.

P136 Multimodal Connectivity

Require the connectivity of new streets and public accessways with existing infrastructure, in a logical progression and in a manner that does not compromise future subdivision or development of surrounding sites at the time of subdivision.

P137 Legal and physical access

Require new allotments to have legal and physical access to a formed legal road.

P138 Low impact stormwater management

Encourage the use of low impact stormwater management in subdivision and development Zone where ground conditions are suitable.

P139 Stormwater mitigation

Require the use of low impact stormwater management where downstream capacity in the reticulated system likely to be exceeded and ground conditions are suitable.

P140 Reticulated wastewater

Require new allotments in the Residential and Neighbourhood Commercial Zones to connect to the reticulated wastewater network.

P141 Reticulated potable water

Require new allotments in the Residential and Neighbourhood Commercial Zones to connect to reticulated potable water network.

P142 On-site servicing

Require new allotments in the Rural and Rural Lifestyle Zone to provide for wastewater and stormwater disposal onsite, and sufficient non-reticulated potable and fire fighting water supply.

P143 Alternative infrastructure design

Enable the use of quality alternative infrastructure solutions where they are in accordance with industry best practice, quality urban design and infrastructure design principles where approved by the Manager, Infrastructure Services.

P144 Assessment of alternatives

Require the assessment for the approval of alternative infrastructure solutions to be processed through the Alternative Design Procedure and meet the assessment criteria for quality urban design and infrastructure.

P145 Quality urban design

Promote subdivision and infrastructure development that demonstrates the good urban design qualities of the New Zealand Urban Design Protocol

P146 Low impact development

Promote the integration of natural processes, including solar energy, landforms, land features, and overland flow paths into subdivision and infrastructure design and construction where appropriate.

P147 Crime Prevention Through Environmental Design (CPTED)

Consider the principles of Crime Prevention Through Environmental Design (CPTED) when incorporating public open space into subdivision including passive surveillance, definition of public and private spaces, and access management.

P148 Site suitability

Require subdivision creating additional residential allotments to provide safe and stable building platforms suitable for residential development.

P149 Engineered building platforms

Avoid the creation of new residential allotments that require significant additional engineering works prior to building development.

P81 Provide for network utilities

Provide for the establishment, maintenance and repair of network utilities to meet the needs of the community, in a manner that enables adverse environmental effects to be avoided, remedied or mitigated, including effects on natural, cultural and amenity values

~~This policy recognises that the efficient and practical operation of network utilities is in the interests of community well-being, health and safety. It is~~

~~recognised that infrastructure facilities require regular maintenance and occasional repairs to ensure safe and efficient operation. This policy also recognises that some larger scale network utilities have the potential to have significant environmental effects and, while they cannot always be avoided, remedied or mitigated, it is important that the Plan enable these to be considered against operational requirements and the circumstances of the site concerned.~~

~~Network utilities are a vital element of a functional District. Infrastructure associated with network utilities, where not appropriately designed or located can have the potential to have an adverse visual effect.~~

~~The effects of infrastructure development will be managed to avoid, remedy or mitigate damage to, or loss of, identified environmental values. These values include outstanding landscape features, the natural character of the coastal environment, wetlands, lakes and rivers and their margins, areas of significant indigenous vegetation and natural habitats, and sites and areas of significance to Iwi.~~

~~This policy provides a clear statement of what values are significant and require protection. Conditions and terms are used in this plan to manage the environmental effects of infrastructure development. In relation to utilities which are discretionary activities, it will be necessary to consider the extent to which environmental effects can be avoided, remedied or mitigated.~~

~~While provision is made for a range of utilities, any adverse effects of those activities are dealt with. The policies give specific direction with regard to the need to deal with utilities such as lines, the visual impact of which can be avoided by underground reticulation.~~

P150 Telecommunication, electricity and gas networks

Consider the requirements for telecommunication, electricity and gas networks in the assessment of land use and subdivision consents.

~~P82 Infrastructure for new subdivision development~~

~~Ensure that key infrastructures are accommodated for new subdivision and development~~

~~Minimum standards of water supply, sewage reticulation or disposal, stormwater disposal, and network utilities are important to maintain the amenity requirements and expectation of the community. These standards include street furniture (footpaths, landscaping) that promote the use of the roading network as a public space. Without minimum standards health problems and fragmented services may result.~~

~~P83 Use of the Road Corridor Enable the use of the road corridor for a variety of purposes, while protecting its transportation function and managing conflicts.~~

~~The primary functions of road corridors are to provide access to properties and to enable the movement of people and goods. However the corridors are also used for a number of other activities. When assessing the appropriateness of District Plan management of the corridors, it is important that these other activities are considered.~~

~~Most of Wanganui District's utility service infrastructure (which includes telecommunication lines and cables, water supply and wastewater pipes, and electricity and gas lines) are located within the road corridors. These services are constructed, maintained, upgraded and replaced from time to time.~~

~~Other activities occurring in road corridors include:~~

- ~~▪ pedestrian and cyclist facilities (including formal and informal walkways and cycle ways) and associated street furniture~~
- ~~▪ property accesses~~
- ~~▪ amenity (or beautification) planting of gardens and trees~~
- ~~▪ lighting for pedestrian and property security~~
- ~~▪ parking~~
- ~~▪ "Mainstreet" type programmes especially in commercial centres~~
- ~~▪ signposting~~

~~▪ open space areas used for activities such as vehicle stopping, picnicking, selling produce and grazing stock.~~

~~In built-up areas shop verandas also encroach into (or more accurately over) the road corridor.~~

~~— It is appropriate that these activities continue to occur within the road corridor. However the effects of these activities require some management to ensure conflicts with the primary function of the corridor and with each other are avoided managed.~~

P151 Springvale indicative Development Plan

Require all subdivision and development in the Springvale Indicative Future Development Area to proceed generally in accordance with the provisions of the Springvale Indicative Development Plan to ensure that:

- a. Stormwater is managed comprehensively and not in an ad-hoc manner;
- b. The transport network is consistent with the Wanganui Urban Transport Strategy, and the indicative roading layout;
- c. Encourages connectivity of services and land uses with public open space;
- d. Quality urban design outcomes are achieved;
- e. Infrastructure is developed in a logical sequence, and generally designed and located as shown on the Springvale Indicative Development Plan.

P152 Conflict with Indicative infrastructure

Avoid Development within the Springvale Indicative Future Development Area that:

- a. Is in conflict with the indicative transport layout and the stormwater management infrastructure, including ponding areas shown on the Springvale indicative development Plan;
- b. Results in ad-hoc, unconnected, and piecemeal infrastructure development.

P153 Limited development

Enable limited development within the area identified as within the Springvale Indicative Future Development Area that is zoned Rural Lifestyle only where:

- a. It directly adjoins existing areas of residential development and gains access from Kelsi Street;
- b. Servicing capacity has been identified as sufficient to service the scale of the proposed development;
- c. The development is generally in accordance with the provisions of the Springvale Indicative Development Plan.

P154 Springvale Indicative Future Development Area

Avoid any land use and/or subdivision development that allocates reticulated infrastructure intended to service the Springvale Indicative Future Development Area to other areas.

P155 Low impact earthworks and land modification

Promote low impact earthworks and land modification that results in minimal modification to landforms and overland flow paths.

P156 Effects of earthworks

Avoid earthworks and land modification that results in damage to property or significant nuisance effects.

P157 Maori values and earthworks

Enable the incorporation of Maori cultural values and practices into large scale earthworks and land modification, and within areas of cultural significance.

Methods

M4 Levels of Urban Infrastructure

~~Within the defined urban *boundary**, recognise 2 levels of infrastructure provision:~~

~~a. Urban – where services covering water supply, *roading** (including footpaths and streetlights), sewerage collection, treatment and disposal, stormwater collection and disposal and rubbish collection and disposal are available.~~

~~b. Restricted services residential – where limited services are available, no upgrades or extension to improve the level of service will be carried out, and land use *activities** are required to provide their own services.~~

Only provide reticulated water services to land contained within the urban boundary*

M5 District Plan Maps showing levels constraints of infrastructure services

~~Identify on District Plan Maps areas with different levels of infrastructure services and integrate with the identification of urban zones.~~

Identify and map in the District Plan maps areas of infrastructure that are constrained with regard to capacity and have a limited or no further ability to cater for new development.

M302 Catchment Capacity

Council to assess and identify it's infrastructure catchments and identify those that are nearing, at, or exceeding capacity. This information will then be used to review the boundaries and provisions for subdivision and development, including provision for mixed/high density development, in the Residential zone.

M17 Prepare a ~~l~~ong term capital works development programme

~~Prepare as part of the preparation of an Asset Management Plan, a long term capital works *development** programme (say 10 years) showing the~~

~~scale, location, sequence, timing, and relative priority of Council* funded infrastructure development* to service urban development*.~~

Prepare a plan that co-ordinates the funding and construction of new infrastructure with identified areas of land for growth and the anticipated landuses.

M18 District Plan rules for infrastructure provision

Implement District Plan rules with conditions and terms for infrastructure provision, responsibilities of the developer, and conditions and terms for resource consent to guide private sector *development**.

M20 Linked system of open space and reserves

Develop a linked system of open space and reserves.

M79 Encourage exchange of information

Encourage exchange of information and early consultation and negotiations with land users and industry groups regarding *development** proposals.

M82 Support/participate in the development and implementation of voluntary codes of practice by industry groups

M100 Carry out surveys on subdivision characteristics in the District

Carry out surveys on *subdivision** characteristics in the District and report on findings.

M303 Transition to NZS 4404:2010

Develop a new companion document for NZS 4404:2004 incorporating appropriate material from NZS 4404:2010 until such time as a new document encompassing the content of the latter document can be programmed and resourced.

M304 Subdivision and Urban Design Guides

Develop a Subdivision and Urban Design Guide or Guides to assist Council and Developers integrate good urban design outcomes into developments.

M305 Low impact stormwater guide/manual

Develop a guide/manual to help developers successfully integrate low impact stormwater management solutions into development proposals.

M306 Developers forum

Establish and co-ordinate an ongoing forum for the development community to openly discuss 'big picture' policy issues around subdivision and development to monitor District Plan effectiveness on an ongoing basis.

M307 Earthworks best practice guide

Develop a 'best practice' guide for the undertaking of earthworks to assist in promoting low impact works.

M308 New Active monitoring

Actively monitor sites of significant and high risk earthworks for compliance.

M309 Tangata Whenua monitoring

Where appropriate, include Tangata Whenua in the monitoring of large scale earthworks.

M224 Prepare Asset Management Plans. Work to include:

- a. Assessment of capacities and present and future needs.
- b. Assessment of opportunities, constraints and costs (economic, environmental and social/community).
- c. Evaluation of alternative locations or options for infrastructure development.
- d. Preparation of a long term capital works development programme (say 10 years) showing the scale, location,

sequence, timing, and relative priority of Council funded infrastructure development.

- e. Preparation of long term Asset Maintenance Plans that set-out the maintenance programme for Council funded infrastructure services.

M225 Set out the circumstances for, and amounts of, financial contribution from the developer to the development of new infrastructure services.

M226 Identify land requirements (designations or other appropriate provisions) for infrastructure development.

M227 Identify heavy transport routes.

~~M228 Recognise four levels of infrastructure provision within the District:~~

- ~~a. Urban – where services covering water supply, roading (including footpath and streetlights), sewerage collection, treatment and disposal, stormwater collection and disposal, and rubbish collection and disposal are available;~~
- ~~b. Restricted Services Residential – where extension of services from the existing systems is not economic. In these areas land use activities are required to provide their own services.~~
- ~~c. Rural Settlements – where limited services are available. Any future upgrades or extensions to be implemented as part of a comprehensive rural settlement development programme to be planned in consultation with local community.~~
- ~~d. Rural – where apart from roading, some waste disposal and water supply facilities, services are generally not~~

available. Upgrades and extensions to meet future needs to be monitored and reviewed.

- e. ~~Coastal Residential Zone – where water supply and sewage disposal are reticulated from extension of the urban system and stormwater is dealt with through a zone-specific system.~~

~~M229 – Develop appropriate conditions and terms for infrastructure provision, responsibilities of the developer, and conditions and terms for resource consent to guide private sector development.~~

M230 – Implement rules stating the circumstances for, and amounts of, financial contribution from the developer.

M231 – Negotiate with subdividers/developers and apply performance criteria for roading design which will enable land take to be minimised while achieving acceptable safety and efficiency outcomes.

M232 – Encourage the co-siting of structures, sharing of utility channels and corridors, and the location of utilities within the road reserve.

M240 – Identify a roading hierarchy on Plan Maps.

M241 – Implement conditions standards for the design of local access roads.

~~M242 – Periodically review the District Land Use Transportation Plan, eg investigate arterial routes around the urban area and identify the need for upgrading, assess the need for traffic management measures, assess the need and alignment for an alternative limited access road etc.~~

M243 – Designate future roading where desirable to meet demand generated by new subdivision and development.

M244 – Impose building line restrictions to protect future road widening where it is inappropriate to designate land immediately.

- M245** Depict an indicative roading pattern in strategic areas. These notations will show linkages between land parcels and the road network.
- M246** Consider works and projects through the Council's Annual Plan process and through the mechanisms of the Roading Asset Management Plan and regular traffic safety studies to encourage the safe and efficient movement of cyclists and pedestrians.
- ~~**M247** Promote the adoption of standards for the maintenance, upgrading and construction of roads consistent with the roading standards set out in Subdivision Performance Criteria.~~
- ~~**M248** Liaise and negotiate with the appropriate roading authorities and sector groups regarding transportation needs of new activities including responsibilities for, and costs of, upgrading rural roads.~~
- ~~**M249** Rules that address street congestion and promote safe access arrangements.~~
- M250** Use Land Information Memoranda (LIM's) and Project Information Memoranda (PIM's), and building and resource consent applications to advise of applicable Civil Aviation Regulations relating to airspace restrictions associated with Wanganui Airport.
- M251** Support the ~~declaration~~ use of Limited Access Roads as appropriate.¹
- M252** Identify environmentally sensitive areas, eg landscape protection areas, waahi tapu sites etc.
- M253** Develop advisory guidelines for landscape protection.
- M254** Identify the circumstances and criteria for requiring environmental impact assessment.

¹ Roads with very high traffic volumes may be declared "Limited Access Road" (LAR) under Part XXI of the Local Government Act 1974 or under the Transit New Zealand Act 1989. The effect of an LAR declaration is to reduce, or control at an acceptable intensity, access to the road to protect the efficiency and safety of the road for the road user. The majority of LARs are State Highways, controlled by Transit New Zealand.

- M255** Provide conditions and terms for permitted activities and use resource consents and designations (notice of requirements) procedures to assess the environmental effects of utility activities where they are not permitted activities and are not undertaken in accordance with an existing designation.
- M256** Establish mechanisms for liaison and consultation with, and participation of, Iwi in matters relating to the impact of infrastructure development on sites or land of significance to Iwi.
- M257** Co-ordinate activities among network utility operators and, where possible, jointly develop projects to avoid, remedy or mitigate effects, particularly the impact of construction.
- M258** Encourage utility operators to site and operate their works in a manner which avoids, remedies or mitigates any adverse effect on health and safety of the public.
- M259** Encourage utility companies to remedy or mitigate the visual effects of new distribution and reticulation networks (such as lines and pipes) by undergrounding them, particularly in urban areas and rural residential developments. It is recognised that geotechnical and other physical factors may prevent this happening in some circumstances. Encourage new (above ground) transmission networks to avoid where practicable, urban and rural residential areas.
- ~~M260~~ Implement conditions and terms for access to new lots and development.
- ~~M261~~ Implement conditions and terms for water supply waste disposal, sewage disposal and electricity and gas supply arrangements for new lots and developments.
- ~~M262~~ Prepare a Corridor Management Agreement in consultation with affected parties.
- ~~M263~~ Consider by-laws to address inappropriate heavy vehicle movement and parking issues.

~~M264 Use By-laws to manage the location and width of vehicle crossings.~~

Rules/ Standards

R259 General Rule - National Environmental Standards

The provisions of the following National Environmental Standards for shall apply with no further alteration or modification by this Plan:

a. The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.

Note: The above National Environmental Standard only applies to the actual or potential effects of contaminants in soil on human health. All other provisions within this Plan that do not manage the effects of contaminants in soil on human health apply.

Subdivision

R260 Controlled Activities:

The following are controlled activities in all zones:

- a. Boundary adjustments, subject to meeting the Performance Standards for the relevant zone.
- b. Conversion of cross lease allotments to freehold.

Council retains control over following matters:

1. The extent to which the amenity values of the surrounding areas are affected and compliance with the general subdivision Standards.

Note: Applications subject to this rule shall be considered without service, public notification or written approvals from affected persons.

R261 Restricted Discretionary Activities:

The following are restricted discretionary activities:

- a. Subdivision in the Residential Zone, Rural Lifestyle Zone, Neighborhood Commercial Zone, and Reserves and Open Space Zone unless otherwise stated.

Council restricts its discretion to the following matters:

1. the ability and the requirement for a proposal to meet all the relevant Subdivision and Infrastructure Performance Standards, Policies.
2. the ability of the proposal to meet the relevant General Urban Design Criteria, General and infrastructure specific Assessment Criteria.

Note: Applications subject to this rule shall be considered without service, public notification or written approvals from affected persons.

Refer to [Resource Consent Assessment Criteria.](#)

R262 Discretionary Activities:

The following are discretionary activities:

a. Any subdivision or infrastructure development that results in non-compliance with any Performance Standard or Standards unless otherwise stated.

b. Subdivision within the Springvale Indicative Future Development Area, including boundary adjustments; in general accordance with the key infrastructure linkages and indicative roading layout, detailed in the Springvale Indicative Development Plan that gains access from Kelsi Street.

c. Subdivision in the Residential Zone that does not meet the minimum net allotment size of 450m².

d. Subdivision in the Otamatea that does not meet the minimum net allotment size of 1000m².

Refer to [Resource Consent Assessment Criteria.](#)

R263 Non-Complying Activities:

The following are non-complying activities:

a. All other subdivision in addition to R262(b) in the Springvale Indicative Future Development Area.

b. Subdivision in the Rural Lifestyle Zone, excluding allotments within the Springvale Indicative Development Area that proposes to connect to or extend reticulated infrastructure including water, wastewater, and piped stormwater drains.

c. Any subdivision or development that fails to comply with any Performance Standard and is not specified as provided for as discretionary activities.

Refer to [Resource Consent Assessment Criteria](#).

Performance Standards

The following Performance Standards apply to all subdivision development unless otherwise stated:

R264 Performance Standard - Subdivision engineering basis

Subdivision and infrastructure design and construction shall be in accordance with NZS: 4404 2004 and the Wanganui District Council Engineering Document 2012. Where there is conflict between NZS 4404 2004 the Engineering document prevails. The provisions in the District Plan shall prevail over both NZS 4404 2004 and the Supplement.

R265 Performance Standard - Boundary Adjustments

a. Boundary Adjustments shall comply with the following Standards:

- i. No additional number of titles shall result; and,
- ii. Existing allotments that comply with the minimum site area for the zone prior to the boundary adjustment should not be made non-compliant; and,
- iii. Existing allotments that do not comply with a minimum site area for the zone shall not be made less compliant; and
- iv. The allotments being adjusted must share a contiguous boundary.

R266 Performance Standard - Existing Buildings

a. Any new boundaries created by subdivision shall be located such that any existing buildings comply with the rules of the relevant zone or that the appropriate land use consents have been obtained.

b. Subdivisions shall comply with the General Rules of this *Plan** to the extent that they are applicable. In particular, rules in the following plan sections apply:
- Rule R17 Natural and Cultural Heritage Resources

- Rule R18 Protected Trees
- Rule R19 Riparian Margins
- Rule R24 Transportation

R267- Performance Standard - Allotment Size

a. New allotments, including balance allotments, shall meet the requirements of the following table:

Table 1 Minimum net allotment area

<u>Zone</u>	<u>Site Size Requirements - Net Site Area – Metres² (m²)</u>
<u>Rural Lifestyle</u>	<u>Minimum 5000m²</u>
<u>Residential</u>	<u>Minimum 450m²</u>
<u>Neighbourhood Commercial</u>	<u>None</u>
<u>Reserves and Open Spaces</u>	<u>None</u>
<u>Otamatea Development Overlay</u>	<u>Minimum 1000m²</u>
<u>Springvale Indicative Future Development Area</u>	<u>Refer to the underlying zoning</u>
<u>Sites Specifically for Network Utilities</u>	<u>No Minimum</u>
<u>Rural</u>	<u>10,000m² (1 Hectare)</u>
<u>All other zones</u>	Allotments shall be of sufficient size and shape to contain an activity or development in a manner that complies with the rules and standards for the zone concerned.

b. In all other zones without a minimum lot size, allotments shall be of sufficient size and shape to contain an activity* or development in a manner that complies with the rules and standards for the zone concerned.

R268 Performance Standard - Easements

a. Where private service connections, the diversion of overland flows, and vehicle access will be located over private property, including the diversion of overland flowpaths, subdivision shall be required to provide suitable easements in respect of any of the following:

- i) the creation of right of way access to any allotment
- ii) the right in respect of a dominant tenement or easement in gross to lay, construct, erect, convey, discharge or maintain an underground or overhead water, electric power, telecommunications, gas, sewage, or stormwater service; widths shall be in accordance with the requirements of NZS 4404 2004 and the Wanganui District Council Engineering Document 2012 unless stated in this Plan.
- iii) any other easement that the specific situation may require.

R269 Performance Standard - Site suitability

a. Each allotment intended to accommodate building development in the future shall identify at least one potential Building Platform that meets the following:

- i. The Building Platform shall be a rectangular area of land for building purposes measuring no less than 10 metres by 15 metres;
- ii. For subdivision in Zones that require on-site effluent disposal shall also be required to identify an area of no less than 30 metres by 30 metres suitable for on-site effluent disposal,
- iii. For all other zones, identify an area suitable for the likely scale and nature of development.

b. In addition, the identified Building Platform shall be required to meet the following requirements:

- i. Shall be free of buildings and structures (where intended for future development), building restrictions, easements, yard setback requirements, or other restrictions to building; AND,
- ii. Shall be identified on the proposed plan of subdivision, AND
- iii. Shall not be subject to material damage by erosion, falling debris, subsidence, or slippage; AND,
- iv. Shall meet the requirements for 'Good Ground' for 'Conventional Residential Development' in NZS: 3604 2011 for standard timber framed buildings, AND,
- v. Exceed a minimum of one metre in height above subsurface groundwater at all times, AND
- vi. Have the ability to achieve compliance with the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZCEP:34 2001) for the likely activities on any such allotment.

c. The following are exempted from identifying a Building Platform:

- i. Subdivision to create allotments for the sole purpose of accommodating network utilities, parks and open spaces, and roads;

- ii. Subdivision around existing buildings where no further development will result;
- iii. Applications for boundary adjustments where no additional development will result.

d. The applicant's representative shall certify compliance with the above requirements, and shall include:

- i. A record of the level of consideration and investigations, if any;
- ii. Any constraints on development that do not require specific foundation design;

e. Where ground conditions can not be certified as meeting the above, or where significant works or specific foundation design is required, a supporting geotechnical report from a suitably qualified and experienced professional shall be provided detailing the suitability of the site for the future intended development.

The report shall also outline any restrictions or conditions that may be required prior to the grant of a certificate pursuant to Section 224 of the Resource Management Act and any on-going restrictions after the issue of that certificate.

f. In addition to the above and subject to any other requirement of this Plan,

The design, and any necessary construction, of building platforms shall not result in the diversion of overland flows unless such diversions:

- i. Are discharged into an approved stormwater system; or,
- ii. Approved by way of easements over all properties affected.

Note: 1. The above requirements are in addition to any requirement placed on development by the provisions of the Natural Hazards and Earthworks provisions of the District Plan and the requirements of Section 106 of the Resource Management Act.

2. The onus is on the applicant to demonstrate the site is suitable for development without significant works in the first instance, prior to the issue of subdivision consent.

3. Allotments that have been assessed pursuant to the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health are deemed to be suitable for the matters in which the Standard controls only.

R270 Performance Standard - Site serviceability

-

a. Each new allotment shall connect to reticulated water services (sewer, stormwater and water supply) excluding the Rural Lifestyle zone which shall be required to demonstrate is can provide those services within the proposed allotment.

Note: For the purposes of this rule, open drains and swales are considered reticulated stormwater services only where owned and maintained by the Wanganui District Council.

b. Where connections are required, these shall be provided to the allotment boundary in accordance with NZS 4404 2004 and the Wanganui District Council Engineering Document 2012 or alternative approved by way of the Alternative Design Procedure, prior to the issue of a Certificate pursuant 224 of the Resource Management Act.

c. Connections shall be provided underground, except that stormwater connections may be provided above ground where retention or attenuation measures are required or low impact design approaches are to be used.

d. For sites in the Rural Lifestyle Zone, applications shall:

- i. Provide secure suitable non-reticulated levels of service for potable water supply, AND
- ii. Demonstrate the ability to comply with New Zealand Fire Service Fire Fighting Supplies Code of Practice 2008 SNZ PAS 4509:2008

Note: Connections for the discharge of trade waste are managed through the Wanganui District Council Trade Wastes Bylaw 2008

R271 **Performance Standard - Network utilities**

a. Electricity supply must be provided to each allotment ~~within the urban area~~ in the Residential, Rural Lifestyle, Reserves and Open Spaces, Neighbourhood Commercial, and all Industrial and Commercial Zones.

In the case of power and telecommunications connections, Individual customer connections may be provided above ground where there is an existing overhead supply.

In commercial and industrial zones the supply shall recognise the operational requirements of the probable occupation and use.

b. Provision should be made to ensure that gas and telephone connections can be provided to each urban allotment, unless the network utility operator does not wish to supply that area.

c. Connections to telecommunications infrastructure including land line telephone and broadband fibre shall be required in all zones, except the Rural Zone. In urban areas this should be by means of an underground system wherever possible.

Note: Crown Fibre Holdings and UFB Partners may be required to install infrastructure. Developers should discuss the requirements of the subdivision with a representative of the relevant UFB Partner prior to lodging an application.

d. Design and construction of gas, telephone and electricity facilities shall be to the requirements and approval of the respective network utility operators. Design and construction shall recognise the operating access and service requirements of other adjacent utilities.

e. A compliance certificate shall be provided from the relevant network utility operator, stating that the design and construction of gas, telephone or electricity facilities is satisfactory in standard and level of service and that the network utility operator has undertaken to take over operation and maintenance of the facilities at no cost to Council*.

R272 Performance Standard - Site access

- Rights of way and shared access

a. Each allotment and additional dwelling shall be required to be served by legal access to a formed legal road in accordance with the table below:

Table 1 – Legal accessway width

<u>Access type</u>	<u>Number of potential household units</u>	<u>Minimum legal width – Metres (m)</u>
<u>Single user</u>	<u>1</u>	<u>3.8m</u>
<u>Shared accesses</u>	<u>1-3</u>	<u>3.8m</u>
	<u>4-6</u>	<u>6.5m</u>
	<u>7 and above</u>	<u>Road</u>

b. For additional dwellings, physical width is an area on a plan identified for access equal to the maximum potential household units for the allotment/s that is clear of buildings and structures, that meets the remaining access requirements of this Plan.

c. The legal width for subdivision, and physical width for additional dwellings, shall be clear of buildings, trees, or any other above ground.

d. Where there is more than one access the legal width requirement can be allocated between each access provided that access retains the ability to comply with this Plan.

e. The maximum number of household units, and potential household units, which may share a private access shall be no more than 6.

Note: Potential household units for a site will be calculated by dividing the allotment area by the minimum net site area for the zone less any area subject to physical constraints, easements, and existing or proposed Right of Ways. Where less than a whole number, the next lowest whole number will be used.

f. The construction of shared accessways and Rights of Way shall be required, but only for the actual number of dwelling units it shall serve, except that any vacant allotments in the Residential Zone shall be considered as one dwelling unit.

- Vehicle Crossings

g. Each new allotment shall be serviced by at least one formed vehicle crossing onto a formed legal road.

h. The design and construction of vehicle crossings shall be in accordance with the requirements of NZS 4404 2004 and the Wanganui District Council Engineering Document 2012 where Wanganui District Council is the Road Controlling Authority.

Note: All new or upgraded crossings are required to use the Wanganui District Council Corridor Access Request system, except that this shall not apply where Council is not the Road Controlling Authority.

Note: The design, location and construction of vehicle crossings onto State Highways are managed by the New Zealand Transport Agency.

h. Where subdivision and land use requires access to State Highways the applicant shall include in their application a written statement from the Road Controlling Authority approving that access to the satisfaction of the Subdivision Engineering Officer.

Note: The removal of street trees for the purpose of creating a vehicle crossing is not managed by the District Plan. The Parks and Property Department of the Wanganui District Council should be contacted whenever alteration or removal of a street tree is proposed or required.

- Roads

i. For the design and construction of roads refer to the infrastructure provisions.

R273 Earthworks

In addition to the earthworks land use standards and rules, the following standards also apply for subdivision,

Subdivision in residential zones, earthworks and land modification shall not exceed the removal of topsoil for the purpose of establishing building platforms, construction of roads, and trenching and back filling ancillary to the installation of utilities and services.

Where land is being filled to a level that exceeds 0.5m in depth measured vertically:

- a) The area/s of cut and fill shall be identified on a Plan and As-Built drawings shall be supplied to Council prior to the issue of a Certificate pursuant to Section 223 or the Resource Management Act, and in accordance with the technical requirements of NZS 4404 2010 and the Wanganui District Council Engineering Document 2012.
- b) Where intended to be used as a building platform the fill shall be certified by a suitably qualified engineering professional as being suitable to meet the definition of 'good ground' required for timber framed buildings in NZS 3604 2011.

Note: The requirements of the Land Drainage Act 1908 still apply and should be referred to by anyone moving significant amounts of earth or altering overland flows.

Earthworks

R274 Permitted Activities:

The following are Permitted Activities:

- a. Earthworks in the Residential and Rural Lifestyle Zone, subject to meeting the Performance Standards.
- b. Earthworks required for piling, road maintenance or widening, trenching and back filling ancillary to the installation of network utilities and connections to water services.
- c. Earthworks for the establishment of water and effluent tanks, effluent disposal fields, domestic gardening and landscaping subject to the finished ground levels remaining the same.

Note: Works in close proximity to any electricity line or support structure can be dangerous. The Electrical Code of Practice for Electrical Safe Distances 34 : 2001 may apply and should be referred to. This Code is enforced by the Ministry of Economic Development, and compliance is mandatory.

R275 Restricted Discretionary Activities:

The following are restricted discretionary activities in the Residential Zone

- a. Earthworks in the Residential Zone and Rural Lifestyle Zone that do not comply with a Performance Standard unless otherwise stated.

Council restricts its discretion to the following matters:

1. Discretion will be restricted to the ability of a proposal to meet all the relevant Policies, Performance Standards and Assessment Criteria.

Refer to [Resource Consent Assessment Criteria.](#)

R276 Non-Complying Activities:

The following activities are non-complying activities in the Residential Zone:

- a. Earthworks that do not comply with a Performance Standard or Standards that specifically states failure to meet that standard is a Non-Complying Activity.

Note: Quarrying is excluded from the provisions of this section.

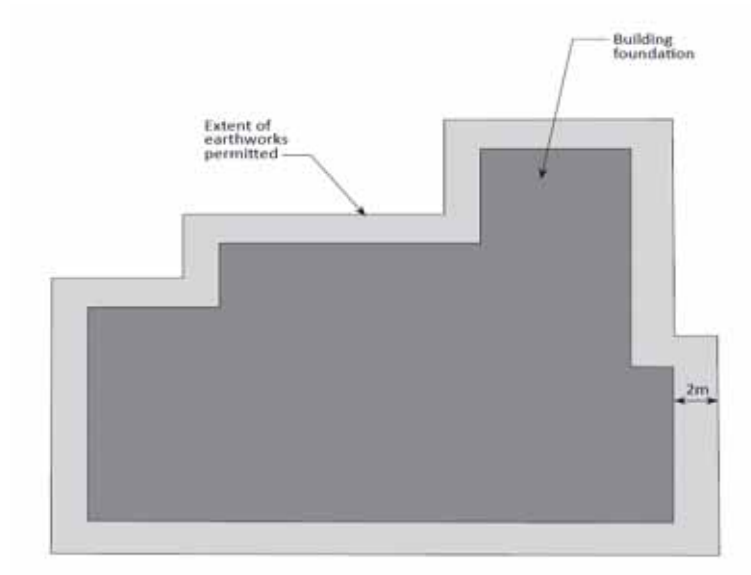
Refer to [Resource Consent Assessment Criteria](#).

Performance Standards

R277 Performance Standards - Residential Zone and Rural Lifestyle Zone only:

a. Earthworks shall not exceed what is required for the establishment of building foundations, boundary fences, and the formation of the initial accessway subject to the excavations not exceeding the extent of foundations by a maximum of 2 meters measured horizontally in accordance with Diagram 1.

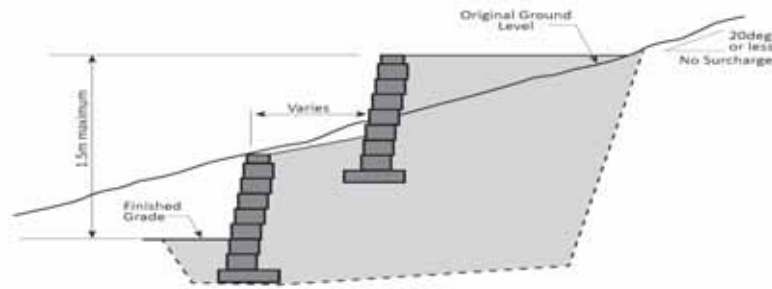
Diagram 1



b. Subject to (a) above, earthworks that do not exceed the lesser of 50% of the area of the site, or 500m². This is measured cumulatively across the subject site or sites of works.

c. The erection of retaining walls shall not either singularly or cumulatively, exceed 1.5 metres in height. Refer to Diagram 2

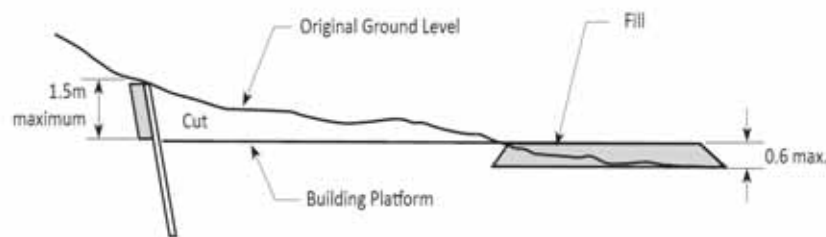
Diagram 2



R278 Performance Standard – General (Due to phased District Plan Review applies only to Residential Zone and Rural Lifestyle Zone only)

a. Cuts shall not exceed 1.5 metres in height and fills below building platforms shall not 0.6 metres in depth measured vertically. Refer to Diagram 3

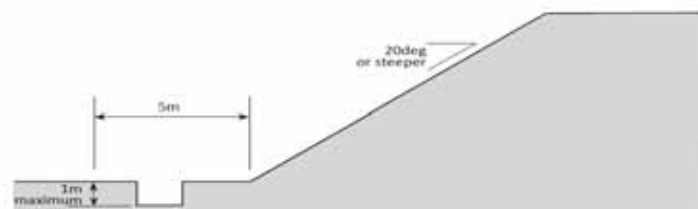
Diagram 3



b. Cuts or fills shall not occur on slopes exceeding 20°.

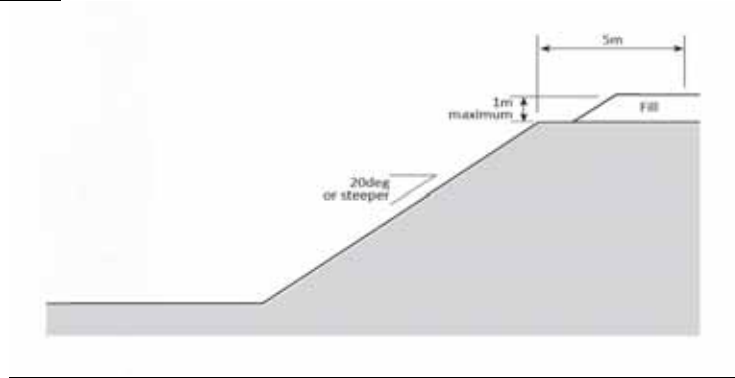
c. Cuts of greater 1.0 metre in height measured vertically shall not occur within 5.0 metres if a toe of a slope exceeding 20°. Refer Diagram 4

Diagram 4



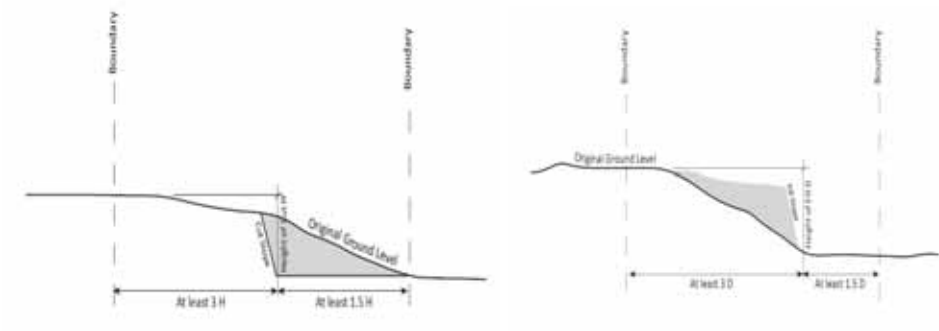
d. Fills greater than 1.0 metre in height measured vertically shall not occur within 5 meters of the top of a slope exceeding 20°. Refer Diagram 5

Diagram 5



e. The toe of a fill or cut slope shall be at least 3 times the depth/height of the slope from an upslope boundary and at least 1.5 times the depth/height of the slope from a downslope boundary. Refer Diagram 5

Diagram 5



f. Works shall not result in visible evidence of settled dust beyond the boundaries of the subject site to which the works relate.

g. Any earthworks shall not alter overland flow paths, including swales and low impact stormwater devices, in a manner that causes damage to property through inundation, erosion, or subsidence.

h. Any earthworks shall not cause excessive vibration on surrounding sites.

i. Any earthworks shall not create, encourage, or exacerbate erosion or instability.

j. There shall not be any discharge any materials such as soils, sediment or vegetation into reticulated infrastructure or onto roads as a result of earthworks. Non compliance with this Standard shall be deemed a Non-Complying Activity.

k. Construction noise from a site in any zone shall not exceed the limits recommended in, and shall be measured and assessed in accordance with, NZS 6803:1999 Acoustics Construction Noise.

Note: The requirements of the Land Drainage Act 1908 still apply and should be referred to by anyone moving significant amounts of earth or altering overland flows.

Infrastructure

R279 Subdivision engineering basis

Subdivision and infrastructure design and construction shall be in accordance with NZS: 4404 2004 and the Wanganui District Council Engineering Document 2012 (the Engineering Document). Where there is conflict between NZS 4404 2004 the Engineering Document prevails. The provisions in the District Plan shall prevail over both NZS 4404 2004 and the Engineering Document.

Note: The subdivision process is required to take an integrated approach to the development of infrastructure and land uses to achieve good urban design outcomes. The General Urban Design Criteria, General and infrastructure specific Assessment Criteria and the relevant Zone provisions should not be seen in isolation but should be read in conjunction with each other.

R280 Servicing capacity

Where there is not sufficient capacity in the servicing catchment to provide the specified levels of service required the subdivider shall, at their own cost, undertake to provide that capacity to provide for their proposed development, or provide a suitable alternative solution.

R281 Consideration of Alternative Solutions

a. Alternative infrastructure solutions to those in NZS:4404 2004 and the Wanganui District Council Engineering Document 2012 shall be required to use the Alternative Design Procedure.

Note: It is recommended that where a subdivision layout is based upon an alternative design that the applicant engages with Council and Asset Managers at the earliest possible opportunity for discussions around concept and design approval.

R282 Easements

a. Infrastructure that is to be vested in Council shall be provided with easements in accordance with NZS 4404 2004 and the Wanganui District Council Engineering Document 2012.

R283 Catchment Management Basis

a. The design, construction and operation of stormwater, water, and wastewater infrastructure shall take a catchment based approach and shall meet the following requirements:

- i. New infrastructure shall be adequate to meet the maximum potential demand arising from the development the allotments, including future land uses as anticipated by the District Plan.
- ii. Proposals shall identify any downstream works required to cater for the anticipated use of the allotments.

R284 Transport

a. Any applications for subdivision shall not include the creation of segregation strips or any other mechanism that:

- i. Prevents access to any existing road or public pedestrian or cycle accessway, or;
- ii. Prevents connections to a proposed road in the Springvale Indicative Future Development Area, or;
- iii. Prevents land zoned for residential development from being developed to its anticipated potential;
- iv. The above does not apply where the road controlling authority requires access to a road or public pedestrian or cycle accessway to be prevented for health and safety purposes, or where access would adversely affect the purpose of a road or public pedestrian or cycle accessway.

- **b. Roding Hierarchy**

i. All new roads shall be designed, constructed, and operate in accordance with its intended function within the Roding Hierarchy as shown in the District Plan Maps.

ii. Where new roads are not shown in the Roding Hierarchy the road design shall be clearly appropriate to its intended function within the overall roding network.

- **c. Roding and stormwater**

No road reserve shall be used as a secondary flow path, for attenuation or detention, or for low impact stormwater treatment unless approved by the Road Controlling Authority.

- **d. Connectivity**

An indicative future roding layout shall be identified on the plan of subdivision that identifies connections to existing or potential future road and cycle and pedestrian accessways that can comply with the provisions of this Plan

e. Frontage to Public open space

Public open space should be prominent and accessible, with a minimum of 40% of the length of the boundary having direct road frontage.

- f. Cycle and pedestrian accessways

Where pedestrian and/ or cycle accessways are required, they shall be formed and comply with the following requirements:

- i. All pedestrian and cycle accessways shall be vested in Council.
- ii. Be a minimum of 6 metres in width for its length.
- iii. Have suitable lighting at each entrance.
- iv. Where exceeding 60 metres in length, accessways shall be lit at intervals not exceeding 30 metres.
- v. Have a direct line of sight from each access point to the point of egress.
- vi. Be secured at any entrance that has direct road access by bollards or other approved devices to prevent motor vehicles entering public spaces.

- g. Cul de sac roads

The following are specific requirements for the use of cul de sac roads in proposed subdivision layouts:

i. Cul de sac roads shall not exceed 150 metres in length measured from the centreline of the roads intersection with the feeder road and the head of the cul de sac road.

ii. A cul de sac shall not gain access off another cul-de-sac or terminating road unless there is no other physical or practical means of developing the related land.

iii. A cul de sac shall, at the terminating head, provide an accessway for cycling and pedestrian access that:

- a. Connects to another existing or proposed road, cycleway, or public open space, public facility or neighbourhood commercial zone, Or;
- b. That reduces travel time to cycleway, or public open space, public facility or neighbourhood commercial zone, And;
- c. Is located in the most efficient location to achieve the above.

- h. Street lighting

i. Street lighting shall be provided on new road reserve to ensure the safety of road users and pedestrians in accordance with NZS

4404 2004 and the Wanganui District Council Engineering Document 2012.

ii. All new street lighting fixtures shall:

- a) be designed installed and maintained to minimise glare upright and spill onto properties,
- b) use energy efficient lamps
- c) be of a standard design and construction.

- i. Entranceway features

All permanent entranceway features and/or structures for the purpose of promoting or branding a subdivision name shall be located entirely within private property and not within road reserve.

- j. Footpaths

Road and/or pedestrian connections between the land being subdivided, existing roads, adjoining properties, and balance lots shall be provided in accordance with NZS 4404 2004 and the Wanganui District Council Engineering Document 2012.

- k. Site frontage

The total number of allotments with no direct access onto road reserve including those with shared access with no frontage and rear allotments using access legs shall not exceed 20% of the lots in any one greenfield subdivision application.

- l. Landscaping

Landscaping shall be in accordance with the requirements of the road controlling authority. In the case of road reserve being vested in the Wanganui District Council this shall be in accordance with the Wanganui District Council Tree Policy 2008.

R285 Stormwater

a. Subdivision to create new stormwater infrastructure shall not require additional mechanical pumping stations.

b. Post development stormwater run off rates shall not exceed those prior to development in catchments required to achieve hydraulic neutrality.

c. New wastewater infrastructure shall not discharge stormwater into the wastewater network.

d. The design capacity of any piped stormwater facilities shall be sufficient to accommodate the surface water flows resulting without relying on secondary flowpaths in accordance with the Table 1 below.

Table 1 Stormwater Design Requirements

<u>Function</u>	<u>Annual Exceedance Probability (AEP %)</u>	<u>Return Period (years)</u>
<u>Primary Systems –</u>		
<u>- Rural</u>	<u>20</u>	<u>5</u>
<u>- Residential and rural residential areas</u>	<u>10</u>	<u>10</u>
<u>- Commercial and industrial areas</u>	<u>1</u>	<u>100</u>
<u>- All areas where no secondary flow paths are available</u>		
<u>Secondary systems</u>	<u>1</u>	<u>100</u>

e. Secondary overland flow paths must cater for a minimum of a 1% AEP storm event. Where this is not feasible, the piped system must perform that requirement.

Note: All discharges will need to meet the requirements of the Regional Council, including any relevant conditions of any applicable consent.

- f. Low impact stormwater treatment
 - i. Stormwater management and treatment shall avoid significant modification to natural drainage system and overland flow paths.
 - ii. Where low impact stormwater approaches including swales, rain gardens, and other mechanisms are proposed or required, these shall:
 - a) Be required to be approved by the Alternative Design Procedure, excluding the construction of the swale in the Springvale Indicative Future Development Area.
 - b) Meet the same performance requirements of conventional infrastructure.
- g. Parks and reserves

Areas to be vested in Council that are set aside for the purpose of accommodating stormwater flows shall not offset or replace any requirement for recreation reserves.

R286 Water

a. Water supply shall meet the requirements of the Ministry of Health: Drinking Water Standards for New Zealand 2005 as updated in 2008.

b. In the Residential Zone fire fighting supply shall be provided in accordance with the New Zealand Fire Service Fire Fighting Supplies Code of Practice 2008 SNZ PAS 4509:2008.

R287 Wastewater

a. Applications for subdivision shall not include the development of new wastewater infrastructure that requires the installation of additional pump.

b. Wastewater systems shall not provide for the direct discharge of stormwater into the reticulated system.

Note: All discharges will need to meet the requirements of the Regional Council, including any relevant conditions of any applicable consent.

R24 General Rule - Transportation

Rules Number: R24

Existing DP Number 25.10

The following rules apply throughout the district:

1. Permitted activities

The following are permitted activities throughout the District:

a. Any activity which complies with the following conditions and terms:

2. Conditions and terms

2.1 Parking

a. Every activity shall provide a minimum number of on-site parking spaces as specified in the following table:

Parking Standards

Activity	Car Parking Spaces Required
Residential activities	
Dwelling units	1 space per dwelling unit.
Residential care facilities	1 space per 5 beds plus 1 space per staff member.
Community activities	
Places of assembly	1 space per 10 seats or 3 per 100 m ² gross floor area where facility not intended for seating.
Pre-school and primary educational facilities	1 space per staff member
Secondary and tertiary educational facilities	1 space per staff member plus one space per 10 students over minimum driving age
Recreation facilities	1 space per 10 seats or 5 spaces per 100 m ² gross floor area where facility is not intended for seating.
Health care facilities	3 spaces per consultant room used by doctor/health specialist.
Hospitals	1 space per 5 beds plus 1 space per 2 staff.
Marae	1 space per 100 m ² gross floor area.
Commercial activities	
All commercial activities other than those specified below	2 spaces per 100 m ² gross floor area.
Supermarkets	5.5 spaces per 100 m ² gross floor area.
Restaurants	1 space per 4 seats plus 2 spaces per 100 m ² gross floor area.
Visitor accommodation	1 space per room/unit.
Service stations	5 spaces per service bay (1 space being the bay itself) plus 1 space per 100 m ² of gross floor area used for servicing vehicles plus 2 space per 100 m ² of gross floor area used for retailing.
Offices	3 per 100 m ² gross floor area.
Manufacturing activities	
Funeral Parlours	1 space per 10 seats.
Manufacturing activities	1 space per 100 m ² gross floor area or 1 space per 4 employees, whichever is greater.
Rural activities	
Retail activities in the Rural Zone	4 spaces per retail site.
Rural industry	1 space per 100 m ² floor area or 1 space per 4 employees, whichever is greater.

- b.** Interpretation of parking standards
- i. Where an activity is not listed, the number of car parking spaces to be provided shall be the standard for the activity which most closely resembles the proposed activity in terms of car parking demand.
 - ii. In determining parking requirements, any fraction more than one-half shall be regarded as one space.
 - iii. Where a parking standard is related to the number of staff or students on a *site**, the number to be used shall be the maximum number on-site at any one time (i.e. at peak times).
- c.** Parking areas shall be designed and located so as to:
- i. promote use of the on-site parking area rather than the road side for parking,
 - ii. minimise conflicts between traffic entering and leaving the *site**.
- d.** Any landscaping or screening of parking areas shall be designed and maintained so as to ensure visibility and safe access and egress between the parking area and the road.

Reason

~~Standards (a) to (d) above aim to ensure that the safe and efficient operation of roads is not impeded by the effects of roadside parking, nor of vehicles entering and leaving on-site carparking areas.~~

2.2 Loading

- a.** Loading bays shall be designed and located so as to provide a safe position for loading and unloading of goods and providing access and egress without affecting any road or *service lane**.
- b.** Loading bays shall be designed and located so as to:
- i. promote use of the loading bay rather than the road side for loading and unloading of goods,
 - ii. minimise conflicts between traffic entering and leaving the *site**.
- c.** The area of the loading bay(s) shall be sufficient in size to cater for the largest expected vehicle, plus manoeuvring space around that vehicle.

Reason

~~Standards (a) to (c) above aim to ensure that the safe and efficient operation of roads is not impeded by the location of stationary service vehicles nor the manoeuvring of such vehicles. It is preferable that vehicle movement, to and from sites be in a forward direction where possible.~~

2.3 Property access

- a. Each new allotment and additional dwelling shall be serviced by at least one formed vehicle crossing onto a formed legal road.
- b. In addition to a. above,
 - i. For new dwellings being served by a shared accessways and Rights of Way, these shall be required to be constructed to the width specified by this Plan

Note: All new or upgraded crossings are required to use the Wanganui District Council Corridor Access Request system, except that this shall not apply where Council is not the Road Controlling Authority.

Note: The removal of street trees for the purpose of creating a vehicle crossing is not managed by the District Plan. The Parks and Property Department of the Wanganui District Council should be contacted whenever alteration or removal of a street tree is proposed or required.

2.4 Design and formation standards:

a. All vehicle crossings shall be located, designed and constructed so that vehicles can enter and leave the *site** without adversely affecting the safe and efficient operation of the road.

~~b. The maximum width of any vehicle crossings shall be 6.0 metres; and 3.5 metres when serving a single dwelling.~~

b. Vehicle crossings in the Residential Zone shall be a minimum of 3.5 metres and a maximum of 6 metres in width at the boundary perpendicular to road reserve.

c. In respect of national routes, primary arterials and secondary arterials (as defined shown on the Planning Maps), vehicle access and egress shall be in a forward direction, with sufficient on-site manoeuvring space as required to achieve this.

d. All vehicle crossings shall be designed and constructed so as not to adversely affect the safe and efficient operation of the road between the carriageway and the property boundary (including any services and drainage systems).

e. All vehicle crossings shall be designed, constructed and maintained to ensure that they are formed and sealed (except for metalled roads in the Rural or Rural Settlement Zones) and to ensure that stormwater and detritus (including gravel and silt) do not migrate onto the carriageway pavement.

f. The design and construction of vehicle crossings shall be in accordance with the requirements of NZS 4404 2004 and the Wanganui District Council Engineering Document 2012, except where a crossing design is specified in this Plan in which case that design will apply.

g. Properties with a street frontage of up to 21 metres are permitted a maximum of 2 vehicle crossings per site*

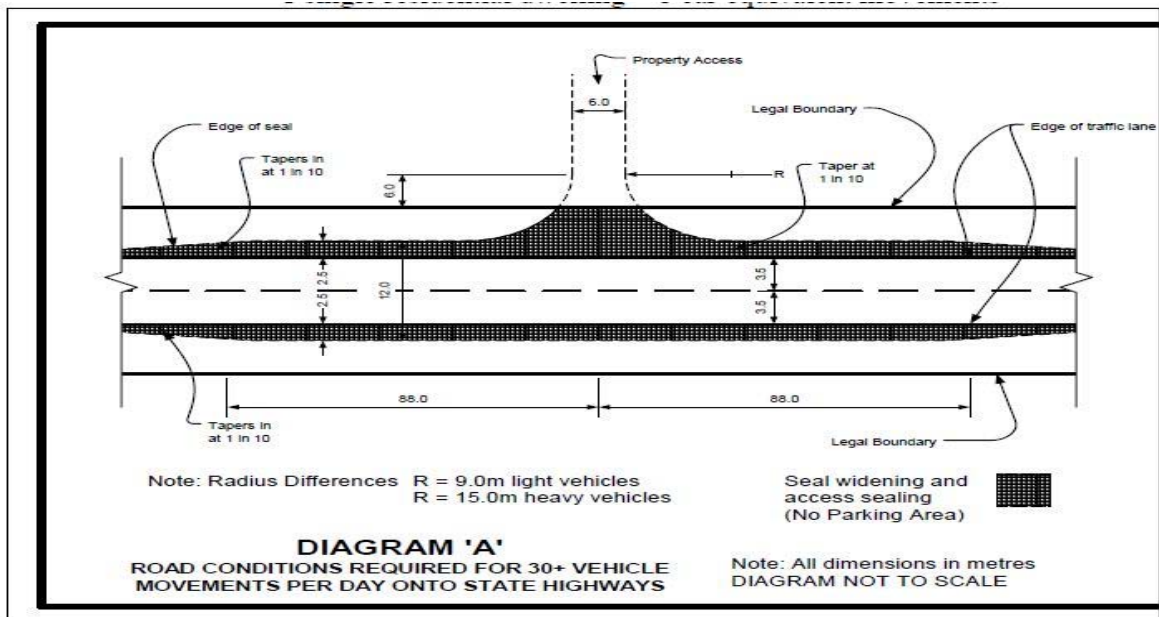
h. Properties with a street frontage over 21 metres are permitted a maximum of 3 vehicle crossings per site*

Reason

~~Standards (a) to (e) above aim to ensure that accesses are designed and constructed in a manner that will not adversely affect the safe and efficient operation of roads in any significant way. A maximum crossing width of 6 metres is imposed to enable any proposals for wider crossings to be considered on their merits. It is generally desirable from a traffic safety point of view to confine vehicle movements to defined points so as to reduce the potential for conflicting and higher speed vehicle movements to and from sites*.~~

f. g. New vehicle crossings, and existing vehicle crossings serving a new activity, shall meet the design standards in Diagram A when all the following circumstances exist:

- i.** The road is a National route, primary arterial or secondary arterial (as defined on the Planning Maps); and
- ii.** the road has a speed limit of 100 km/hr or more at the access location; and
- iii.** the activity concerned is a high traffic generating activity which, for the purpose of this standard, shall be defined as an activity which generates more than 30 car equivalent movements per day (24 hour period) averaged over a normal week, where:
 - 1 car to and from the site = 2 car equivalent movements
 - 1 truck to and from the site = 6 car equivalent movements
 - 1 truck and trailer to and from the site = 10 car equivalent movements
 - 1 single residential dwelling = 8 car equivalent movements



Reason

Standard (f) above, aims to allow most new crossing places to be permitted activities, while requiring specific access design only in relation to high traffic generating activities seeking access to high speed arterial roads. The alternative of not having any controls over access for high traffic generating activities to high speed arterials is not appropriate for traffic safety and efficiency reasons. At the other extreme, the alternative of requiring a resource consent for all new accesses to state highways (regardless of nature and location of activity) is also not considered to be necessary or appropriate.

Note: Transit NZ New Zealand Transport Agency approval is required for access onto State Highways under section 91 of the Transit NZ Act.

2.5 Separation distance between accesses

Roads where speed limit is less than 70 km/hr:

- g.** In relation to any state highway or other national route, primary arterial or secondary arterial (as defined on the Planning Maps), the minimum distance between accesses (either single or combined) on the same side of the road shall be:
 - i.** not less than 7.5 metres for residential land uses,
 - ii.** not less than 15 metres for all other land uses.

h. In relation to any road not covered by (g) above, there is no minimum standard for the minimum distance between accesses.

Roads where speed limit is 70 km/hr or more:

- i.** In relation to any state highway or other national route, primary arterial or secondary arterial (as defined on the Planning Maps), the minimum

distance between successive accesses (regardless of the side of the road on which they are located) shall be not less than:

- 40 metres for 70 km/hr roads,
- 100 metres for 80-90 km/hr roads,
- 200 metres for 100 km/hr roads.

j. In relation to any road not covered by (i) above, there is no minimum standard for the minimum distance between accesses.

Reason

Standards (g) to (j) above, recognise the distinction between, on the one hand, arterial roads where control of access density is important to protect the through-traffic function of roads and, on the other hand, lower order roads which do not require such controls due to their higher functional emphasis on property access. The above standards also vary the access density standards dependent on the speed of the arterial road concerned. This is a performance based approach which recognises that urban arterials do have a significant property access function as well.

2.6 Separation distance between accesses and intersections

Roads where speed limit is less than 70 km/hr:

k. In relation to any state highway or other national route, primary arterial or secondary arterial (as defined on the Planning Maps), the minimum distance between an access and a road intersection shall be 15 metres.

l. In relation to any road not covered by (k) above, the minimum distance between an access and a road intersection shall be 10 metres, except that where the road intersects with a national route, primary arterial or secondary arterial, the minimum distance shall be 15 metres.

2.5 Separation distances

a. Vehicle crossings shall be required to meet the provisions of the following table:

Table 2 – Crossing Standards

<u>Road Type</u>	<u>Minimum separation between crossings – Meters (m)</u>	<u>Minimum separation between crossings and intersections – Meters (m)</u>	<u>Minimum sightline distance - Meters (m)</u>
<u>Less than 70km and a Primary or Secondary Arterial</u>	<u>7.5m for residential uses</u> <u>15 for all other uses</u>	<u>15m</u>	<u>50kph and 60kph zones - 100m</u>

<u>Road</u>			
<u>Less than 70km and not Primary or Secondary Arterial Road</u>	<u>None</u>	<u>10m</u> <u>15m</u> <u>(where the intersection is with a Primary or Secondary Arterial Road)</u>	<u>None</u>
<u>More than 70km and Primary or Secondary Arterial Road</u>	<u>70km – 40 m</u> <u>80km to 90km – 100 m</u> <u>100km – 200m</u>	<u>100m</u>	<u>70kph to 90kph zones – 175m</u> <u>100km zones – 290m</u>
<u>More than 70km and not Primary or Secondary Arterial Road</u>	<u>None</u>	<u>30m</u>	<u>None</u>

m.b. The measurement of separation distances between crossings and intersections shall be taken from the nearest corner junction point of the road reserve boundaries at the intersection (or their projection in respect of “T” intersections) and shall be measured to the nearest edge of the access to the intersection for roads where the posted speed limit is 70km/hr or less.

~~Roads where speed limit is 70 km/hr or more:–~~

~~n. In relation to any state highway or other national route, primary arterial or secondary arterial (as defined on the Planning Maps), the minimum distance between an access and a road intersection shall be 100 metres.~~

~~-~~

~~o. In relation to any road not covered by (n) above, the minimum distance between an access and a road intersection shall be 30 metres.~~

p. c. The measurement of separation distances between crossings and intersections shall be taken from the intersection of the centrelines of the intersecting roads for roads where the posted speed limit exceeds 70km/hr.

Reason

~~Standards (k) to (p) above aim to ensure that vehicle crossings are not located unduly close to road intersections, for traffic safety and efficiency~~

~~reasons. The separation distance required increases with the speed environment and the nature of the road concerned.~~

2.7 Sight distance standards

~~q. In relation to any state highway or other national route, primary arterial or secondary arterial (as defined on the Planning Maps), the minimum sight distance from vehicle crossings and intersections shall be:~~

- ~~•100 km/hr speed limit: 290 metres in both directions,~~
- ~~•70-90 km/hr speed limit: 175 metres in both directions,~~
- ~~•50-60 km/hr speed limit: 100 metres in both directions.~~

~~r. No building*, fence or vegetation on any property shall be erected or permitted to grow in a manner which adversely affects visibility to or from any road intersection.~~

Reason

~~Standards (q) and (r) above, aim to ensure that there is adequate sight distance available to and from vehicle crossings to ensure that movements can be made safely. The required sight distance increases for higher speed roads because vehicles cover distances much faster. Sight distances can be impeded by curves or crests in the road, or by other obstacles.~~

2.8 6 Restriction on new accesses

~~a. No new vehicle access shall be created from the following roads:~~

- ~~•Victoria Avenue between Taupo Quay and Ingestre Street,~~
- ~~•Guyton Street between Wicksteed Street and St Hill Street,~~
- ~~•Ridgway Street between Drews Avenue and St Hill Street,~~
- ~~•Maria Place between Watt Street and St Hill Street.~~

Reason

~~The Council* seeks to maintain retail frontage, and to minimise vehicle/pedestrian conflicts in this busy commercial area. Vehicular access to properties along the above streets can be obtained by alternative means such as rear access or service lanes*.~~

2.9 7 Vehicle crossings - other standards

~~a. Where an existing vehicle crossing to a property becomes redundant for any reason, then that vehicle crossing shall be removed and the berm, footpath, kerb and channel reinstated to a design and standard consistent with any adjacent berm, footpath, kerb and channel.~~

Reason

~~It is desirable to maintain the integrity of the road and pavement functions.~~

2.10 8 Service lanes

~~a. Service lanes* shall be designed and located so as to provide safe access and egress without adversely affecting any road.~~

- b. The width of *service lanes** intended for one-way operation shall be not less than 3.5 metres nor more than 6.0 metres.
- c. The width of *service lanes** intended for two-way operation shall be not less than 6.0 metres nor more than 10.0 metres.

Reason

~~It is important that service lanes* be of sufficient width to serve delivery vehicles of varying sizes. They should be designed and located so as to provide a safe position for access and egress.~~

2.11 9 Vehicle queuing (stacking) and servicing

a. In relation to all:

- i. fuel dispensers,
- ii. ticket vending machines,
- iii. entrance control mechanisms,

there shall be sufficient vehicle queuing or stacking space to ensure that cars waiting at normal peak times do not obstruct the road carriageway or footpath.

b. For remote ordering facilities and devices, including fast food drive through facilities, a minimum of 5 queuing or stacking car spaces is required.

Reason

~~Standards above aim to ensure that the safe and efficient operation of roads and service lanes is not impeded by the effects of roadside parking, nor of vehicles queuing to enter a carparking area or drive-through facility.~~

3. Discretionary activities

The following are discretionary activities throughout the District where the *Council** will restrict the exercise of its discretion:

a. Any permitted activity which does not comply with the relevant conditions and terms. In exercising its discretion the *Council** shall be limited to the conditions and with which the activity fails to comply.

An application need not be notified if written approval has been obtained from every person whom the *Council** is satisfied may be adversely affected by the granting of the resource consent unless the *Council** considers it unreasonable in the circumstances to require the obtaining of every such approval.

* refer to definitions

Status: Operative

SR1 The Subdivision Process

Meaning of subdivision

Part X (Sections 218 to 246) of the Resource Management Act 1991 specifies the statutory requirements and procedures for subdivisions and reclamations. It should be noted that Section 218 defines the term “subdivision of land” to include all forms of division of an allotment, including cross-lease, unit title and company lease, as well as freehold subdivision. Subdivision is not confined to situations when more allotments are being created. The term applies also to boundary adjustments (where the number of allotments stays the same) and amalgamations of allotments into larger units.

Subdivision consent

In accordance with the rules in this section, and Section 11 of the Resource Management Act 1991, all subdivisions require a resource consent (subdivision consent) from the Council. Information Requirements (IR4) – Subdivision Consents sets out the information requirements for applications for subdivision consent.

Approval of survey plan

Where a subdivision consent is granted, the next step is for a survey plan to be prepared and submitted for Council approval pursuant to Section 223 of the Act. This step ensures that the survey plan conforms with a subdivision consent which has not lapsed (2 years unless specified otherwise in the consent).

Deposit of survey plan

The survey plan shall not be deposited under the Land Transfer Act 1952 until Council has certified pursuant to Section 224 of the Act that all conditions of the subdivision consent have been complied with or, where not yet complied with, that completion certificates or consent notices have been issued. The plan must be deposited

~~within three years of being approved pursuant to section 223 of the Act.~~

~~After the deposit of survey plans, the provisions of the Land Transfer Act 1952 apply and this culminates in due course with the issue of the Certificates of Title.~~

~~**Negotiation and vesting of utility infrastructure**~~

~~The subdivider must resolve ownership issues with all utility operators, including vesting of infrastructure and the creation of appropriate easements.~~

~~**SR2 Activity Status**~~

~~The rules for each zone specify, whether subdivision is a:~~

- ~~● controlled activity~~
- ~~● discretionary activity; or~~
- ~~● non-complying activity~~

~~Where subdivision is a controlled activity, the standards in SR3 Subdivision Standards shall apply. Where the standards are not met, the subdivision becomes a discretionary activity.~~

~~**SR3 Subdivision Standards**~~

~~The following standards and terms shall apply to subdivision that is a controlled activity. Applications for subdivisions that are a discretionary or non-complying activity shall be assessed against the criteria contained in Assessment Criteria, (particularly C1 – General Criteria and C6 – Subdivision. The extent (or degree) to which such applications comply (or do not comply) with the following standards for controlled activities shall also be used as a guide in assessment.~~

~~**Allotment size**~~

- ~~_____ a. The minimum allotment size in the Rural Zone is 1 hectare, except that this shall not apply to allotments required for network utility activities.~~
- ~~_____ b. In all other zones, allotments shall be of sufficient size and shape to contain an activity or development in a manner that complies with the rules and standards for the zone concerned.~~
- ~~_____ c. In all zones where there is no sewerage or stormwater reticulation, allotments shall be of sufficient size to enable the treatment and disposal of sewage and stormwater in an environmentally acceptable manner within lot boundaries. This is where the treatment and disposal of sewage and stormwater does not, or will not, either on its own or cumulatively, lead to adverse environmental or health effects either within or beyond the boundaries of the site (including ground or surface water contamination, odours and surface run-off from land). Regard shall be had to the proposed use of the land, and the size, shape and soil characteristics of the land.~~

~~_____ Existing buildings~~

- ~~_____ d. Where any land to be subdivided contains existing buildings, there shall be no increase in the degree of non-compliance with any permitted activity standard for the zone concerned.~~

~~_____ Hazard potential~~

- ~~_____ e. Each allotment shall be able to be provided with a building platform, and access to that platform, for a dwelling or other intended building. The building platform and access to that platform shall not be subject, or likely to be subject, to material damage by erosion, falling debris, subsidence, slippage or inundation from any source.~~
- ~~_____ f. Each allotment shall be able to be provided with a building platform that is not within 20 metres of the centreline of any electrical transmission lines which are designed to operate at or above 110kV.~~

-
- ~~g. Where subdivision of unstable land is proposed the title of that land shall be covenanted to ensure that the allotment is not intended to be used for any building.~~

Access

- ~~h. Each allotment shall be provided with practical, legal access to a formed legal road (or to a proposed road that is to be formed as part of the subdivision) in a manner that complies with the access rules in General Rule — Transportation (Rule R24).~~
- ~~i. Any new access created to a sealed road shall be sealed from the edge of road seal to the property boundary.~~

~~**Note:** A Limited Access Road (LAR) is deemed by Section 93 of the Transit New Zealand Act 1989 not to be a road for the purposes of obtaining access in relation to a subdivision. Accordingly, unless the Minister of Transport gives special authorisation, land adjoining a Limited Access Road cannot be subdivided unless legal frontage to an alternative road is provided.~~

Subdivision adjacent to waterways

- ~~j. Subdivision or road stopping adjacent to the Whanganui River, Mangawhero River or the Coast is deemed to be a restricted discretionary activity, not a controlled activity. Refer to SR6 — Esplanade Reserve and Strips.~~

General rules

- ~~k. Subdivisions shall comply with the General Rules of this Plan to the extent that they are applicable. In particular, rules in the following plan sections apply:~~

- ~~Rule R17 — Natural and Cultural Heritage Resources~~
- ~~Rule R18 — Protected Trees~~
- ~~Rule R19 — Riparian Margins~~
- ~~Rule R24 — Transportation~~

~~SR4 Matters Over Which Council Has Reserved Control~~

~~In granting consent to subdivisions that are a controlled activity, the Council has reserved control over:~~

- ~~a. Subdivision layout
 - ~~● allotment sizes~~
 - ~~● site dimensions~~
 - ~~● boundary positions~~
 - ~~● easements~~~~

- ~~b. Provision of infrastructure and services
 - ~~● roading~~
 - ~~● water supply~~
 - ~~● wastewater disposal~~
 - ~~● stormwater control~~
 - ~~● earthworks (cut and fill)~~
 - ~~● energy supply (electricity and/or gas)~~
 - ~~● telecommunications~~
 - ~~● streetscape and landscaping~~~~

- ~~c. Provision of reserves
 - ~~● local purpose~~
 - ~~● recreation~~
 - ~~● esplanade reserves/esplanade strips/access strips~~
 - ~~● other reserves~~~~

- ~~d. Suitability of sites
 - ~~● access~~
 - ~~● building platforms~~
 - ~~● flood control and hazard mitigation~~~~

- ~~e. Preservation of places or items of natural or cultural heritage value or amenity value.~~

- ~~f. The imposition of financial contributions~~

- ~~g. Any matters relating to compliance with subdivision standards and terms.~~
- ~~h. Riparian management measures
 - ~~● protection of existing vegetation~~
 - ~~● fencing and planting~~
 - ~~● ongoing management of riparian margins~~~~

~~SR5 Performance Criteria for Infrastructure and Services~~

~~In exercising control over the “provision of infrastructure and services” (refer to SR4 (b) the Council will seek to ensure that subdivisions meet the performance criteria outlined in Appendix A7 entitled “*Subdivision Performance Criteria*”.~~

~~The Council will prepare a document, entitled the “*Wanganui Subdivision Code of Practice*” which will be completely separate from, and will not form part of, the District Plan. This document will:~~

- ~~● contain a copy of the District Plan’s “Subdivision Performance Criteria” (Appendix A7; and~~
- ~~● provide a detailed “means of compliance” which meets the District Plan’s “Subdivision Performance Criteria”; and~~
- ~~● list the New Zealand Standards and other standards from which the “means of compliance” has been derived;~~
- ~~● outline documentation required at design, “as built” and completion stages.~~

~~The “acceptable solution” provided will be just one of a range of possible methods of compliance. Applications which meet the District Plan’s “*Subdivision Performance Criteria*” by other means, which have been fully researched and documented, will be approved.~~

Assessment Criteria

C7 Vehicle Access, Parking and Signage

In addition to those matters listed in the general assessment criteria section, any non-compliance with the vehicle access and parking and signage provisions shall be assessed according to the following criteria:

- a. The ability to provide for safe and efficient movement of vehicles.
- b. The existing traffic environment and its ability to accommodate new traffic.
- c. The provision for a safe and convenient pedestrian environment if there is likely to be foot traffic associated with, or affected by the activity.
- d. The effect on the amenity of the area and site in terms of the visual appearance and use of the berm.
- e. Whether it is practical to provide alternative parking or access. In respect of national routes and primary arterials, alternative access from other roads is preferable, where this is practicable.
- f. Availability of on-street parking.
- g. The actual and potential effects on the safety and efficiency of the road network.
- ~~h. Where applicable, the degree to which the proposal is consistent with Transit New Zealand's "Planning Policy Manual" or its successors.~~

C9 Earthworks

In relation to assessment of resource consent for earthworks or land modification AND subdivision consents, the following matters shall be considered.

- a. The maintenance of existing landforms, topography, and natural processes such as overland flows.
- b. The retention of topsoil on proposed allotments, including the amount that remains in-situ where practical.
- c. The avoidance or mitigation of cultural effects on Tangata Whenua where necessary, in particular, where there are large areas of excavations proposed, including the provision of:
 - i. cultural and/or archaeological assessments,
 - ii. enabling site access,
 - iii. appropriate site work observation and
 - iv. any other measures required to avoid effects on cultural and historic heritage by earthworks, where deemed necessary
- d. The avoidance of excessive noise.
- e. The avoidance of soil runoff as a result of earthworks including there placement of appropriate vegetative ground cover as soon as practical after works on part or the whole site are completed.
- f. The avoidance of discharging sediment from earthworks onto roads or into stormwater or wastewater infrastructure by the development and approval of a Sedimentation Management Plan that sets aside the methods used for managing the off-site disposal of soils prior to works taking place.
- g. Free of instability, erosion, rockfall or any other geotechnical hazards to provide a long term safe and suitable allotment appropriate for the intended future use after earthworks. This may include a requirement for:
 - i. A report, a where deemed necessary, in sufficient detail and with appropriate expertise that reflects the complexity of any risk associated with pre and post works and the suitability of ground conditions.
- h. The avoidance or mitigation of airborne dust by dust management measures, including specific works to are required to avoid or mitigate dust settling off site.
- i. The mitigation or avoidance of excessive noise and vibration.
- j. The avoidance of any actual or potential effect resulting from discharge of soil or other materials arising from earthworks onto any road or reticulated infrastructure.

k. Any effects on the integrity of existing infrastructure.

Specific Criteria

In addition to the matters above, discretion is also restricted over the following matters:

- Specific Standards

Where land is being filled a vertical height of more than 0.5 metres and intended for future development, or intended to be used as a future building platform:

- i. The area/s of cut and fill shall be identified on a Plan and As-Built drawings shall be supplied to Council as soon as practicable after works have been completed in accordance with the technical requirements of NZS 4404 2010 and the Wanganui District Council Document 2012.
- ii. Where intended to be used as a building platform the fill shall be certified by a suitably qualified engineering professional as being suitable to meet the definition of 'good ground' required for timber framed buildings in NZS 3604 2011 as soon as practicable after the completion of the works.

C 10 Fences and visual obstruction

Fences adjoining parks and open space and accessways

All subdivision development that adjoins parks and open space and pedestrian and/or cycle accessways shall achieve the provision of passive surveillance opportunities, the avoidance of places of entrapment, and the perception of safety to encourage use of public spaces.

SPC 8 Subdivision Performance Criteria

Subdivision and Infrastructure Assessment Criteria

Subdivision classified as restricted discretionary, discretionary or Non-Complying Activities will be assessed having regard to the following assessment criteria.

1. General infrastructure development criteria.

All Infrastructure design, construction, operation and maintenance shall be:

- a. Effective and efficient in meeting its functional purpose.
- b. Able to be maintained in an effective, efficient, and cost effective manner.
- c. Affordable to the community over the lifetime of the asset.
- d. Durable over the specified lifespan for infrastructure.
- e. Integrated with other infrastructure and land uses.
- f. Responsive to local conditions including hazards.
- g. Compatible with, and not compromise, the effectiveness of network utilities and other reticulated infrastructure, including parks and reserves.
- h. Generally and substantially consistent with any relevant Servicing and/or Structure Plans.
- i. Compatible with existing networks and infrastructure.
- j. Designed taking into account the effects of climate change.
- k. Is resilient to natural hazards.
- l. Providing for infrastructure connectivity where development adjoins land identified for further development.

2. General Subdivision criteria.

- a. Engineering basis

All subdivision and infrastructure proposals shall be assessed against the ability to achieve compliance with requirements of NZS 4404 2004 as amended by the Wanganui District Council

Engineering Document 2012, or alternative as approved by the Alternative Design Procedure.

- b. Easements – Private

All subdivision where infrastructure and network utility connections across private land shall be assessed against the proposals ability to achieve appropriate provision and legal protection of private connections to infrastructure and network utility services over private land.

3. Site Suitability

The following assessment criteria shall apply to all subdivision and infrastructure development and shall be assessed against the proposals ability to achieve the following:

- a. The provision of safe allotments free from inundation, slippage, erosion and subsidence suitable for their intended use;
- b. The provision of regular shaped allotments that do not constrain ease of development, with suitably sized building platforms appropriate for the use provided for within the zone.
- c. The requirement for a report from a suitably qualified and experienced person, if required, detailing the suitability of all allotments and any specific works that are required, that reflects the scope, nature, and complexity of the geotechnical issues and constraints facing the development site, and the intended future use;
- d. The requirement for any consent notices where required detailing and securing any specific and/or on-going requirements arising from any report on site suitability;
- e. The avoidance of the requirement for excessive engineering works, excluding specific foundation design and construction, after the issue of a Certificate pursuant to Section 224 of the Resource Management Act
- f. The maintenance of existing topography, significant natural features and existing hydrological flows as far as practicable.
- g. The identification of any part of a proposed allotment that has undergone significant construction or reconstruction including cut, fill, or that is subject to overland flows or natural hazards.
- h. The provision of suitable ground conditions for on-site waste water and stormwater disposal where on-site servicing is required by the District Plan.

- i. The identification of any specific and detailed requirements for low impact stormwater solutions including appropriate soil conditions, maintenance provisions and costs, and life cycle.
- j. Avoidance of potential encroachment into the requirements of the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZCEP: 34 2001) by future building development.

4. Site serviceability

All subdivision and infrastructure development that requires, and/or, proposes to connect to reticulated water, wastewater and stormwater service shall be assessed against the proposals ability to achieve the following:

- Service connections
 - a. Each allotment is provided with suitable connections to reticulated services that provide appropriate levels of service for water, wastewater, and stormwater.
- Infrastructure capacity
 - b. Subdivisions that are required and proposes to connect to any and all relevant infrastructure catchments or systems proceeds only where:
 - i. there is available servicing capacity or supply for the anticipated total level of development by the proposed and anticipated future development within that catchment as provided for in the relevant zones.
 - ii. Subdivision does not use capacity intended for other areas (including upstream and down stream capacity or supply).
 - c. Where there is not sufficient available servicing capacity or supply for the anticipated total level of development the proposals ability to provide for:
 - a. A suitable alternative method for servicing and associated connections that has been approved by way of the Alternative Design Procedure; AND/OR,
 - b. The creation of supply or capacity in accordance with the requirements of this Plan, NZS 4404 2004 and the Wanganui District Council Document 2012 to service the proposal at the subdividers cost; AND/OR,
 - c. On-site attenuation, retention or mitigation of peak and/or total flows to create pre and post development

- hydrological equilibrium where practicable in the case of stormwater, OR,
- d. Deferral of the completion of a proposal until such time as Council provides capacity where upgrades to any network is programmed.

- d. Compliance with the New Zealand Fire Service Fire Fighting Supplies Code of Practice 2008 PAS 4509:2008 for allotments with reticulated water, and the ability to comply for sites without reticulated water supply.

5. Network utilities

All subdivision development that is required to, and/or, proposes to connect to network utility services shall be assessed against the proposals ability to achieve the following:

- a. Connections to network utility services are provided to a suitable level of service.
- b. The avoidance of significant costs to connect to network utilities, including any requirement to provide for additional capacity, after the issue of a Certificate pursuant to Section 224 of the Resource Management Act 1991.

6. Site Access

All subdivision development shall be assessed against the proposals ability to achieve the following:

- Crossings and vehicle access
 - a. Safe, practical and durable vehicle accessways/ right of ways and crossings.
- On-site manoeuvring
 - b. The practical provision of forward egress onto Arterial Roads on the Roding Hierarchy.

7. Easements and Vesting – Public

The following assessment criteria shall apply to all subdivision where infrastructure and network utility infrastructure is being vested in Council and shall be assessed against the proposals ability to achieve the following:

- a. Sufficient land area vested and/or easements to provide efficient access to public infrastructure for operational and maintenance purposes.

- b. The requirement additional for additional vested land area or easement extent to accommodate factors such as topography and the location of other infrastructure to enable reasonable access to infrastructure for maintenance or operational purposes.

8. Catchment management

All subdivision and infrastructure development shall be assessed against its ability to achieve the following;

- a. The design, construction and operation of stormwater, water, and wastewater infrastructure takes a catchment based approach.
- b. Infrastructure provides for the maximum potential demand arising from the development the allotments, including future land uses as anticipated by the District Plan, unless that land is constrained by hazards.
- c. Where land is identified for future development higher in the catchment, infrastructure is:
 - i. located in a manner that enables connections or extensions to that infrastructure in the future.
 - ii. provides for sufficient capacity for upstream extensions where additional land is zoned for development higher up in the catchment.
- d. New and extended reticulation shall is compatible with upstream and downstream infrastructure.
- e. The identification of any downstream works required to cater for the proposed anticipated use of the allotments.
- f. Where capacity is constrained downstream in the catchment, the proposal either:
 - i. Provides capacity by either performing the works required; or,
 - ii. Provides a suitable alternative method approved by the Alternative Design Procedure; or,
 - iii. Provisions are made for Council to provide that capacity where works are proposed in an existing capital works programme

9. Consideration of Alternative Solutions

All subdivision and infrastructure development that does not use the solutions in NZS: 4404 2004 and the Wanganui District Council Engineering Document 2012, except where the Alternative Design Procedure, is used shall be assessed against the proposals ability to achieve the following:

- a. The design alternative proposed is functional with the subdivision layout proposed;
- b. The alternative does not constrain the ability for connectivity to infrastructure serving other land zoned for development, nor the ability of that land to be developed;
- c. The design alternative meets all the relevant general infrastructure and specific infrastructure requirements and criteria.
- d. Alternative solutions reflect industry best practice.
- e. In the case of design, alternative solutions are approved by the relevant network or infrastructure provider in which it will be.
- f. In the case of construction and materials, alternative solutions shall be approved by the relevant network or infrastructure provider in which it will be vested prior to an application for a certificate pursuant to Section 224 of the Resource Management Act being made.
- g. The required levels of service for infrastructure are maintained.
- h. The ongoing lifecycle needs costs of maintenance are comparable to those in NZS 4404 2004 and the Wanganui District Council Engineering Document 2012.

10. Infrastructure deferrals and bonding

- Crossing deferral

- a. Applications to defer the construction of vehicle crossings after the issue of a Certificate pursuant to Section 224 shall be approved entirely at Council's discretion. In addition the following shall also apply;
- i. The applicant shall be required to provide information to establish that either:
 - a. damage to the formation of the crossing will occur prior to the establishment of the land use served by the crossing; OR

- b. there are multiple locations for a complying vehicle crossing available; AND,
 - ii. A cash bond may be taken in lieu of works of an amount appropriate to the satisfaction of the Development Subdivision Officer.
 - iii. This does not apply to crossings serving multiple lots or where there is only one location for a complying crossing, or for a crossing that has been approved in a specific location but does not comply.
- b. Excluding vehicle crossings, where applications to bond or defer the construction of connections or infrastructure until after the issue of a Certificate pursuant to Section 224 these shall be approved entirely at Council's discretion. In addition the following shall also apply:
- i. The applicant shall be required to provide information to establish that either:
 - a. That damage to the infrastructure will occur prior to the establishment of the land use served by the crossing; OR
 - b. In the case of vegetation and landscaping, that the subdivision is otherwise finished but is currently outside appropriate planting/growing season , AND;
 - c. Where the infrastructure is to be vested in another party, the approval of that party must be supplied.
 - d. A cash bond may be taken in lieu of works of an amount appropriate to the satisfaction of the Development Engineering Officer.

11. Allotment sizes below the minimum

- 1. Subdivision to create allotments in the Residential Zone under the specified minimum allotment size, including those located within the Otamatea Development Area shall be required to demonstrate the following:
 - i. Suitable capacity is available for reticulated servicing for the proposed allotments in the servicing catchment or catchments in which the proposal is located, AND;
 - ii. The proposal does not reduce the capacity or level of service available to service the remainder of land within the servicing catchment at a density development intended by this Plan, OR;
 - iii. An approved alternative method of servicing that mitigates the effect of additional development density on reticulated infrastructure.

12. Subdivision in the Springvale Indicative Future Development Area

1. All subdivision in the Springvale Indicative Future Development Area shall be required to demonstrate the following:

- i. Consistency with the indicative roading, stormwater, ponding infrastructure identified on the Springvale Indicative Development Plan.
- ii. The proposed subdivision directly adjoins, and is a logical extension to, existing development of residential scale and allotment size.
- iii. Sufficient existing capacity is available in the infrastructure catchment to provide for the scale of development proposed.
- iv. The proposed allotment sizes are of a residential scale.
- v. The provision of connectivity and linkages to roads and infrastructure shown in the Springvale Indicative Development Plan.

SPC 1 Transport Infrastructure Assessment Criteria

~~Performance goal~~

~~To ensure the efficient and safe passage of vehicles and pedestrians, on roads and into adjoining property in a manner which is supportive of the land use environment, and provides space for the facilities of all network utility operators.~~

~~To meet the Performance Goals, the following criteria shall be considered, and addressed:~~

Design qualities

1. Transport corridors that are designed, constructed and maintained in a manner that:

- a) Is integrated with, and appropriate for, proposed or existing land uses.
- b) Provides safe and liveable places for living, working, and playing.
- c) Promotes connectivity, is highly permeable, and minimises travel distance.
- d) Provides visual amenity through appropriate layouts and landscaping
- e) Provides efficient and safe access to work, living, and recreational spaces
- f) Enables and provides for the functional requirements of network utilities.
- g) Promotes positive community interaction.
- h) Provides for meaningful choice in the mode of movement.
- i) Is consistent with the Wanganui District Roding Hierarchy and the Wanganui Urban Transport Strategy.
- j) Is accessible by all.
- k) Complements existing topographical features.

Design performance

1. Passage

Road Reserve widths shall be adequate to cater for all anticipated requirements inclusive of vehicle movements, cycle traffic, pedestrian traffic, vehicle parking, network utility operators, and landscaping. Road designs shall encourage vehicles speeds which are consistent with that which is desirable having consideration of the proposed level and type of activity and land uses being served and the physical environment in which they are located.

Reason

~~To permit the free passage of traffic, without unreasonable conflict,~~

~~delay or obstruction, and the full servicing of all property along the road. To ensure that vehicle speed is complementary to the surrounding environment.~~

2. Safety

Road designs shall allow for the interaction of all road users and road usages to ensure that safety is maximised. Designs shall incorporate an adequate system of artificial lighting which is appropriate to its location so as to maintain safety through periods of darkness, avoid entrapment spaces, and promoted community safety through casual surveillance where adjoining accessways, public open space, and streets.

Reason

~~To ensure that the safety and convenience of road users, pedestrians, property occupants and property are not at risk as a result of road design.~~

3. Access

The roading network shall provide vehicular access to all residential properties, goods and services access to all commercial properties and an appropriate level of heavy transport access to all industrial properties. Emergency services access shall be maintained to all areas. Discrete accessible footpaths shall be provided, ~~unless it cannot be justified on the following grounds:~~

- ~~a. the density of development* is low~~
- ~~b. the density of the surrounding development* is low~~
- ~~c. the topography precludes the provision of a discrete accessible footpath.~~

Reason

~~To ensure that the full potential and convenience of the properties serviced by the road can be realised.~~

4. Parking

The roading proposal shall provide adequate parking both on and off the carriageway to cater for reasonable levels of residential, commercial and visitor parking, which will be required both as a consequence of land development and of access to other adjacent land areas which are, or might reasonably be expected to be, developed.

Reason

~~To enable property within, or adjacent to the development, to~~

function to its full potential, without unreasonably inhibiting passage, access, or safety on the road.

5. Function

The road* design shall be clearly appropriate to its intended function within the overall roading network in accordance with the Roding Hierarchy in the District Plan and the Wanganui Urban Transport Strategy, while taking into account adjoining land uses and the surrounding environment.

Where required, roads may form part of the stormwater management system. Roads should also promote community interaction, and provide a sense of place.

Reason

~~*To ensure that local residential roads are used for access rather than for through traffic, and that through traffic is encouraged to use the appropriate routes in the road hierarchy.*~~

6. Streetscape

In addition to being functional and safe, the road design shall aesthetically enhance and complement the land development through landscaping and street furniture and encourage community interaction and promote liveability. Streetscape should recognise the role of the road in the Roding Hierarchy in the District Plan, the existing or proposed surrounding uses, and the surrounding environment.

Reason

~~*To ensure that the road enhances the function of the developed land area, rather than intruding into it as an unrelated feature.*~~

7. Drainage

The road* design shall include provision for a low maintenance formalised stormwater drainage system which ensures that all trafficable areas, parking areas or pedestrian walkways are kept free of surface water ~~in accordance with the Stormwater Performance Criteria~~ and maintain a safe operating surface. Road Reserve may be used for attenuation, detention, as a secondary flowpath, by way of swale or other mechanism only where required and approved by the road controlling authority and the stormwater asset manager. Drainage shall be in accordance with the requirements of the stormwater provisions in this Plan.

Reason

~~*To ensure that the road remains functional to the degree appropriate for all weather conditions, for road users and emergency services.*~~

8. Economic life-cycle costs

Road design shall provide a level of service which is appropriate to the District in general and the designated standard of the immediate area in particular, but which minimises the overall life-cycle costs. Life cycle costs shall include capital, finance, maintenance and rehabilitation cost. For the purposes of this criterion the life-cycle shall be taken as no less than 25 years. Maintenance through this period shall be those activities involved in a reasonable level of road* reinstatement, and not include capital works.

Reason

~~To ensure an appropriate level of economic design which does not subsequently create a disproportionate burden on the road users and/or ratepayers.~~

9. Compliance with other policy

Road design shall identify and provide for the outcomes arising from other relevant policy from the future road controlling authority. This shall include the following documents:

- The Wanganui Urban Transport Strategy
- Shared Pathways Strategy
- Wanganui Cycling Strategy
- Cycling Implementation Plan
- Wanganui District Council Tree Policy 2008

10. Urban design

All subdivision and infrastructure where new roads and accessways are required and/or created shall be assessed against the proposals ability to achieve the following:

a. The design and layout of roading, footpath patterns, and layout of allotments retains and integrates the natural cultural, historical, topographic characteristics and other unique features of the area of the site and the design and layout of any adjoining urban areas.

b. Road and/or pedestrian and cycle connections are provided between the land being subdivided, existing roads, adjoining properties and balance lots, unless unreasonably constrained by topography.

c. An indicative future roading layout shall be identified on the plan of subdivision that identifies and promotes connections to existing or potential future road and cycle and pedestrian accessways that can comply with the provisions of this Plan

d. Public open space is accessible prominent and accessible, with a minimum of 40% of the length of the boundary having direct road frontage.

e. Pedestrian and/ or cycle accessways are located in the most direct and efficient location practicable.

f. Discrete accessible footpaths, accessways and cycleways are provided provided, unless one or more of the following apply:

i. the intended density of *development** is low and not affordable for the community, AND/OR;

ii. the intended density of the surrounding *development** is low, AND/OR;

iii. the topography precludes the provision of a discrete accessible footpath, AND;

iv. No pedestrian or cycle link has been identified as being required in the Shared Pathways Strategy 2012, Cycling Strategy, Cycle Implementation Plan, or the Wanganui Urban Transport Strategy.

g. Landscaping provides suitable high quality amenity in accordance with the Wanganui District Council Tree Policy 2008.

h. Specimen trees are an appropriate species and planted in location that does not interfere with or damage underground or above ground infrastructure. Vegetation proposed to be planted in close proximity to electric lines should be selected and located in a manner that will nopt result in vegetation breaching the Electricity (Hazards from Trees) Regulations 2003.

i. Street furniture is provided in a manner that promotes a high amenity urban space, community interactions, safety, and promotes a sense of place that is consistent with the adjoining uses and function of the road in the Roding Hierarchy.

j. Adequate and coordinated space for network utility services, in accordance with the requirements of the opertators.

SPC 2 Water Supply Infrastructure Assessment Criteria

Performance Goal

~~To ensure a secure and reliable supply of water for the purposes of firefighting and potable water for consumption. The goal is to apply equally to existing supply areas and the new areas created by subdivision, all at the lowest total lifecycle cost. In all circumstances the system shall promote public health and wellbeing, and shall be appropriate to the type of development and use.~~

~~**Note:** Water supplies for agricultural use are outside this code.~~

Performance Criteria

~~To meet the Performance Goal the following criteria shall be considered and addressed. None of these criteria shall justify a level of service which is inferior to that provided to existing properties of a comparable use, or is inconsistent with the service levels required for the specific zone.~~

Design qualities

1. The water supply system shall be designed, constructed and maintained in a manner that:

- a. Safeguards people from illness caused by infection from contaminated water
- b. Safeguard against injury or property damage arising from the operation of the system
- c. Safeguard people from loss of amenity arising from a water supply that is offensive in appearance or odour
- d. Provides adequate quantity and quality of supply of potable water for the reasonably foreseeable consumption, health and hygiene needs of people
- e. Conserves water by avoiding leaks and, where practicable, the use of water
- f. Provides adequate water supply for fire fighting in urban areas
- g. Contains sufficient storage for security of supply
- h. The upstream catchment is provided for and the downstream network has the capacity to provide for anticipated development

Design Performance

1. Quality

New components connected to the water supply in the urban water network, shall be capable of providing potable water to the point of

connection for users at a quality grading of not less than Bb, complying with the requirements of public health standards and the City's asset management plan for the public water supply. Network water supplies to dwellings outside the urban water network shall provide water of quality which meets the appropriate drinking water standard.

Reason

~~To promote public health by providing access to a supply of drinking water for all dwelling units and occupied buildings.~~

2. Quantity

The water supply shall have the capacity to service the anticipated demand at adequate flow and pressure. For a reticulated supply the following shall be achieved:

- maximum working pressure - 90 m
- minimum working pressure at peak flows - 30 m
- minimum working pressure under firefighting flows - 15 m
- minimum available flow at point of supply - 15 litres per min.

A reticulated system shall provide both:

- flows equivalent to the Fire Service Code of Practice flow requirements plus two thirds of the peak daily consumption flow, and
- peak daily demand.

Peak daily demand for design shall be 1000 l/head/day.

The population served shall be based on not less than 3 persons per dwelling. Where *dwelling unit** density is not known, population may be based on 60 persons per hectare.

Industrial and commercial demands shall be specifically analysed for known or potential usage.

Reason

~~To meet the reasonable expectations that water be available on demand at a flow and pressure which meets the requirements of domestic, commercial or industrial requirements. To ensure that non-potable substitute supplies are not inappropriately adopted, or measures used to boost supply to the detriment of other users.~~

3. Firefighting

The water supply shall satisfy appropriate fire protection standards and maintain access for firefighting.

Reason

~~To protect life and property from effects of fire by ensuring adequate water supplies are located in the manner necessary to ensure firefighting needs are successfully met.~~

4. Storage

The water supply system shall have adequate storage capacity to allow for consumption as well as firefighting purposes, and to provide reserve supply for the calculated requirements of users.

~~*Reason*~~

~~To ensure supply remains even in the event of interruption of supply during peak demand and / or emergency conditions by providing reserve capacity. Continuity of supply is important to ensure the public health requirement for potable water is always met and that firefighting capacity remains available.~~

5. Economic life cycle costs

Water supply systems shall be designed in a way which, while meeting other criteria, minimises the overall life-cycle costs inclusive of capital, operating, maintenance and rehabilitation costs. For the purposes of this criterion, the life-cycle shall be taken as no less than 25 years.

~~*Reason*~~

~~To ensure an appropriate level of economic design, that does not subsequently create an undue burden on ratepayers.~~

6. Compatibility and durability

The water supply system shall use safe and durable materials which are compatible with Council's* existing water supply systems and Schedule of Approved Materials. The system shall be constructed to prevent leakage and potable water contamination and to withstand anticipated pressures and loads.

~~*Reason*~~

~~To minimise the maintenance and replacement component of total lifecycle costs while providing long term performance. A consistent form of construction of water supply systems allows replacement components to be available and ensures that knowledge, expertise~~

~~and equipment is available to make prompt repairs in the event of failure.~~

7. Maintainable

Water supply systems shall be positioned so as to be easily located, provide reasonable access for maintenance and be constructed in a manner that enables easy isolation and replacement / repair of faults

Reason

~~To ensure access to the system and the system itself is arranged so as to enable preventative and remedial maintenance to be carried out swiftly to ensure continuity of supply without major disruptions to the roadscape.~~

8. Security

The water supply system shall have adequate valves, meters, alarms, looped pipe systems or other emergency provisions to minimise the risk and extent of loss of service, or contamination of supply due to failure, or to maintenance requirements.

Reason

~~To ensure continuity of supply which is important to maintain the availability of safe drinking water and firefighting capacity. Components within the system should be provided which allow supply to be maintained in the event of failure or maintenance of parts of the system.~~

Monitoring

The water supply system shall include adequate facilities for monitoring of system operation as part of management of the supply or for measurement of supply for charging. The monitoring system shall be compatible with the Council's* preferred current system of monitoring.

Reason

~~To ensure that monitoring of system performance allows defects such as leaks or mechanical failure to be detected and corrected. Monitoring also provides information on consumption trends for sound management of the assets and of demand and allows for equitable charging to promote management of demand by water users.~~

SPC 3 Wastewater infrastructure Assessment Criteria

Performance goal

~~To collect, treat and dispose of wastewater and wastewater products in a manner that minimises adverse effects on the *environment** and safeguards the population from injury and illness caused by infection or contamination resulting from exposure to wastewater.~~

~~To achieve the above objective the following performance criteria shall be considered and addressed.~~

Purpose:

To collect, treat, and dispose of wastewater and wastewater products in a manner that minimises adverse effects on the environment and safeguards the population from injury and illness caused by infection or contamination resulting from exposure to wastewater.

Design qualities

1. The wastewater system shall be designed, constructed and maintained in a manner that:

a. Safeguards public health from potential infection and contamination of natural ground water, water supply, and the soils

b. Safeguards people from loss of amenity due to the presence of unpleasant odours or the accumulation of offensive matter resulting from wastewater and foul water disposal

c. Promotes low impact development

d. Minimises adverse effects on the natural environment.

Design Performance

1. Capacity

The wastewater system shall be capable of carrying and treating the peak flows anticipated during the economic lifecycle of the system, with due allowance for ground and surface water inflow and infiltration. Population density shall be based on proposed use but in no circumstance provide for less than a minimum of 45 persons per hectare or 3 persons per household for the urban area.

Reticulated design flows shall be not less than the following:

a. Domestic Flow

- c. Average dry weather flow (ADWF) - 275 litres/head/day
- d. Wet weather flow (WWF) - 1100 litres/head/day

b. Commercial and Light Industrial Flow

- Dry weather flow - 0.22 litres/sec/ha
- Wet weather flow (3 x ADWF) - 0.66 litres/sec/ha

c. Industrial Areas

- Specifically determined for the proposed use of the development

d. Retail and Suburban Commercial Areas

- vii. ADWF = 0.25 l/sec/ha
- viii. WWF = 0.75 l/sec/ha

Reason

~~To avoid contamination of the environment and risks to public health associated with overflow of sewage from overfull sewage systems or failure to adequately treat effluent.~~

2. Discharge

Underground piped reticulation shall convey wastewater to an approved discharge point, in a manner that ensures good public health and minimises adverse effects on the *environment**.

There is separation of trade wastes from domestic wastewater within the reticulated urban area. In this area separate systems for trade wastes and for domestic wastewater will be required unless trade wastes are treated sufficiently to be accepted for discharge to the domestic wastewater stream.

Reason

~~To ensure that all wastewater is released to the environment* only at locations suitable to treat and disperse the discharge so that no adverse effects are caused.~~

3. Self cleansing

All wastewater systems shall be designed so that they are self cleansing with current or expected peak dry weather flows.

Reason

~~To avoid blockages and restrictions to the capacity of wastewater systems caused by the accumulation of solids deposited in pipes or other structures.~~

4. Treatment

No wastewater shall be designed in a manner that allows untreated effluent to discharged to the *environment** unless it has first been treated to avoid the likelihood of contamination of soils, groundwater and waterways except as permitted under the Resource Management Act 1991.

Reason

~~To ensure that there is no contamination of the environment* and risk to public health through the release of contaminants which cannot be assimilated by the environment*.~~

5. Connection to collection network

Subject to complying with the conditions of *Council's** trade waste bylaws, wastewater sources may be connected to the public wastewater network.

Private wastewater systems, including septic tanks and privately owned and operated treatment plants, shall be considered on a case by case basis. They shall generally only be permitted where they achieve the least adverse effects on the *environment** (including consideration of economic life-cycle costs) and it can be demonstrated that sustainable management systems are in place for their long term operation and funding.

Reason

~~To minimise the cost and adverse effects of wastewater in the reticulated urban area, ensure a consistent level of service to users and facilitate control over proper treatment and disposal of wastewater.~~

6. Other demand

The wastewater system design shall demonstrate that the design has considered, and will allow for surplus capacity to meet expected future demand.

Reason

~~To make the most cost-effective provision of services for long term demand.~~

7. Restriction on discharge

Connection of stormwater drains may not be made to the wastewater system except under extraordinary circumstances. Systems shall be designed to eliminate the risk of inflow and infiltration.

The level of a gully trap for any new connection to the wastewater network shall be:

- at least 50 mm below the finished floor level of adjacent buildings
- at least 150 mm above the nearest opening in the wastewater network
- above the surface level of stormwaters with a 2% or greater probability of recurrence in any year (a 50 year storm)

Reason

~~To avoid higher treatment costs and risks of overflow of untreated wastewater as a result of overloading wastewater systems with non-wastewater flows.~~

8. Economic life-cycle costs

Wastewater disposal and treatment systems shall be designed in a way that minimises the overall life-cycle costs inclusive of capital, operating, maintenance and rehabilitation costs. For the purposes of this criterion, the life-cycle shall be taken as no less than.

a. Pipe work, appurtenances, all associated concrete work, tankage and detention structures: 80 years

b. Mechanical and electrical plant, with provision made for easy maintenance and replacement: 25 years

Reason

~~To ensure an appropriate level of economic design, that does not subsequently create an undue burden on ratepayers.~~

9. Compatibility and durability

The wastewater system shall use safe and durable materials which are compatible with their immediate surroundings, be constructed

to eliminate the likelihood of leakage and infiltration and able to withstand anticipated pressures and loads.

Materials used in the wastewater system shall be compatible with Council's* existing wastewater systems and approved Schedule of Materials.

Reason

~~To achieve a system which provides long term performance and minimises the maintenance and replacement component of total lifecycle costs. A consistent form of construction of wastewater systems allows replacement components to be available and ensures that knowledge, expertise and equipment is available to make prompt repairs in the event of failure. This minimises the maintenance component of total lifecycle costs.~~

10. Maintainable

Wastewater systems shall be positioned so as to be easily located, provide reasonable access for maintenance and be constructed in a manner that enables easy isolation and replacement / repair of faults.

Reason

~~To ensure access to the system and the system itself is arranged so as to enable preventative and remedial maintenance to be carried out swiftly to ensure continuity of supply without major disruptions to the roadscape.~~

11. Security

The wastewater system shall have adequate alarms, standby pump capacity, access points or other emergency provisions to minimise the risk and extent of loss of service due to failure, or maintenance requirements.

Reason

~~To ensure continuity of service which is important to maintain the ongoing safe disposal of wastewater. Components within the system should be provided which allow wastewater discharge to be maintained in the event of failure or maintenance of parts of the system.~~

12. On site disposal

On site disposal systems shall not be used in the Residential Zone in other zones onsite disposal shall have no more than minor environmental effects which can be contained within the lot. They shall be designed to minimise maintenance needs. The design shall be based on field testing and any other site investigations needed to demonstrate that the effects on the environment of the system will be minor.

Independent network disposal (community based) systems shall have environmental effects equivalent or better in all respects with that achieved by public reticulation and treatment, and shall be such that the effects of disposal remain entirely within the lot it is intended to serve or within the specified disposal area. They shall be designed to minimise maintenance needs. The design shall be based on field testing and any other site investigations needed to demonstrate that the effects on the environment of the system will be minor. Where a community system is proposed and, not to be vested in Council, there shall be adequate arrangements for the ongoing maintenance an operation of the system.

Reason

~~To ensure that the surface water and groundwater is not detrimentally affected by contaminants from wastewater disposal and to ensure that public health is not put at risk by on-site disposal.~~

SPC 4 Stormwater Infrastructure Assessment Criteria

Performance goal

~~To ensure personal safety, preserve private property and public infrastructure and minimise damage to the *environment** from the adverse effects of stormwater runoff.~~

~~To achieve the above objective the following performance criteria shall be considered and addressed.~~

Design qualities

1. The stormwater disposal system shall be designed, constructed and maintained in a manner that:

a. Safeguards people from injury or illness from damage caused by surface water

b. Mitigates adverse effects caused by surface water on other properties

c. Protects the environment from accelerated erosion or sedimentation, and the effects of contaminants in stormwater discharges

d. Avoids excessive modification of natural drainage systems

e. Takes the effects of climate change into account

f. Conveys surface water to an appropriate outfall primarily using gravity

g. Adequately services each allotment, road area or other land area falling to the point of entry into the drainage system

h. The upstream catchment is provided for and the downstream receiving network has the capacity to receive anticipated development

i. Avoids the discharge of stormwater to any wastewater sewer network

j. Integrates other infrastructure and land uses where practical

k. Utilises low impact design principles where necessary or desirable

Design Performance

1. Level of protection

The stormwater management system shall:

- Prevent, as far as is practicable, the regular flooding of property and the damage which results from such flooding as required by the following table:

Table 1 Stormwater Design Requirements

<u>Function</u>	<u>Annual Exceedance Probability (AEP %)</u>	<u>Return Period (years)</u>
<u>Primary Systems –</u>		
- <u>Rural</u>	<u>20</u>	<u>5</u>
- <u>Residential and rural residential areas</u>	<u>10</u>	<u>10</u>
- <u>Commercial and industrial areas</u>	<u>1</u>	<u>100</u>
- <u>All areas where no secondary flow paths are available</u>		
<u>Secondary systems</u>	<u>1</u>	<u>100</u>

- Minimise, as far as is practicable, the regular and prolonged flooding of roadways unless they are permitted to be used as a secondary flow path by the infrastructure manager.
- Provide a level of service which in no circumstance is less than that provided to the surrounding environment.
- Provide for potential upstream development of the stormwater catchment.
- Connect to reticulation only where there is downstream capacity to do so.

Reason

~~To provide a cost effective system for stormwater management with a level of protection appropriate to the degree of risk, level of potential damage, and maximum acceptable level of inconvenience.~~

2. Protection of structures

The stormwater system shall provide a level of protection to *structures** from inundation based on the use and importance of the structure*, but in no case less than the requirements of the NZ Building Code.

Reason

~~To minimise the risk of damage to property in the event of flooding.~~

3. Control of flowpaths

Surface runoff shall be conveyed in suitable pipes, formed channels or defined water courses to approved discharge points.

Reason

~~To avoid damage to unprotected ground and to avoid flooding nuisance which may result from uncontrolled surface water flows.~~

4. Overland flow routes

New development and redevelopment projects shall be planned, designed and constructed so as to maintain or enhance the effectiveness of existing overland flow routes.

New development shall be planned, designed and constructed so that stormwaters cannot exceed a depth of 150 mm above kerb level before they are released overland to approved secondary flowpaths.

Reason

~~To protect properties where the capacity of the stormwater system is exceeded, and to avoid deep ponding which may be a hazard or disrupt access.~~

5. Safety

Stormwater systems shall prevent an undue risk to personal health and safety. Stormwater systems shall incorporate barriers or other measures to prevent people being carried into pipe systems by water flows, and to minimise the risks to individuals caused by excess ponding or water in open channels.

Open channels and surface drains shall be used only where peak flows do not cause an undue hazard or where because of the large quantities of stormwater involved, are needed for effective collection of surface water.

Reason

~~To avoid death, injury or significant property damage.~~

6. Development potential

The design of stormwater systems shall demonstrate that the design has considered and will ensure surface water is controlled without unduly restricting the reasonable development potential of land within the balance of the catchment.

Reason

~~To ensure the stormwater system is adequate for and does not inhibit future development.~~

7. Other demand

Stormwater systems shall allow for surplus capacity to meet existing or expected future demand.

~~Reason~~

~~To make the most cost-effective provision of services for long term demand.~~

8. Restriction on discharge

Connection of wastewater drains or other contaminated water may not be made to the stormwater system except under extraordinary circumstances.

~~Reason~~

~~To avoid discharge of untreated wastewater contaminants.~~

9. Economic life-cycle costs

Stormwater systems shall be designed in a way which, while meeting other criteria, minimise the overall life-cycle costs inclusive of capital, maintenance and rehabilitation costs. For the purposes of this criteria, the life-cycle shall be taken as no less than;

a. Pipe work, appurtenances, all associated concrete work, tankage and detention structures: 80 years

b. Mechanical and electrical plant, with provision made for easy maintenance and replacement: 25 years

~~Reason~~

~~To ensure an appropriate level of economic design, that does not subsequently create an undue burden on ratepayers.~~

10. Compatibility and durability

Both open and closed stormwater system shall use safe and durable materials and be constructed to minimise the likelihood of leakage and infiltration and to withstand anticipated pressures and loads.

Materials used in the stormwater system shall be compatible with Council's* existing systems and approved Schedule of Materials.

~~Reason~~

~~To achieve a system which provides long term performance and~~

~~minimises the maintenance and replacement component of total lifecycle costs. A consistent form of construction of stormwater systems allows replacement components to be available and ensures that knowledge, expertise and equipment is available to make prompt repairs in the event of failure. This minimises the maintenance component of total lifecycle costs.~~

11. Maintainable

Stormwater systems shall be positioned so as to be easily located, provide reasonable access for maintenance and be constructed in a manner that enables easy isolation and replacement / repair of faults.

Reason

~~To ensure access to the system and the system itself is arranged so as to enable preventative and remedial maintenance to be carried out swiftly to ensure continuity of supply without major disruptions to the roadscape.~~

12. Limitation of peak flows

Stormwater systems shall provide for **source control** systems for stormwater runoff such as on-site soakage and detention or other measures to reduce peak flows as far as is possible.

Reason

~~To minimise increased runoff from new developments requiring upgrading of downstream existing systems at a greater cost to the community.~~

13. No erosion
Stormwater systems shall ensure that the landform of water courses is stabilised such that the risk of erosion, debris or gravel blockage, inlet and outlet scour and land instability are minimised.

Reason

~~To avoid damage to the environment resulting from the concentration of stormwater flows.~~

14. Climate change

The design, construction and operation of stormwater infrastructure shall incorporate design considerations allowing for the effects of climate change, including when assessing down stream capacity and the requirements of potential upstream discharges.

SPC 5 Earthworks Assessment Criteria

~~Performance Goal~~

Note: Where land use consent is required for earthworks in conjunction with subdivision consent, the relevant Assessment Criteria C9 shall also apply.

Design qualities

Earthworks shall be designed, constructed and maintained in a manner that:

- a. Promotes low impact development
- b. Safeguards health and safety of people and property.
- c. Minimises adverse effects on the natural environment and processes.
- d. Provides for cultural heritage.
- e. Avoids nuisance effects.

Performance Criteria

To improve the potential for development, *earthworks** proposals shall demonstrate that they ~~have considered and addressed~~ meet the following criteria:

Design Performance:

1. Utility

~~To increase the nett yield of useful land on *site**, without detracting from its long term aesthetic appearance and without limiting or restricting the reasonable development potential of adjacent areas.~~

Reason

~~To ensure that the *earthworks** achieve a nett improvement to the developed *site** but do not harm adjacent sites.~~

1. Low impact development

Enabling minor works primarily for the installation of infrastructure and the minor leveling of building platforms.

The maintenance of existing landforms, topography, and natural processes such as overland flows while enabling

The retention of topsoil on proposed allotments, including the amount that remains in-situ where practical.

The avoidance of soil runoff as a result of earthworks including there placement of appropriate vegetative ground cover as soon as practical after works on part or the whole site are completed.

The avoidance of discharging sediment from earthworks onto roads or into stormwater or wastewater infrastructure by the development and approval of a Sedimentation Management Plan that sets aside the methods used for managing the off-site disposal of soils prior to works taking place.

2. Stability

To ensure stability of cut batters and fill batters created by *earthworks**, and of the earthfills and cut platforms themselves under static, live and seismic loading.

The avoidance of creating or exacerbating erosion or slope instability arising from earthworks, including the provision measures or works required for monitoring or securing stability and soils on-site.

Reason

~~To allow development of, and investment in, the sites* to proceed with confidence.~~

3. ~~Strength~~ Safety and suitability

To construct earthfills using a quality of material and standard of compaction which can demonstrably support anticipated building forms, as well as a reasonable assessment of possible future usage.

Reason

~~To permit the construction of buildings* and other structures* at reasonable cost, which will not suffer from subsequent ground movement.~~

4. Aesthetically compatible

To ensure that the topography altered by *earthworks** is in keeping with the surrounding *environment**.

Reason

~~To ensure that, after development, earthworked areas merge into the surrounding environment*.~~

5. Serviceability

To construct *earthworks** so that modifications to ground levels do not adversely affect the capability of existing utilities to service the modified area, or surrounding ground. To avoid the diversion of stormwater from its natural catchment, the creation of increase flood risk or other hazards in consequence of *earthworks**.

The avoidance of any actual or potential effect resulting from discharge of soil or other materials arising from earthworks onto any road or reticulated infrastructure.

Reason

~~To avoid the lowering of the existing standard of service on the site* and in adjacent areas, as a result of modifying the earthworks* levels.~~

6. Cultural and heritage items

To ensure that *earthworks** do not impact on historical and *archaeological sites** and that areas of significant botanical importance or animal habitat are preserved.

The avoidance or mitigation of cultural effects on Tangata Whenua where necessary, in particular, where there are large areas of excavations proposed, including the provision of:

- i. cultural and/or archaeological assessments,
- ii. enabling site access,
- iii. appropriate site work observation and
- iv. any other measures required to avoid effects on cultural and historic heritage by earthworks, where deemed necessary

Reason

~~To ensure the preservation of areas of cultural, historical and environmental importance.~~

7. Security

The developer shall provide *Council** with a record of the works carried out by way of a Certification, verifying that the works have been completed to an agreed standard, from an independent qualified and suitably experienced professional engineer.

The ability of any new allotment to be free of instability, erosion, rockfall or any other geotechnical hazards to provide a long term safe and suitable allotment appropriate for the intended future use after earthworks. This may include a requirement for:

- i. A report, a where deemed necessary, in sufficient detail and with appropriate expertise that reflects the

complexity of any risk associated with pre and post works

Reason

~~To enable future owners to be assured of the extent and quality of the works carried out.~~

8. Amenity

The avoidance or mitigation of airborne dust by dust management measures, including specific works to are required to avoid or mitigate dust settling off site.

The mitigation or avoidance of excessive noise and vibration.

SPC 6 Network Utility Assessment Criteria

~~Performance Goal~~

~~To ensure that allowance is made for electricity supply, telephone and gas connection within the urban boundary.~~

~~Design Performance~~

~~To achieve the above goal, the following performance criteria shall be considered and addressed.~~

Design qualities

1. The network utilities shall be designed, constructed and maintained in a manner that:

- a. Provides security of supply of basic utility services.
- b. Promotes electronic and digital connectivity.
- d. Is compatible with their adjoining uses.
- e. Minimises adverse effects on the natural environment and people.

2. Electricity supply

Electricity supply must be provided to each allotment within the urban area. This should be by means of an underground system ~~wherever possible~~. In commercial and industrial areas the supply shall recognise the operational requirements of the probable occupation and use.

Reason

~~To provide an energy supply for lighting, heating and other uses required by residents and occupants.~~

3. Gas and telephone connection

Provision should be made to ensure that gas, where proposed to be installed by the developer, and telephone connections can be provided to each urban allotment and, wherever possible, to each rural allotment. In urban areas this should be by means of an underground system unless served by an existing aboveground structure.

Reason

~~To provide access to an alternative energy supply and to~~

~~telecommunications systems for all possible properties. Supply to each allotment is at the discretion of the utility operator.~~

4. Design and construction

Design and construction of gas, telephone and electricity facilities shall be to the requirements and approval of the respective network utility operators. Design and construction shall recognise the operating access and service requirements of other adjacent utilities.

~~*Reason*~~

~~*To provide facilities compatible with network requirements and to the safety and service standards adopted by the network utility operator without adversely affecting the level of service provided by other network utility operators.*~~

5. Compliance certificate

A compliance certificate shall be provided from the relevant network utility operator, stating that the design and construction of gas, telephone or electricity facilities is satisfactory in standard and level of service and that the network utility operator has undertaken to take over operation and maintenance of the facilities at no cost to Council*.

~~*Reason*~~

~~*To ensure continuing operation and maintenance of gas, telephone and electricity networks by experienced agencies.*~~

SPC 7 Streetscape and Landscaping Assessment Criteria

Performance Goal

~~To impart character and identity to urban areas through appropriate and compatible landscaping.~~

~~To achieve the above objective the following performance criteria shall be considered and addressed.~~

Design qualities

Streetscape and landscaping shall be designed, constructed, planted and maintained in a manner that:

- a. Provides amenity that appropriate for its location.
- b. Provides interest and comfort to public spaces.
- c. Contributes to a sense of community and character
- d. Provides street furniture that is sufficiently durable.
- e. Avoids conflict with network utilities and reticulated infrastructure.

Design Performance

1. Appropriateness

Planting and other landscaping shall be appropriate to and compatible with the local *environment**. Species selection shall be based on consideration of the following:

- ability to survive on the *site**
- sympathetic to the scale of the section and berm sizes
- consistent with neighbouring landscape features

Reasons

~~To integrate the development with its surrounds and any significant natural features and to ensure that planting is suitable for local growing conditions.~~

2. Maintainable and durable

Planting and other landscaping features shall be easily maintained and minimise overall life cycle costs inclusive of establishment, maintenance and renovation.

In a traffic island, the subgrade shall be removed to the required depth.

Reason

~~To ensure an appropriate level of economic design that does not subsequently create an undue burden on ratepayers.~~

3. Other services

Landscaping shall not cause, or potentially cause, interference or damage to roadways and utility services, or increase the costs of maintenance of those services. Vegetation proposed to be planted in close proximity to electric lines should be selected and located in a manner that will not result in vegetation breaching the Electricity (Hazards from Trees) Regulations 2003.

Reason

~~To ensure infrastructure is unimpeded by landscaping.~~

4. Reserve areas

Public land for reserves shall only be created where there is an identified need. Council reserves shall have appropriate legal protection in accordance with the Reserves Act 1977.

Reason

~~To avoid undue burden on ratepayers from maintaining land/assets which does not contribute to the amenity needs of the community.
To ensure an appropriate level of public protection is given to newly created reserves.~~

5.

Amenity

The type, height and placement of planting in public areas should be such that it minimises opportunity for concealment, vehicle operators' vision, reduced sunlight penetration or other adverse effects on the use of adjacent land.

No planting or landscape feature shall obstruct traffic, pedestrian movement or traffic visibility.

Reason

~~To ensure planting promotes public safety and minimises unwanted shading and other adverse effects on adjoining land.~~

6. Maintenance of landscaping

Appropriate maintenance of landscaping works shall be completed

sufficiently to ensure planting and other landscaping is established and able to develop without assistance, for a period of 1 year.

Reason

~~To ensure the costs of establishment are not a burden on ratepayers.~~

7. Lawn areas

Prior to hand over, any lawn areas must be weed free and the surface evenly vegetated and readily mown. Appropriate ornamental species shall be used. (Pasture grass is unacceptable).

Reason

~~To ensure that the costs of establishment and maintenance of lawn are not a burden on ratepayers.~~

8. Street furniture

Provision of street furniture that:

- i Is durable
- ii Provides comfort
- iii Creates a point of interest in public spaces
- iv Encourages community interaction
- v Is safe for its anticipated use.

9. Design features

The development of streetscape and landscaping will avoid creating spaces that contribute to a feeling of a lack of safety. This includes the avoidance of the creation of places of entrapment and providing for passive surveillance of streets and public spaces.

Landscaping shall take into account the provision of natural light to the living and outdoor areas of residential properties in terms of appropriate location and species.

Note: If provision of fruiting trees is proposed this should be discussed with the Council's Parks and Reserves and Infrastructure Departments as to its appropriateness prior to an application for subdivision being made.

SPC 9 General Urban Design Criteria

Note: The level of assessment shall take into account scale, scope and complexity of proposal.

Purpose:

To provide for good quality design in infrastructure and subdivision in order to provide liveable human scale development.

1. Low Impact Development

Subdivision is required to compliment and retain natural features and processes in the first instance. In particular, development shall demonstrate how the application has:

- Retained vegetation which contributes to the overall amenity and character of the site and neighbourhood where possible, or mitigated the loss of pre development vegetation.
- Maintained hydrological balance or has mitigated post development runoff.
- Limited alterations to natural features and landforms to minimal scraping of topsoil to create building platforms and transport infrastructure.
- The extent to which stormwater treatment contributes to an attractive public realm or provides ecological value.

2. Context

Applications for subdivision shall demonstrate an understanding of the setting in which subdivision occurs by promoting:

- The enduring aspects of site and district level focal points, including any significant vegetation, and natural and cultural landmarks and associations.
- The integration of public parks, open space, amenities and community facilities.
- Existing and proposed land uses (living, employment and recreation uses) and required movement networks.
- Natural environmental processes and features such as hydrological flows, solar orientation, climate, topography and ground conditions.
- The mitigation of downstream limitations on servicing infrastructure.
- Subdivision that relates well to its surroundings, cultural features, and makes use of existing features and amenities, such as the retention of trees and water features, view shafts, or good use of the rural interface to enhance the urban area.

3. Character

Subdivision design and construction shall demonstrate how character is maintained and enhanced by:

- Retaining and utilising the existing natural and physical environmental features including trees, waterways, built and historic heritage, significant topographical features of the subject site and surrounding areas.
- Protecting and enhancing built, cultural and visual landscape features, landforms and significant view shafts.
- Respecting and integrating features of significance culturally and natural environmental processes.

4. Connections

The connectivity of a subdivision shall be demonstrated by:

- The existence and use of green connections and corridors.
- The degree of permeability of the roading layout.
- The number of connections between the roading network, recreation spaces, other neighbourhoods and natural features.
- The incorporation of multi modal transport options.
- Implementing the Shared Pathways Strategy and Wanganui Urban Transport Strategy.
- The convenience of a development to community infrastructure such as schools, shops, public open space and neighbourhood commercial zones.

5. Custodianship

Applications for subdivision shall identify how the proposal will have achieved custodianship by:

- Demonstrating consultation and communication with the affected community including Iwi and interest groups.
- Providing spaces that are places of community interaction and ownership including streets, recreational areas and focal points.
- Enabling connections with places of value to the community.

6. Crime Prevention Through Environmental Design

Subdivision design shall illustrate how CPTED Principles have been implemented by promoting the following:

- Good visibility, sightlines and casual surveillance (overlooking) of public or publicly accessible spaces.
- Safe, direct routes and connections.

- Lighting and illumination that is appropriate to particular spaces and their anticipated uses.
- Avoidance of the creation of places of entrapment.

Information Requirements

Subdivision Information requirements

In addition to any information required by the *Act** or any regulations, every application for *subdivision** consent shall be accompanied by the following information (as applicable) in such detail as is necessary to determine the actual or potential effects that the *subdivision** may have on the *environment**:

- a. The address and legal description of the property and a copy of the ~~certificates of title~~ Computer Freehold Register for the land to be *subdivided**.
- b. Abutting and underlying title *boundaries** and existing *building** line restrictions, segregation strips or any other physical restrictions affecting the subject allotment/s.
- c. The balance area of the subdivider's property showing any proposals for future subdivision and development* including connections to infrastructure mains, parks and open spaces and existing and future roads.
- d. The use of colour to highlight lot boundaries and any other distinguishing features.
- e. Contours at an interval sufficient for the design of services.
- f. Topographic and geological details, including areas of loose fill and depth of soil, location and nature of significant site features, and any significant changes or alterations to those features.
- g. Areas of the land that are, or may be, subject to flooding, inundation, landslide liquefaction or subsidence or any other known natural hazard whether identified on the Planning Maps or not, including depth of groundwater where this is closer than 1.5 meters vertically from the surface either permanently or seasonally.
- h. Existing vegetation, including significant areas of bush and individual trees.
- i. Areas of vegetation and/or trees to be retained or protected.
- j. All watercourses, whether permanent or ephemeral, having average normal waterway width greater than 1 metre and any ephemeral water courses including secondary flow paths.
- k. Existing sanitary sewer and stormwater drainage systems with invert

and manhole levels.

l. Existing services.

m. Existing groundwater bores.

n. Existing and proposed septic tanks and irrigation systems.

o. Existing roads, carriageways, and pathways to which connection shall be made.

p. Existing *buildings** and other *structures** with description of uses and materials and whether such *buildings** or *structures** are intended to be retained, relocated, or removed.

q. Numbers, areas and dimensions of proposed lots, including net areas.

r. Proposed roads, access ways, *service lanes**, access lots, and private ways with relevant widths, areas and proposed gradients.

s. Proposed local purpose reserves, esplanade reserves, and esplanade strips.

t. Proposed easements (drainage, rights of way etc.) with memorandum and/or schedule and existing easements.

u. Proposed areas of *excavations** and filling, together with proposed finished contours where *earthwork** proposals should be accompanied by a report and certificate from a ~~registered~~ chartered engineer or other suitably qualified person with experience in soil mechanics or geotechnical matters as to the *effects** of the proposed works and the suitability of the area of finished works for their anticipated uses.

v. In the rural areas, information on land use capability as classified in the New Zealand Land Resource Inventory (NZLRI) of the land concerned with particular reference to the identification of areas of elite soils.

w. In the Rural, Rural Settlements and ~~Restricted Services Residential~~ Rural Lifestyle Zones and Coastal Environment Special Management zones, if the proposed lot is 45000m² or less, a report from a ~~registered~~ chartered engineer or other suitably qualified person to the effect that each proposed allotment has a sufficient capability to adequately treat and dispose of sewage effluent. This report should address the following:

(i) Sufficient area for effluent disposal.

(ii) Existing soil types and their properties for effluent disposal (percolation rates).

- (iii) Identification of relevant topographic and drainage features, including water courses and floodplains.
 - (iv) The potential for contamination of water courses and supplies.
 - (v) An assessment of the movement of effluent residuals into ground water, together with any other likely *environmental** impact.
 - (vi) An assessment of the likely volumes of waste water to be treated.
- x. An outline plan showing the bulk and location of a potential *building** which complies with the relevant rules and standards for the zone concerned may be required where a small allotment size is proposed.
- y. A copy of all consultation and agreements with appropriate *network utility** operators.
- z. For all *subdivision** within the Coastal Residential Zone, information sufficient to address the matters required for a Comprehensive Structure Plan.
- aa. Identifying all National Policy Statements or National Environmental Standards that apply to the application and an assessment of the applicability and requirements of the any of the above as relevant.
- ab. The location and nature of any known land feature, archaeological site, Waahi Tapu, or heritage feature.
- ac. A record of consultation with and all third parties including Maori and potentially affected persons.
- ad. Identification of the provisions of which an application is made under and how the application does or does not meet the requirements of any relevant provisions.
- ae. Identification of the location and suitability of proposed future building platforms.
- af. Identification of any changes or alternatives to the approved servicing standards proposed to service the proposed subdivision, including, where applicable, documentation from the Alternative Design Procedure.
- ag. Any assessment of the ability of a subdivision and anticipated land use to comply with the New Zealand Electrical Code for Electrical Safe Distances (NZCEP:34 2001).

Definitions

Access management – A CPTED design principle that promotes the use of walkways, fences, lighting, signage and landscape to clearly guide people and vehicles to and from entrances to and between public and private space.

AEP – Annual Exceedance Probability – Means the probability of exceedance of a given occurrence, generally a storm, within a period in one year (1% AEP is equivalent to a 1 in 100 years storm event).

Allotment – Has the same meaning as in the Resource Management Act 1991.

Boundary adjustment – The amendment of the location of contiguous boundaries in accordance with the provisions of this Plan on a Computer Freehold Register without creating additional numbers of allotments.

Building Platform – An actual or potential area identified as being suitable for future building activity in accordance with the provisions of this Plan.

Connectivity - The state or degree of being connected or interconnected with regard to transport, social, recreation and infrastructure systems.

CPTED – Crime Prevention Through Environmental Design - The discouragement of antisocial behaviour through design of the built environment using principles based on access management, defining public and private space, and passive surveillance.

Cul de sac – An enclosed local road that connects to another road at only one point, AND includes roads that provide the sole means of gaining access to the roading network for other one connection roads, but have only one connection to a through road.

Earthworks and/ land modification - means modification of land surfaces by blading, contouring, ripping, moving, removing, placing or replacing soil or earth, or by excavation, or by cutting or filling operations, including the importation of fill.

~~means any modification to land associated with development, and includes the digging, cutting, trenching, levelling, filling or re-contouring of land and associated vegetation removal, and includes other activities normally associated with excavation, but excludes domestic gardening, farming or forestry activities.~~

Entranceway features – A physical construction designed to advertise or augment the amenity of a road entranceway into a subdivision development.

Liveable streets – Roads that are designed around the needs of people as opposed to cars, that promotes a sense of place and community interaction, and is safe for all.

Liveability – The quality of life and sense of wellbeing provided by built form, accessibility, positive social interaction, quality public spaces and a clean environment.

Low impact design/ development – An engineering approach to land development and stormwater management that recognises and provides for the value of natural systems in order to mitigate environmental impacts and enhance local amenity and ecological values.

Parks and open spaces – Formal public areas of either active or passive recreation.

Passive surveillance – Design layouts of built forms and other structures and vegetation that enhances visibility of activities occurring in public spaces.

Permeability – A. With regard to Roads: The extent to which connections are provided between roads within the roading network.
B. With regard to fences or boundary structures: The degree to which space is provided that is visually unobstructed from one side to the other.
C. With regard to ground surfaces, the degree to which water is able to infiltrate through it to ground.

Place making – The process and act of giving a positive purpose and meaning to public spaces.

Places of entrapment – Designs where built form creates spaces that prevents safe egress or access which encourages antisocial interaction. accessible for the enjoyment of everyone.

Potable water – The same meaning as defined in the Health (Drinking Water) Amendment Act.

Potential household units – The number of actual or theoretical household units that could reasonably be placed on a given allotment calculated by the following:

Potential household units =

Total allotment area – Physical and legal constraints (Easements, ROW's, hazards)

Minimum lot size

Where the number of potential dwellings exceeds a whole number, this shall be rounded to the lowest whole number.

Private space – Places that are not intended to be accessible to the general public without explicit invitation.

Public space – Places that are open and accessible to all people.

Reticulated infrastructure – Council owned networks of infrastructure services including for the provision of water, wastewater, and stormwater services including pipes, associated pumping stations, treatment works, swales, detention areas, and other ancillary equipment, structure or facilities

Reticulated water services – Water, wastewater and stormwater reticulated infrastructure.

Def126 Road

For For the purpose of this Plan “road” includes:

- (i) road as defined in the Local Government Act 1974 and the Transit New Zealand Act 1981; and
- (ii) all land within the legal road reserve; and
- (iii) all land comprising formed and existing roads under the control of the road controlling authority

~~The Status of Formed and Unformed Roads~~

~~On the District Plan Maps, all formed legal roads, and some unformed legal roads are coloured white. With regard to the application of District Plan objectives, policies and rules, the Plan provisions of the zone in which any formed or unformed legal road is located shall apply. Where a road is stopped, the Plan provisions for the zone on which the stopped road is located shall apply. Where a formed, unformed or stopped road is bounded by different zones, the demarcation between zones is the former centre of the road.~~

~~*Note: Any activities that occur within road corridors must be authorised by the owner of the road. This provides a process for the owner (in most cases Transit New Zealand or Wanganui*~~

~~District Council) to issue what is in effect a 'licence to occupy' prior to any activity establishing. Network utility operators will not be required to obtain such authorisations where they comply with the enabling legislation that provides for network utility activities within road corridors.~~

Road controlling authority - The authority, body, or person having control of the road, and includes a person acting under and within the terms of a delegation or authorisation given by the controlling authority.

Secondary Flow – The estimated surface water runoff in excess of the primary design flow of the stormwater network.

Secondary flow path – The path taken by stormwater runoff in excess of the primary design flow of the stormwater network.

Segregation strips – A piece of land, or restrictive covenant, or easement, other means by which prevent land being accessing legal road.

Servicing capacity – The level of service that infrastructure is designed and constructed to provide for all intended users throughout its entire catchment.

Stormwater – Rainwater that does not naturally percolate into the ground or evaporate.

Swale/s – A constructed watercourse shaped or graded in earth materials and stabilised with suitable vegetation or rocks for the conveyance, attenuation, and the treatment of storm water runoff.

Urban Design - The design of the buildings, places, spaces and networks that make up our towns and cities, and the ways people use them.

Wastewater – Water that has been used and contains unwanted dissolved or suspended substances from communities.

**Wanganui District Council
District Plan Review**

Section 32 Report

**Phase Two – Subdivision,
Earthworks and Infrastructure**

Documents Referred to:

<p>Legislation</p> <p>Resource Management Act 1991 Reserves Act 1977 Land Drainage Act 1908</p> <p>Non-statutory documents</p> <p>New Zealand Urban Design Protocol</p> <p>New Zealand Standards</p> <p>NZS 3604 2011 Timber Framed Buildings NZS 6803 1999 Acoustics Construction Noise NZECP:34 2001 New Zealand Electrical Code of Practice for Electrical Safe Distances SNZ PAS 4509 2008 New Zealand Fire Service Fire Fighting Supplies Code of Practice 2008 NZS 4404 2004 Land Development and Subdivision Engineering NZS 4404 2010 Land Development and Subdivision Infrastructure National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.</p>	<p>Ministry of Health Drinking Water Standards for New Zealand 2005 (updated 2008) Electricity (Hazards from Trees) Regulations 2003</p> <p>Regional Documents</p> <p>Proposed Manawatu Wanganui Regional Council OnePlan</p> <p>Wanganui District Council Documents</p> <p>Wanganui District Council Ten Year Plan 2012 – 2022 Wanganui Urban Transport Strategy Wanganui District Council Tree Policy 208 Shard Pathways Strategy Cycling Strategy Cycling Implementation Plan Wanganui District Council Land Development and Subdivision Engineering Document 2012 Draft Otamatea Structure Plan</p>
---	--

Proposed Issues

Subdivision and Infrastructure

Conflict with Network and Reticulated Infrastructure

Issue I21 Infrastructure facilities have specific locational and operational requirements. Incompatible subdivision and land use activities can reduce the efficiency or impose constraints on the operation, maintenance, upgrading and development of these facilities. These effects can, in turn, adversely affect community health and safety.

Effects of infrastructure development

Issue I22 Infrastructure facilities* and network utility facilities are usually structures located on or over land.

They may create a visual and physical impact on the surrounding area. Even where facilities are located underground, eg reticulation for water supply or drainage or telecommunication lines, their development* still requires excavations and modification to the landform.

Examples of environmental concern associated with infrastructure development* include:

- a. Earthworks and construction in areas of land instability.
- b. Damage to or loss of natural habitats, indigenous vegetation* and significant landscape features.
- c. Visual impact of overhead lines and structures.
- d. Physical impact on private properties and communities.
- e. Disturbance of and damage to waahi tapu* or other sites of cultural significance to Iwi.
- f. Stormwater and run-off from site development* may create adverse effects* on water quality in waterbodies.
- g. The health and safety of the community in which they serve and locate.

In addition, activities associated with the infrastructure facility can generate noise, dust, smell or high volumes of traffic to a level

which adversely affect the amenity of adjacent areas.

h. The impact on the landscape or the coastal environment from stormwater disposal in the Coastal Residential Zone.

Infrastructure Capacity

Issue I47 There is a lack of detailed information about the nature and performance of reticulated infrastructure within the urban areas of Wanganui. Some areas are believed to be serviced by reticulated infrastructure that is at, or nearing, capacity. Therefore, this infrastructure may not be able to absorb further conventional development or retain a suitable level of service, creating uncertainty.

Sustainable site design

Issue I48 New and redeveloped sites with insufficient drainage, or designed with poor solar access, inappropriate site orientation, and a lack of consideration of the benefits of energy efficiency are less sustainable.

Low impact urban design

Issue I49 While conventional solutions for the supply of services are effective in some circumstances, a lack of consideration of alternative approaches often limits the potential to achieve sustainable low impact design. These approaches can work with the existing natural processes and landforms, maximising environmental benefits, increase liveability and has the potential to reduce the cost of developing infrastructure.

Compatibility with network utilities

Issue I55 Network utilities contribute to the health, safety and wellbeing of the community. However, this can be compromised by development that is not compatible with their operational requirements.

Earthworks and Land Modification

Earthworks/Land modification

Issue I50 Poorly managed earthworks and land modification can create a range of adverse effects on amenity values and the physical environment. These include dust, noise, damage to infrastructure and private property, the alteration natural and modified water flow paths and can also adversely impact on cultural values.

Development works

Issue I51 The development process through impacts on land modification, building location, scale, height or even presence alone, may adversely affect Maori values for that place.

Maori values

Issue I52 Maori values and information are not always well understood or respected in resource management processes.

Comment

- Subdivision and Infrastructure

Subdivision and development that modifies the land to fit development rather than working with the land and development that adopts hard engineered infrastructure solutions can be appropriate in some circumstances. However they can also potentially limit positive environmental outcomes, and result in unintended adverse affects e.g. creation of large impermeable hard standings. Low impact urban design solutions include a range of servicing options that minimise modification to landforms and natural processes. They work with the natural landforms rather than against them.

Best practice approaches to the performance and role of infrastructure have changed. Roads and storm water management areas are now more than just functional amenities. Infrastructure can play a role in improving biodiversity, place-making, community engagement, connectivity, personal safety and

other functions. There is also a greater acceptance that infrastructure outcomes can be delivered in many different ways rather than simply the pipe and concrete approach.

Conventional site development seeks to maximise site yield and cost effective installation of infrastructure, particularly roads. In some instances this has led to poor outcomes with regard to broader issues like connectivity and energy efficiency, but has also neglected sustainable design at the site level. Site orientation and on-site storm water detention are amongst the more apparent aspects of energy efficiency at a site level. This is also complementary to the development of low impact infrastructure and the limitation of onsite works and land modification.

Subdivision and development that modifies the land to fit development rather than working with the land and development that adopts hard engineered infrastructure solutions can be appropriate in some circumstances. However, Issue 149 highlights that they can also potentially limit positive environmental outcomes, and result in unintended adverse affects e.g. creation of large impermeable hard standings.

Subdivision and development that modifies the land to fit development rather than working with the land and development that adopts hard engineered infrastructure solutions can be appropriate in some circumstances. However they can also potentially limit positive environmental outcomes, and result in unintended adverse affects e.g. creation of large impermeable hard standings. Low impact urban design solutions include a range of servicing options that minimise modification to landforms and natural processes. They work with the natural landforms rather than against them.

Best practice approaches to the performance and role of infrastructure have changed. Roads and storm water management areas are now more than just functional amenities. Infrastructure can play a role in improving biodiversity, place-making, community engagement, connectivity, personal safety and other functions. There is also a greater acceptance that infrastructure outcomes can be delivered in many different ways rather than simply the pipe and concrete approach.

A critical shortage of quantifiable and reliable information about the performance of infrastructure, particularly around capacity, creates significant

uncertainty. Density of development is predicated on a suitable level of servicing being available across the particular catchment being relied upon. Where demand for services outstrips supply or provision of a service, Council may be required to carry out capital works to provide for existing demand. The costs of which then falls on the general ratepayer.

- Earthworks and land modification

For earthworks and land modification, these works often occur as part of the subdivision process, or to provide for a specific development. Often the approach has been to make the environment fit within a model for development, as opposed to modelling the development around the environment. This can create a range of nuisance and environmental effects. In most instances, earthworks proceed without issues. However, works of significant scale, carried out inappropriately, or in inappropriate/ high risk environments have the potential to cause significant adverse environmental effects. Included in this is the potential to uncover sites of significance to Maori.

Proposed Issue	Relates to Existing Issue/s
Issue 21	Issue I21
Issue 22	Issue I22
Issue 47	Issues I19 and I20
Issue 48	N/a
Issue 49	N/a
Issue 50	N/a
Issue 51	Issues I5 and I6
Issue 52	Issues I5 and I6
Issue 55	Issues I21 and I22

Proposed Objectives

AMENDED OBJECTIVE O17

Objective 17 O17 Infrastructure development which is coordinated, effective and efficient in the use of natural and physical resources to meet present and foreseeable future needs of the district.	
Comment	Objective 17 has only been slightly modified in that description has been removed. The Objective is still relevant in that it seeks to encourage the strategic management of infrastructure now and into the future, while balancing the needs of the natural and physical environment.
Appropriateness	As the Objective has not materially changed, no issues were raised during consultation, and that no significant adverse effects will arise, the retaining of Objective 17 is deemed appropriate.

Proposed objective	Relates to Existing Objective/s
Objective 17	Objective O1, O17

PROPOSED OBJECTIVE O40

<u>Objective O40 Sustainable subdivision and infrastructure development in the Residential areas of Wanganui that:</u>	
<ul style="list-style-type: none"> <u>a. Appropriately integrates infrastructure with land uses;</u> <u>b. Provides a safe, healthy and livable residential environment;</u> <u>c. Connects infrastructure and communities together;</u> <u>d. Is resource and energy efficient;</u> <u>e. Has low environmental impact and integrates the natural environment;</u> 	
Comment	The Objective – O40, is completely new. It provides a clear direction for decision-making and reinforces that

	<p>infrastructure is an important community asset. In particular, the Objective has focussed on the human aspects of infrastructure and engineering performance. This is a shift in thinking from development and infrastructure being separate, and recognises the interdependent and connected nature of the community and infrastructure.</p> <p>Letters (a) through (e) are a list of outcomes that are desired from both subdivision and infrastructure development. They represent a list of items that will ensure subdivision and infrastructure development provide for more sustainable outcomes for the environment and the community.</p> <p>In addition, in accordance with the desired outcomes of the Wanganui District Council's Family Friendly Strategy 2012-2022, increased quality of life, or liveability is key, as is connecting infrastructure with the community.</p>
Appropriateness	<p>The Objective is appropriate as it is consistent with emerging practice for urban design and infrastructure, particularly with regard to low impact and flexible development. The voluntary New Zealand Standard for Subdivision and Infrastructure Development (NZS 4404: 2010), has a similar focus. While Wanganui District Council has not adopted NZS 4404: 2010, several strategies, such as the Wanganui Urban Transport Strategy 2011, have explicitly adopted these.</p>

Proposed objective	Relates to Existing Objective/s
Objective 40	Objective O17, O41, O42

PROPOSED OBJECTIVE O41

Objective O41 Subdivision and infrastructure development that demonstrates the following qualities of good urban design defined in the New Zealand Urban Design Protocol:

- a) Context
- b) Character
- c) Choice
- d) Connections
- e) Creativity
- f) Collaboration
- g) Crime Prevention Through Environmental Design (CPTED)

Comment

The design of our towns and cities affects almost every aspect of our lives - we all live and work in buildings, and use streets, public spaces, transport systems and other infrastructure. We need to ensure that what we design meets people's needs and aspirations, and that people want to live there. The New Zealand Urban Design Protocol (the Protocol) was established as a first step towards improving the urban areas around New Zealand.

Urban design is the name of the process that designs and promotes 'liveable' and people focused urban spaces. It is a multidisciplinary approach to getting the best quality sustainable mix of natural processes, structures, social interaction, connectedness, and people. Urban design is often referred to as 'place making'.

The Protocol outlines the 7 C's of good urban design:

Context: Demonstrating an understanding that subdivision, buildings, land uses, movement corridors, the natural environment and processes, and public places and spaces occur

	<p>within site specific and broader Wanganui settings.</p> <p>Character: Reflecting, enhancing and protecting the distinctive natural and physical qualities within the local and broader context of Wanganui in the development proposal. This includes significant cultural and visual landscape features, the surrounding built environment, and historic heritage.</p> <p>Connections: Enhancing connectivity within multi-modal transportation networks and the links between the different transport modes (pedestrian, cycleway, street) to ensure safe and easy movement for people and the integration of the subdivision with existing and future surrounding neighbourhoods through these networks.</p> <p>Custodianship: Design that is environmentally and economically safe and accessible. Spaces that are protected as places of value by the community.</p> <p>Collaboration: Designs that acknowledge the contribution of different disciplines and perspectives, communicating and sharing knowledge for the integration of landuse, structures and networks. This includes the wider and affected communities.</p> <p>CPTED: Crime Prevention Through Environmental Design.</p> <p>The Protocol has guided a number of other documents, including the review of NZS 4404 – the voluntary National Standard for Land Development and Subdivision Infrastructure. This in turn has informed local policy such as</p>
--	--

	<p>the Wanganui Urban Development Strategy.</p> <p>During consultation the principle of Connections figured highly, along with Context. The community wanted to be connected, in the right way for convenience of movement, in the right environment. The recognition of existing character was also highlighted as an important feature of good development in the Wanganui urban area.</p>
Appropriateness	<p>The Wanganui District Council is a signatory to the New Zealand Urban Design Protocol (the Protocol) on behalf of the Wanganui Community. Therefore, Council and the community have indicated a desire for good and better quality urban. The outcomes from the Protocol are also complimentary to those sought by the Family Friendly Strategy 2012 to 2022.</p> <p>The government has also identified that urban design is an area that is highly importance as part of the Phase 2 reforms of the Resource Management Act. In particular, rather than rely on quality urban environments being addressed through the management of ‘physical resources’, urban design may be recognised as a ‘matter of national importance’.</p> <p>While Wanganui’s urban area generally expands incrementally and slowly, the proposed Objective is considered appropriate for the above reasons as additional urban development will continue, and such an approach will enable the provision of quality urban environments which will further enhance Wanganui as a place of high liveability.</p>

Proposed objective	Relates to Existing Objective/s
Objective 41	Objective O17, O40

PROPOSED OBJECTIVE O42

Objective O42	Subdivision infrastructure development that: <ul style="list-style-type: none">a. Performs its function effectively,b. Is flexible in design,c. Provides resilience to natural hazards,d. Is durable over its intended lifespan.e. Provides capacity in reticulated services for the intended future land uses in the catchment;f. Provides for ongoing maintenance;g. Achieves lifecycle costs that are affordable to the community;h. Provides for the effects of climate change.
Comment	<p>Proposed Objective 42 is focussed on the basic fundamental functions of Subdivision infrastructure. First and foremost, it must meet its functional requirement. In other words, it must do what it is required to do for example, supply sufficient water volume and pressure over a specified period to a sufficient standard.</p> <p>Flexibility was a matter discussed during consultation and identified as being desirable by the development community. This provides for alternative solutions to infrastructure issues that enables the potential for reduced cost, unique and individual developments, more environmentally friendly and low impact development.</p> <p>Durability and resilience to natural hazards are fundamental requirements for any piece of infrastructure and have a close relationship with affordability. The community does not have the resources to continually replace unreliable or hazard prone infrastructure.</p> <p>Infrastructure development is also required to provide sufficient capacity to be constructed to meet the anticipated requirements within the servicing catchment. In particular, a catchment based approach will help to avoid issues from</p>

	<p>incremental development creating barriers to further development by created points that are anticipated to be the end of the catchment at the time of development.</p> <p>The effects of climate change have the potential to mitigate the effectiveness of infrastructure, in particular, stormwater infrastructure. Where systems are designed without factoring additional rainfall intensity and other related factors, systems could fall short in terms of levels of service and require costly Council upgrades.</p>
Appropriateness	<p>The Objective is considered appropriate as it identified and requires the basic qualities and requirements that apply to all reticulated infrastructure.</p> <p>First and foremost the most basic requirement is that it performs its basic function effectively, this ensures the health and safety of the community. In addition, flexibility in design allows a more creative and potentially efficient use of resources.</p> <p>Climate change is recognised as having an impact now, and into the future in terms of the way infrastructure systems are design and constructed. The rate and nature of changes appears to be accelerating, so planning for these effects over the lifespan of a piece of infrastructure is crucial to ensure that infrastructure maintains a suitable level of service over its intended lifespan. In addition, resilience to natural hazards is important for the same reason, as is durability.</p> <p>Infrastructure must also provide capacity in reticulated services for the whole of the catchment, not just for the development which is serves. Infrastructure networks are systems of connections and accumulation. In many instances, what happens at the top, or even in the middle, of a catchment has downstream impacts.</p> <p>Sustainable infrastructure should also be affordable to</p>

	manage in the long term, and be able to be maintained for future generations to its full potential.
--	---

Proposed objective	Relates to Existing Objective/s
Objective O42	Objective O17, O40

PROPOSED OBJECTIVE O43

Objective O43 Subdivision and development in Wanganui that does not compromise the effectiveness of existing network utilities.	
Comment	<p>The term network utilities is applied to a range of structures, buildings, reticulation lines (eg, telecommunications) or spaces located on, in or over land or water.</p> <p>Network utility services support land use activities, including subdivision, and contribute to the health, safety, socio-economic wellbeing and quality of life of people and communities</p> <p>They have physical capacity limits and require on-going maintenance. The safe and efficient operation of the facilities can be adversely affected by land use activities.</p> <p>Infrastructure facilities have specific locational and operational requirements. Incompatible subdivision and land use activities can reduce the efficiency or impose constraints on the operation, maintenance, upgrading and development of these facilities. These effects can, in turn, adversely affect community health and safety.</p>
Appropriateness	Objective O43 is appropriate as it supports the health and safety benefits to the community from the operation of Network Utilities from activities that are incompatible. The wider benefits are protected from individual activities.

Proposed objective	Relates to Existing Objective/s
Objective O43	Objective O1, O17

AMENDED OBJECTIVE O4

Objective O4 Traditional practices and beliefs in resource management are recognised and valued.	
Comment	The Objective – O4 has only been slightly modified in that description has been removed. The Objective is still relevant in that it seeks to encourage the strategic management of infrastructure now and into the future, while balancing the needs of the natural and physical environment.
Appropriateness	As the Objective has not materially changed, no issues were raised during consultation, and that no significant adverse effects will arise, the retaining of Objective 17 is deemed appropriate.

Proposed objective	Relates to Existing Objective/s
Objective O4	Objective O4

PROPOSED OBJECTIVE O44

Objective O44 Development that avoids or mitigates adverse effects on the cultural values of items and places of significance to Maori.	
Comment	The Objective was developed as a response to the potential loss or damage to Maori cultural values as a result of development works. Specifically, earthworks are identified as a significant risk to sites or items of significance.
Appropriateness	Proposed Objective O44 is appropriate as it allows Wanganui District Council to partially meet its obligations under Part II of the Resource Management Act. It recognises and addresses the potential impact that development works can have on items and places of significance to Maori.

Proposed objective	Relates to Existing Objective/s
Objective O44	Objective O4,

PROPOSED OBJECTIVE O45

<p>Objective O45</p>	<p>Earthworks and land modification in Wanganui that maintains or enhances:</p> <ul style="list-style-type: none"> a. Amenity values b. Landforms and natural processes c. The efficiency and effectiveness of infrastructure d. The safety of people and property e. The stability of soils
<p>Comment</p>	<p>The District Plan previously has not had a framework for managing earthworks. This is the first attempt at providing a framework. Consultation, and recent experience within Council, raised the issue of a more proactive way of managing the effects of earthworks and land modification.</p> <p>While the Objective provides for the maintenance of matters (a) to (e), there may be ties where works are required, or provide for enhancements in these areas, in particular, the stability of soils.</p> <p>The community was concerned about issues surrounding amenity effects. In particular the likes of dust and noise, and did show an interested in limited large scale modification to land features.</p> <p>Council has recently undertaken several prosecutions around the creation of significant adverse environmental effects arising from poorly managed earthworks. This highlighted the need to specifically address the matter in the District Plan.</p>
<p>Appropriateness</p>	<p>Objective O45 is appropriate as it addresses matters that have been raised in Consultation with the community and internal staff in the managing of effects on natural and physical resources. In addition, the Objective addresses specific areas that have been affected by poorly managed earthworks in the Wanganui District in the recent past, past.</p>

--	--

Proposed objective	Relates to Existing Objective/s
Objective 45	N/a

Proposed Policies

The following existing policies are amended and new policies included as part of Phase Two of the District Plan review process as follows:

Compact urban development

Policy P1 Promote a pattern of urban development that is compact and efficient in the use of land and infrastructure services	
Relates to Objective/s: Objective 17, New Objective 40, New Objective 42	
Comment	Existing Policy P1 has been amended to focus on compact urban form and the efficient use of infrastructure. This is a change to the previous policy where the priority was to match development and the management of infrastructure. Additional policies are now proposed to achieve this function.
summary of benefits	As proposed, the policy should reduce the cost of servicing new and existing development for Council, and therefore ratepayers by consolidating rather than dispersing development. Compact places are easier to get from one point to another, are efficient with regard to the use of productive soils and can be more energy efficient with regard to transport networks.
summary of costs	There is potential for an increase in the retail cost of land for development is limited in terms of supply. There is also potential to limit the choice of lifestyle/ housing choice. However, these costs are mitigated by the low or negative growth population projections for the Wanganui urban area. Further to this, the Springvale Indicative Future Development Area has identified an area of land that will accommodate any new demand for the foreseeable future, in combination with the significant amount of existing undeveloped or underdeveloped residential land.
Effectiveness	The Policy is considered to be effective in avoiding urban sprawl and reducing unnecessary spending on infrastructure.
Efficiency	The Policy promotes the efficient use of existing

	infrastructure, particularly in that the population of Wanganui is experiencing low or negative growth, making the development of new infrastructure inefficient.
Appropriateness	Policy P1 continues to be appropriate as Wanganui continues to experience no or low growth, and infrastructure spending is currently unaffordable to the community.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>With low or negative population growth, inaction may not be perceived as a risk. However, with development of households and extensions of infrastructure on the periphery of urban Wanganui, a fall in population projected, and the increasing cost of servicing development, provide an unsustainable financial burden on ratepayers.</p> <p>The potential risk of acting is considered low as Council has identified sufficient resource to meet projected housing demand for several decades.</p>

Residential development

Policy P121 Require new subdivision and development of residential scale, intensity, and character to locate within the Residential Zone.	
Relates to Objective/s: Objective 17, New Objective 42	
Comment	Policy P121 is to be viewed in conjunction with Policy P122, and P2 and aims to support a compact and resource efficient urban area that provides for residential uses. The Residential Zone has been serviced and a level of amenity provided that specifically meets the requirements for residential activities, and is therefore the most suitable location for consolidated residential

	activities. The policy is not intended to limit the provision of lifestyle development in the Proposed Rural Lifestyle Zone where density is more intensive than one allotment per 5000m ² or net site area and serviced on-site. The minimum allotment size gives effect to the requirements of the Manawatu Wanganui Regional Council's OnePlan.
summary of benefits	Provides certainty in investment for developers and capital investment in services, avoids reverse sensitivity effects.
summary of costs	Limited flexibility in terms of where residential development may occur in the future.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	The Policy is efficient in that it is clear what is intended, and promotes the use of existing infrastructure investment.
Appropriateness	Policy P21 is appropriate as significant investment is made in reticulated infrastructure to service residential development, and avoids urban sprawl. Land is also allocated into 'zones' to support the needs and requirements of the particular uses they provide for. Activities of a residential scale may produce unintended effects in other locations, including reverse sensitivity to the activities that were intended to be established.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of not acting is the continued sporadic, spread out, and disjointed development that currently occurs around the periphery of the urban area surrounding Wanganui.</p> <p>The risk of acting is limiting the opportunities for development where people wish to live.</p>

Residential levels of service

<p>Policy P122 Require new residential subdivision and development to locate in areas where there is a suitable level of service from reticulated infrastructure available.</p>	
<p>Relates to Objective/s: Objective 17, New Objective 40, New Objective 41</p>	
Comment	<p>Policy P122 is part of a suite of Policies, including Policy P121 that seeks to manage the relationship between development and infrastructure. The Policy seeks to establish an appropriate standard to which residential areas can and should be serviced. In this instance, the suite of provisions and documents including the District Plan, NZS 4404 2004, and the Wanganui District Council Land Development and Subdivision Engineering Document 2012 determines what suitable levels of service for infrastructures are. . However, this does not discount the subdivider providing that level of service, nor is it intended to preclude alternative infrastructure solutions. The policy should be read in conjunction with the other policies that manage development and infrastructure.</p>
summary of benefits	<p>Policy 122 promotes a compact urban area, certainty in private and public investment in services, supports the efficient use of existing infrastructure resources, and reduces the need for additional capital expenditure on reticulated services.</p>
summary of costs	<p>The Policy may reduce the flexibility in terms of where new development may located.</p>
Effectiveness	<p>The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.</p>
Efficiency	<p>The Policy is efficient as its requirements are clear.</p>
Appropriateness	<p>Policy P122 is appropriate in that it ensures residential subdivision and development are provided with sufficient levels of infrastructure to maintain health, safety and amenity.</p>
Risk of acting or not acting if there is uncertain or insufficient information	<p>The risk of not acting is continued sporadic development which is</p>

<p>about the subject matter of the policies, rules, or other methods</p>	<p>disjointed and requiring additional capital expenditure in order to service, and an inefficient use of existing infrastructure resources.</p> <p>The risk of acting is the limitation of market demand in the locations in which the community wish to develop and live in Wanganui.</p>
--	---

Development within the urban boundary

<p>Policy P2 Require new urban subdivision and development to locate in areas within the urban boundary and where there is available infrastructure capacity or where upgrades or extensions to services have been programmed</p> <p>Relates to Objective/s: Objective 17, Objective 40</p>	
<p>Comment</p>	<p>The Policy replaces Policy P2 in the Residential Zone and has been strengthened from ‘promote’ to ‘require’. The intent of the policy differs from P121 which promotes consolidation, or P122 which seeks to establish a minimum level of service for residential development. Rather, the focus of P2 is requiring urban scale development within the Urban Boundary to located where the levels of service established by P122 can be achieved. However, this is not required to be fully reticulated. Policy P143 provides for alternative solutions to meets required levels of service.</p> <p>The Policy aims to ensure that most residential development occurs within the Residential Zone where investment in services are planned for and anticipated. This enables more efficient long term planning of infrastructure development and reduces the long term costs of ad-hoc development.</p>
<p>Summary of benefits</p>	<p>The Policy supports the viability of the Residential Zone by focussing development in the areas that have been identified for development. This gives certainty to the</p>

	<p>community and allows growth to be better managed.</p> <p>The policy also allows Council to efficiently plan, manage and operate infrastructure in a manner that is cost effective and coordinated.</p>
Summary of costs	<p>Areas that are currently able to be developed to a residential scale and character but not within the Residential Zone may be disadvantaged with regard to the ability to develop. However, these areas have been rationalised as part of the review process to avoid the expectation of development suitability.</p>
Effectiveness	<p>The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.</p>
Efficiency	<p>The Policy is efficient as it a slightly amended existing Policy, and that it promotes efficient use of land with existing infrastructure investment.</p>
Appropriateness	<p>P2 is appropriate in that it promotes a compact urban area and efficient use of existing infrastructure investment.</p>
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>With low or negative population growth, not acting may not be perceived as a risk. However, with development of households with fewer persons per household, even with a fall in population, and combined with the increasing cost of servicing development, provide an unsustainable financial burden on ratepayers.</p> <p>Inaction can compromise the future viability of the Residential Zone by allowing continued dispersal of residential development in areas not intended to support a density or residential development or level of service from infrastructure.</p>

	The potential risk of acting is considered low as Council has identified sufficient resource to meet projected housing demand for several decades.
--	--

Allocated infrastructure

Policy P123 Avoid subdivision and land use development that utilises infrastructure capacity allocated for other identified areas or uses.	
Relates to Objective/s: Objective 17, New Objective 40, New Objective 42	
Comment	Policy 123 seeks to ensure that land zoned for development retains that ability by maintaining the servicing capacity that is anticipated to provide for it within the infrastructure networks.
summary of benefits	This policy provides certainty for those who have invested in land identified as being suitable for development. This enables straightforward financial planning around the costs of providing suitable levels of servicing to development.
summary of costs	The main costs are those to flexibility and the opportunity cost of developing in other areas that are not planned to be serviced. However, when viewed in conjunction with Policy P2, these areas should only be within the Urban Boundary and may be the result of development intensity exceeding what is anticipated by the existing network. However, Policy P143 provides flexibility in enabling alternative servicing solutions within the bounds of Policy P2.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	The Policy is efficient as areas that have been allocated servicing infrastructure are able to use it and additional infrastructure to service that area is avoided.
Appropriateness	Policy 123 is appropriate as it supports planned

	infrastructure allocation and investment.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risks of not acting are relatively low in that growth pressures in the Wanganui urban area are low. However, with some parts of the urban area experiencing limited capacity, the allocation of servicing infrastructure to other areas may render some land un-developable, or more expensive to develop.</p> <p>The risk of acting includes the potential to stifle development in some areas over others. In particular where the market may want to demand as opposed to where infrastructure capacity has been allocated.</p>

Reduction in residential allotment size

Policy P124	<p>Provide for a reduction in minimum residential allotment size where the entire infrastructure catchment can support both:</p> <ol style="list-style-type: none"> a. The level of service required by the proposed development, AND; b. The proposal will not reduce the ability of the catchment to provide for development in any other location for which it is intended to service.
Relates to Objective/s: Objective 17, New Objective 40, New Objective 42	
Comment	Plan Change 27 proposed a minimum allotment size of 450m ² where previously the Operative Wanganui District Plan had no minimum. While most development currently sits within a regular size of approximately 450m ² to approximately 700m ² , recent development, particularly in the Otamatea area, has begun to reduce minimum site sizes. Statistics suggest that, given

	<p>Wanganui's aging population, this trend is likely to continue. There is only limited capacity in reticulated services. However, Policy P124 seeks to enable intensive development where there is suitable capacity. It is envisaged that this policy can work in conjunction with both P123 so other land will not have its developable potential limited, and P143, which enables alternative infrastructure solutions. There is limited knowledge of the abilities of the reticulated services catchments to sustain allocations of use. The draft Otamatea Structure Plan included an assessment of services capacity that has identified deficiencies.</p>
summary of benefits	<p>Policy 124 ensures that reticulated infrastructure systems are not over allocated, avoiding health and safety costs, capital expenditure by Council, while enabling more intensive development to meet market demand, and demand in locations that may be under serviced.</p>
summary of costs	<p>Additional costs may be borne by the developer in ascertaining catchment capacity and providing alternative servicing solutions.</p>
Effectiveness	<p>The Policy is considered to be effective in that is useful when assessing applications and setting conditions for subdivision consents.</p>
Efficiency	<p>The Policy is efficient as it enables maximum use of allocated infrastructure and development.</p>
Appropriateness	<p>Policy P124 is appropriate as it it promotes sustainable use and development.</p>
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of not acting is the potential over allocation of reticulated infrastructure. The risk of acting is providing a disincentive for more compact development.</p>

Quality Infill development

Policy P125 Promote infill subdivision and development that:

- a) Complements the character of the area in which it is

<p>located</p> <p>b) Is located in an area that has capacity for reticulated services</p> <p>c) Provides on-site amenity</p> <p>d) Enables continued solar access.</p>	
<p>Relates to Objective/s: New Objective 40</p>	
<p>Comment</p>	<p>Policy P125 refers to infill development which is the intensifying of development in existing areas of development, as opposed to new or undeveloped areas. The focus of the policy is the provision of quality infill development that provides good places to live, that can be serviced, and compatible with the surrounding amenity.</p>
<p>Summary of benefits</p>	<p>Provides high quality in-fill development, makes use of existing infrastructure, within and complimenting existing areas of development.</p>
<p>Summary of costs</p>	<p>Additional assessment of subdivision quality for developers.</p>
<p>Effectiveness</p>	<p>The Policy is considered to be effective in that is useful when assessing applications and setting conditions for subdivision consents.</p>
<p>Efficiency</p>	<p>Policy P125 is efficient in that it provides a clear direction in terms of what outcomes are required.</p>
<p>Appropriateness</p>	<p>The Policy is appropriate as it promotes sustainable and low impact subdivision.</p>
<p>Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods</p>	<p>The risk of acting is the limitation of the potential for sites to be able to be utilised for efficient infill development.</p> <p>The risk of not acting is ad-hoc development of subdivision in residential areas that may singularly or cumulatively reduce the amenity qualities of a neighbourhood.</p>

Rural Lifestyle Zone connections

<p>Policy P126 Avoid connections to, and extensions of, the reticulated infrastructure network in the Rural Lifestyle Zone.</p>	
<p>Relates to Objective/s: Objective 17, New Objective 40, New Objective 42</p>	
Comment	<p>Policy P126 sits along side the Objectives and Policies within the Rural Lifestyle Zone in avoiding the expansion of reticulated infrastructure into this zone. The focus is on maintaining a rural residential type feel and on-site servicing. In that regard this policy works in conjunction with P142. The Policy also seeks to manage unnecessary and expensive expansion of infrastructure.</p>
summary of benefits	<p>The benefits of Policy P126 consolidates residential services and allows infrastructure to be more appropriately allocated to higher density development.</p>
summary of costs	<p>The costs of Policy P126 include reducing the amount of development possible in the zone.</p>
Effectiveness	<p>The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.</p>
Efficiency	<p>Policy P126 is efficient in that it allows the urban services to be allocated to urban uses, and that all services can and should be carried out on site, and therefore should not need urban services.</p>
Appropriateness	<p>The proposed Policy P126 is appropriate as it promotes an efficient use of infrastructure resources.</p>
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is preventing development which may have otherwise occurred.</p> <p>The risk of not acting is additional urban sprawl and extensions of urban services, with less ratepayers to pay for capital works and maintenance.</p>

Servicing information

Policy P127 Ensure adequate information is provided prior to the granting of subdivision or land use consent to demonstrate that there is provision for additional connections to reticulated infrastructure and network utilities to all allotments to a suitable standard.

Relates to Objective/s: Objective 17, New Objective 40, New Objective 42

<p>Comment</p>	<p>The Policies above are part of a framework that requires the identification of suitable levels of service up front as part of the application, and the actions that are required when suitable levels of service or infrastructure are not available. However, it should be noted that the intent of these Policies is on the services that are required for the particular project, and not intended to require developers to pay fix existing deficiencies in the network/s.</p> <p>Council in its Draft 2012 to 2022 Long Term Plan has identified funding for modelling of its reticulated network over this period. Anecdotally, there are areas in the reticulated systems that are over allocated or close to capacity. However, the exact location and nature of these is not yet fully understood.</p> <p>The Policies apply equally to land use and subdivision in the Residential Zone. However, the methods used to implement the policy may differ.</p>
----------------	---

<p>Summary of benefits</p>	<p>Primarily these Policies allow key issues to be identified early on in the development process. The Policy also enables to proceed without full information on capacity or where capacity is exceeded where suitable alternative methods can be found.</p>
----------------------------	---

<p>Summary of costs</p>	<p>The costs are primarily located at the beginning of the subdivision process where an applicant may be required to identify the ability of a proposal to be serviced by reticulated infrastructure. However, this is likely what would have occurred previously, the policy is in effect just entrenching this practice.</p>
-------------------------	--

Effectiveness	The Policy is considered to be effective in that is useful when assessing applications and setting conditions for subdivision consents.
Efficiency	Policy P127 is efficient in that it promotes the provision of sufficient information at the beginning of the consent process and may avoid delays.
Appropriateness	The Policy is appropriate as it ensures that sufficient information is available for applications to meet the Objectives of the Plan.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of not acting may include considerable delays in the processing of subdivision and resource consents arising from a lack of clarity over what is expected from the servicing requirements of development. Delays in processing consents add to the costs borne by developers. Outlining clear expectations will limit uncertainty and should reduce processing times. There is also potential for inconsistent levels of service provided. In particular, over allocation of capacity in reticulated services.</p> <p>The risk of acting is that some development may be restricted where there is imperfect information is available. This may place additional costs of the developer where they choose to proceed with a development and provide that level of service (either by way of new or alternative infrastructure provision) as a part of a proposal.</p>

Infrastructure qualities

<p>Policy P128</p>	<p>Require Infrastructure design, construction, operation and maintenance to be:</p> <ul style="list-style-type: none"> a. Effective and efficient. b. Able to be maintained in an effective, efficient manner. c. Cost effective and affordable. d. Durable. e. Integrated with other infrastructure and land uses. f. Responsive to local conditions. g. Compatible with network utilities and other reticulated infrastructure, h. Designed and constructed taking into account the effects of climate change. i. Resilient to natural hazards.
---------------------------	--

Relates to Objective/s: Objective 17, New Objective 40, New Objective 42

<p>Comment</p>	<p>Policy 128 is a direct response to the functional requirements of Objective O42. The policy sets the minimum performance qualities that are required of all infrastructure, and is seen as the headline policy providing the bottom-line in this area. The policy is also intended to work with a number of other policies to achieve flexibility and be enabling.</p>
<p>Summary of benefits</p>	<p>The benefits are the provision of suitable, sustainable, and quality infrastructure assets to the community and to those who will benefit from it. Policy 128 also provides certainty in terms of what is to be expected from developers. The focus is on affordable quality and effectiveness.</p>
<p>Summary of costs</p>	<p>The costs potentially arising from P128 may fall on developers who will be required to provide a more suitable level of infrastructure quality instead of the community who would otherwise be required to pay for repairs or replacements.</p>
<p>Effectiveness</p>	<p>The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.</p>

Efficiency	Policy P128 is efficient in that it promotes efficient infrastructure that meets a range of requirements to provide a suitable level of service at an affordable cost.
Appropriateness	The Policy is appropriate as it promotes the qualities desired from subdivision infrastructure.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is creating additional requirements and costs for developers to meet in servicing subdivision development.</p> <p>The risk of not acting is allowing lesser quality infrastructure serve the community.</p>

Optimal use of existing infrastructure

Policy P74 Promote the optimal use of existing reticulated infrastructure by identifying areas of increased density where is does not compromise environmental quality and amenity values prior to developing extended or new infrastructure.

Relates to Objective/s: Objective 17, New Objective 40, New Objective 42

Comment	<p>The previous policy P74 was developed as a response to the significant infrastructure renewals being undertaken at the time of the development of the District Plan. The policy sought a strategic approach to managing what was mainly replacement infrastructure. As most of these works have been completed this is no longer as relevant.</p> <p>This Policy refers to the strategic use and allocation of infrastructure resources, when it comes to identifying land and land servicing options. This provides for better strategic management of infrastructure assets.</p> <p>There is evidence of a lack of capacity of some services in some areas, and potentially excess in others. Development should be focussed on areas where there is existing capacity before locating in areas which</p>
---------	--

	<p>capacity needs to be provided for. In addition, areas that have been allocated capacity should generally be those which use it. Conversely, where capacity has been allocated to particular land and uses it should not be used by those it is not allocated to.</p> <p>This policy supports the areas the areas that have been zoned for more intensive development and have infrastructure provided and available for the purpose.</p> <p>Rural lifestyle development in areas surrounding the Wanganui urban area has been demanding residential levels of service with regard to reticulated services. As these are intended to be serviced by on-site means, capacity that is required to service residentially zoned land is therefore taken up by areas with a lower density of users. This also increases the cost to the community as there are less people per meter of pipe' to pay for capacity and maintenance.</p>
<p>Summary of benefits</p>	<p>The primary benefit of this Policy is the efficient use of existing infrastructure capacity. This will reduce the need and cost in developing additional capacity that will need to be maintained by the projected static number of ratepayers. The policy also promotes efficiency in the supply of infrastructure in that those that are allocated the resource will be getting the use of that resource. This allows for better infrastructure management and enables the fair allocation of costs between ratepayers.</p>
<p>Summary of costs</p>	<p>Areas that are not currently serviced but are identified as suitable development that may be disadvantaged with regard to the ability to develop. However, these areas have been rationalised as part of the review process to avoid the expectation of development suitability.</p>
<p>Effectiveness</p>	<p>The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.</p>
<p>Efficiency</p>	<p>Policy P74 is efficient in that is seeks to get the optimum performance out of existing infrastructure.</p>

Appropriateness	The Policy is appropriate as it promotes the efficient use of existing infrastructure.	
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	The risk of acting is restricting new development in new areas are discounted, forgoing growth.	The risk of not acting is increasing costs to Council (and community) requiring additional capital works to service development where it could have been accommodated in other parts of the existing systems.

Reticulated catchment requirements

<p>Policy P129 Require the design of new reticulated wastewater and stormwater infrastructure to take into account:</p> <p>a) The relevant upstream and downstream capacity and restrictions in the servicing catchment when land in the catchment is fully developed to a level anticipated by the District Plan.</p> <p>b) The future anticipated servicing demand of the proposed development when completed.</p>		
<p>Relates to Objective/s: Objective 17, New Objective 40, New Objective 42</p>		
Comment	Policy 129 promotes a 'whole of catchment' approach to infrastructure use and development. This approach is promoted in NZS 4404: 2010 as a means of managing infrastructure resources. This is particularly important where the capacity within some reticulated services in parts of the urban area of Wanganui have limited information around their performance and capabilities.	
Summary of benefits	The benefits of Policy P129 include the incorporation of future development needs within a catchment, avoiding an under provisioning of network capability and costly upgrades. The other primary benefit is that downstream capacity is assessed and addressed. In particular, the costs of providing upgrades to the network will likely fall	

	on those who directly benefit.
Summary of costs	Costs from Policy P129 will most likely fall on developers in terms of determining capacity, and are likely to be who may be required to contribute or fund the cost of capital works in the catchments in order to provide for their development.
Effectiveness	The Policy is considered to be effective in that it is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy P129 is efficient as the policy enables the development of land that is zoned for development and potentially constrained by deficiencies in existing stormwater, water, and wastewater infrastructure.
Appropriateness	The Policy is appropriate in that it assists in ensuring capacity in infrastructure catchments.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is to place additional costs on developers in funding research and capital works to address deficiencies in servicing catchments.</p> <p>The risk of not acting is inadvertently stressing downstream parts of the servicing network and placing the costs on upgrades or mitigation works on the community rather than those who benefit.</p>

Connectivity of reticulated services

Policy P130 Require connectivity and compatibility between existing and new reticulated infrastructure.

Relates to Objective/s: Objective 17, New Objective 40, New Objective 42

Comment	Policy P130 focuses on the connectivity of both reticulated and roading infrastructure. Reticulated services in that not only pipes and the like are required to physically join, but modes of servicing need to be compatible. For example, low impact stormwater
---------	--

	<p>devices may be required to discharge into the reticulated network by way of pipe at some point.</p> <p>Roading connectivity provides efficiency in vehicle movements and ease of access to a public spaces, work, and housing areas.</p>
summary of benefits	The benefits from P130 include more efficient development, reduced costs, and improved travel times for transport infrastructure.
summary of costs	Development will be required to take a more strategic view, potentially costing time and money researching appropriate options, routes and connections.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy P130 is efficient as it promotes connectivity .
Appropriateness	Proposed Policy P130 is appropriate in that it achieves good quality urban design outcomes, and contributes to low impact development.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting can include increased costs of development in order to provide for connectivity where services will only achieve this outside the foreseeable future.</p> <p>The risk of not acting includes the additional cost of connecting new and existing infrastructure. With regard to transport, the risk of not acting is inefficient roading layouts, separating the community from public spaces, and an inefficient use of land.</p>

Appropriate level of infrastructure

<p>Policy P132</p>	<p>Require all new residential subdivision to connect to an appropriate level of infrastructure and network utilities prior to the issue of a certificate pursuant to Section 224 of the Resource Management Act 1991.</p>
<p>Relates to Objective/s: Objective 17, New Objective 1, New Objective 10</p>	
<p>Comment</p>	<p>Policy P132 directs when servicing connections to reticulated and network infrastructure is required as opposed to P122 which establishes a requirement for a level of performance/service. The current provisions of the District Plan are ambiguous in that single allotment subdivisions are currently not required to provide connections, but are intended to do so.</p> <p>Connections are intended to be present at the time of completion of subdivision so development on an allotment can proceed immediately and without hidden investment required by the development of the allotment. This does not limit the ability to bond certain works by the subdivision developer.</p> <p>The level or quality of infrastructure is determined by a combination of the performance requirements of the District Plan, NZS 4404 2004, and the Wanganui District Council Land Development and Subdivision Engineering Document 2012. Compliance with these documents is deemed a suitable level of service.</p>
<p>Summary of benefits</p>	<p>The main benefit from Policy P132 is that all allotments should be serviced and ready for development prior to the completion of subdivision.</p>
<p>Summary of costs</p>	<p>Cost will mainly fall on subdivision developers in ensuring sites are development ready when completed.</p>
<p>Effectiveness</p>	<p>The Policy is considered to be effective in that is useful when assessing applications and setting conditions for subdivision consent.</p>
<p>Efficiency</p>	<p>Policy P132 is efficient as it incorporates connections into the subdivision process and avoids additional works</p>

	after completion.
Appropriateness	The Policy is appropriate in that it ensures suitable levels of service for land use activities.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is negligible.</p> <p>The risk of not acting is that some sites are created without suitable servicing, and some are. This can send mixed messages to the property market in terms of price, and can unexpectedly add significant costs to the development of an allotment.</p>

Infrastructure for new subdivisions

Policy P76 Ensure on-site infrastructure facilities, and the cost of providing upgrades or extensions to district infrastructure facilities to serve new subdivisions, building developments or other land use activities, are paid for by the developer

Relates to Objective/s: Objective 17, New Objective 1, New Objective 10

Comment	This is an existing policy that has been amended slightly. The previous version of P76 refers to a 'significant portion' of upgrades and extensions to infrastructure should be paid by the developer. The focus has been amended slightly to require the developers of subdivisions to internalise that cost completely, but only to a level required to service that development or subdivision. This is intended to be in addition to any financial contribution required to fund any capital works to provide capacity in the broader network.
summary of benefits	The persons who directly benefit from an increase in capacity or levels of service are those who pay. The costs are related only to those required to service a development.
summary of costs	More costs are borne directly by the developer and not the wider community.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land

	use consents.
Efficiency	Policy P76 is efficient as it will require payment and or upgrades in close proximity to actual additional demand.
Appropriateness	The Policy is appropriate it provides for efficient and affordable infrastructure.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is the increase in costs may limit development.</p> <p>The risk of not acting is additional public fund and debt may used to fund and subsidise private development.</p>

Protect infrastructure

<p>Policy P80 Protect reticulated and network utility infrastructure resources in the District from the adverse effects from inappropriate land use and subdivision development which compromises their effectiveness.</p> <p>Relates to Objective/s: Objective 17, New Objective 40, New Objective 42, New Objective 43</p>	
Comment	Policy P80 has been retained. However, the explanation has been removed. The policy explicitly addresses both reticulated and network infrastructure, and clarifies the direction is to protect their effectiveness from subdivision and development that is not appropriate.
Summary of benefits	Policy P80 ensures security and continuity of supply in infrastructure that ensures the health and safety of a wider community.
Summary of costs	Limited development opportunities for some locations and types of development.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy P80 is efficient as it protects the existing investment in network utilities.
Appropriateness	The Policy is appropriate in that it protects network utilities.

<p>Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods</p>	<p>The risk of acting may lead to broader restrictions on development where the requirements of infrastructure are larger than anticipated.</p> <p>The risk of not acting is to allow inappropriate development to interfere with the critical functions of infrastructure, potentially putting the health and safety of the community at risk.</p>
---	---

Subdivision and Infrastructure – Transport

<p>Integrated streets</p>	
<p>Policy P133 Promote street design streets that integrate transport functions with adjoining lands uses in a manner that is appropriate for surrounding environment.</p>	
<p>Relates to Objective/s: Objective 17, New Objective 40, New Objective 41, New Objective 42</p>	
<p>Comment</p>	<p>Policy P133 aligns with the philosophy of urban design and the New Zealand Urban Design Protocol. Principally, the policy promotes transport infrastructure to be designed to meet its functional purpose in the roading hierarchy, but also reflect the environment in which it locates and the surrounding uses.</p>
<p>Summary of benefits</p>	<p>The primary benefit from Policy P133 is the integration of transport infrastructure with the environment. This allows more tailored and flexible designs.</p>
<p>Summary of costs</p>	<p>The additional choice can be confusing for developers in choosing the most appropriate transport corridor design.</p>
<p>Effectiveness</p>	<p>The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.</p>
<p>Efficiency</p>	<p>Policy P133 is efficient as new roads will be constructed in a more appropriate manner and not require additional works for mitigation works or works to make them more</p>

	appropriate to their setting, uses and environment.
Appropriateness	The policy is appropriate as it integrates infrastructure with land uses and the environment.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is the wrong transport corridor typology is still used.</p> <p>The risk of not acting is transport corridors do not reflect their function and, surrounding uses and environment. This can provide a disconnect between the corridor and the community.</p>

Liveable streets

<p>Policy P134 Encourage the development of liveable streets that contribute to a sense of place, safety and positive community interaction by enabling activities that integrate transport corridors with adjoining land uses.</p>	
<p>Relates to Objective/s: Objective 17, New Objective 40, New Objective 41, New Objective 42</p>	
Comment	Policy P134 seeks to develop more liveable environments through a range of uses of the transport corridor, including for 'place making' purposes. This may include street furniture, differing allocations of space/uses within a corridor cross section. This policy is intended to be complimentary to Policy P133 in that this policy enables uses, and P133 guides what is an appropriate design in terms of the surrounding environment, uses, and road function.
Summary of benefits	The benefits of P134 include increased liveability, connecting the community with infrastructure, enabling land uses, and providing flexibility in corridor design.
Summary of costs	The potential cost of P134 may be additional cost of design, less certainty, and potential for additional costs of construction. However, this may not be the case, particularly as the policy only seeks to 'encourage' not

	'require'.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy 134 is efficient as it enables uses on existing infrastructure to create liveable streets.
Appropriateness	The Policy is appropriate in that it promotes liveability and integrates infrastructure and the community.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risks of acting include the loss of development due to uncertainty in terms of design expectations.</p> <p>The risk of not acting is the lost opportunity to enhance the liveability of Wanganui's urban areas.</p>

Roading hierarchy

Policy P135 Require new transport corridors to be designed, constructed, and operated in accordance with their intended function in the Roding Hierarchy.	
Relates to Objective/s: Objective 17, New Objective 40, New Objective 41, New Objective 42	
Comment	Policy P135 works with Policy P133 in that it aids in defining what the function of the transport corridor is. The Roding Hierarchy has also been updated in accordance with the recommendations of the Wanganui Urban Transport Strategy.
Summary of benefits	The benefit from Policy P135 is that it supports the investment in transport corridors.
Summary of costs	The policy may restrict some land uses that are in conflict with the status of a transport corridor in the roading hierarchy.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy P135 is efficient as new roads will be constructed in a more appropriate manner and not require additional

	works for mitigation works or works to make them more appropriate to their setting, uses and environment.
Appropriateness	The Policy is appropriate in that it enables the transport network to be effective.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is to limit the roading designs unnecessarily and not allow for changes in transport corridors function in the roading hierarchy.</p> <p>The risk of not acting is that the function of the road is compromised by poor design.</p>

Multimodal connectivity

Policy P136 Require the connectivity of new streets and public accessways with existing infrastructure, in a logical progression and in a manner that does not compromise future subdivision or development of surrounding sites at the time of subdivision.	
Relates to Objective/s: Objective 17, New Objective 40, New Objective 41, New Objective 42	
Comment	Policy P136 seeks to promote connectivity in all forms of transport, in a manner that looks to the future. Development trends have promoted the use of cul-de-sac type roading layouts which can be inefficient, poor in terms of connectivity, and separate the community. Connectivity, either by way of road, cycleway, or walkway, improves access to areas of work, living, and play.
Summary of benefits	The benefits of Policy P136 are that it promotes a more strategic forward looking approach to road corridor layout design, promotes the efficient use of resources, and connects communities.
Summary of costs	There is a possibility that additional costs may fall on the developer where additional roading construction may be required to enable connectivity.

Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy P136 is efficient as it promotes new infrastructure to provide connectivity, which is less expensive in the long term than connecting infrastructure after land has been fully developed.
Appropriateness	The policy is appropriate as it integrates infrastructure with land uses and the environment and connects people and infrastructure.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is that finding and creating connections could be expensive and cost prohibitive to develop in Wanganui.</p> <p>The risk of not acting is that the transport network becomes more disaggregated and communities less connected.</p>

Legal and physical access

Policy P137 Require new allotments to have legal and physical access to a formed legal road.	
Relates to Objective/s: New Objective 40,	
Comment	Policy P137 puts in place a basic requirement for subdivision of new allotments to gain access, and relates to requirements under Section 106 of the Resource Management Act.
Summary of benefits	The benefits of the policy are that new allotments will have a suitable level of service for access.
Summary of costs	The costs of Policy P137 are the costs of acquiring and constructing access.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications and setting conditions for subdivision consents.
Efficiency	Policy P137 is efficient in that what is expected is clear.
Appropriateness	The Policy is appropriate as it addresses safety and

	health.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is negligible.</p> <p>The risk of not acting is sites or activities that do not require access are required to do so.</p>

Low impact stormwater management

Policy P138 Encourage the use of low impact stormwater management in subdivision and development Zone where ground conditions are suitable.

Stormwater mitigation

Policy P139 Require the use of low impact stormwater management where downstream capacity in the reticulated system likely to be exceeded and ground conditions are suitable.

Relates to Objective/s: Objective 17, New Objective 40, New Objective 41, New Objective 42

Comment	<p>The policies above recognise that there are a number of benefits from using low impact stormwater solutions, and also that there are some circumstances where these approaches are necessary.</p> <p>Low impact stormwater approaches provide opportunities to provide environmental benefits beyond the transportation and disposal of stormwater. They can more effectively manage contaminants, detain overland flows, reduce pressure on reticulated infrastructure, provide design elements to neighbourhoods, and even create recreation opportunities.</p> <p>There are a number of places within the urban areas of Wanganui that are thought to be at, or have already exceeded, capacity with regard to stormwater. Modelling is proposed in the 2012-2022 Long Term Plan to be undertaken in 2013, 2014, and 2015 in order to determine the level of capacity within Council's</p>
---------	--

	<p>stormwater infrastructure.</p> <p>The policy works in conjunction with Policy P2 in that where full capacity provided as part of a development proposal it will not be 'required' to provide low impact stormwater solutions, but they are still 'encouraged'.</p>
Summary of benefits	The use of low impact disposing, detaining or retaining of stormwater by means other than reticulated infrastructure can increase the life of existing services, while enabling development to continue.
Summary of costs	The use of low impact stormwater approaches can add complexity to subdivision development, and potentially additional maintenance costs over and above 'pipe and discharge' methods. However, this may not always be the case.
Effectiveness	The Policies are considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	P138 and P139 are efficient as the policies enable the development of land that is zoned for development and potentially constrained by deficiencies in existing stormwater infrastructure.
Appropriateness	The policies are appropriate in that it enables flexible and low impact infrastructure.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risks of acting may include establishing a system of treatment that is expensive to maintain.</p> <p>The risks of not acting include preventing land that can not or will not be serviced by reticulated stormwater infrastructure.</p>

Reticulated wastewater

Policy P140 Require new allotments in the Residential and Neighbourhood Commercial Zones to connect to the reticulated wastewater network.

Relates to Objective/s: New Objective 40,	
Comment	This Policy is a basic requirement for the health and safety of the community. In particular, the Policy requires connection to the reticulated system.
Summary of benefits	Efficient and effective method for managing the wastewater demands of the district.
Summary of costs	The costs of Policy P140 are the costs of acquiring and constructing connections to the network.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications and setting conditions for subdivision consents.
Efficiency	Policy P140 is efficient in that what is expected is clear.
Appropriateness	The Policy is appropriate as it addresses safety and health.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risks of acting are negligible.</p> <p>The risk of not acting is the potential health and safety effects arising from on-site disposal of effluent, and an increase in site size required to process effluent on site.</p>

Reticulated water

Policy P141 Require new allotments in the Residential Zone to connect to reticulated potable water network.

Relates to Objective/s: New Objective 40,

Comment	This Policy is a basic requirement for the health and safety of the community. In particular, the Policy requires connection to the reticulated system.
Summary of benefits	Efficient and effective method for managing the water demands of the district.
Summary of costs	The costs of Policy P140 are the costs of acquiring and constructing connections to the network.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications and setting conditions for subdivision consents.
Efficiency	Policy P141 is efficient in that what is expected is clear.

Appropriateness	The Policy is appropriate as it addresses safety and health.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risks of acting are negligible.</p> <p>The risk of not acting is the potential health and safety effects arising from a lack of a reliable source of potable water.</p>

On-site services

<p>Policy P142 Require new allotments in the Rural and Rural Lifestyle Zone to provide for wastewater and stormwater disposal onsite, and sufficient non-reticulated potable and fire fighting water supply.</p> <p>Relates to Objective/s: New Objective 40,</p>	
Comment	This policy works in conjunction with Policy 126 which avoids reticulated servicing being provided. Together, they reinforce that, outside the urban area, all activities need to provide for on-site servicing.
Summary of benefits	The benefits of Policy P142 include that non-reticulated sites are serviced, less pressure on Council's reticulated systems, and health and safety is maintained.
Summary of costs	In some instances, the costs of producing individual on-site systems are significant.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications and setting conditions for subdivision consents.
Efficiency	Policy P137 is efficient in that what is expected is clear.
Appropriateness	The Policy is appropriate as it addresses safety and health and efficient use of infrastructure.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is potentially an increase in adverse effects arising from poorly functioning onsite services.</p> <p>The risk of not acting includes a reliance on expensive extensions to</p>

	Council's reticulated infrastructure.
--	---------------------------------------

Alternative infrastructure design

<p>Policy P143 Enable the use of quality alternative infrastructure solutions where they are in accordance with industry best practice, quality urban design and infrastructure design principles where approved by the Manager, Infrastructure Services.</p>	
<p>Assessment of alternatives</p>	
<p>Policy P144 Require the assessment for the approval of alternative infrastructure solutions to be processed through the Alternative Design Procedure and meet the assessment criteria for quality urban design and infrastructure.</p>	
<p>Relates to Objective/s: Objective 17, New Objective 40, New Objective 41, New Objective 42</p>	
<p>Comment</p>	<p>The level or quality of infrastructure is determined by Policy P132 through a combination of the performance requirements of the District Plan, NZS 4404 2004, and the Wanganui District Council Land Development and Subdivision Engineering Document 2012. Compliance with these documents is deemed a suitable level of service.</p> <p>Policy P143 enables alternative solutions, and Policy P144 provides a process for providing servicing solutions to that level of service by alternative means. While the Plan currently accepts that there may be other solutions available other than what is specified from Council, a process and method of assessment has not been provided.</p> <p>This approach is promoted in NZS 4404 : 2010 as a method of provided for solutions that are more sustainable and cost effective.</p>
<p>Summary of benefits</p>	<p>The benefits of Policy P143 and P144 are that they provide for and enable alternative and potentially more</p>

	sustainable and cheaper servicing solutions. Establishing a process also brings certainty and transparency to alternative solutions.
Summary of costs	The policies do impose a process, which may potentially add cost in terms of delay and require specialist engineering input.
Effectiveness	The Policies are considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policies P143 and P144 are efficient in that it establishes a process for developing flexible infrastructure design solutions.
Appropriateness	The policies are appropriate in that it enables flexible, affordable, and quality infrastructure development.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is to cause delays in proposing alternative solutions.</p> <p>The risk of not acting is losing the opportunity for softer and more sustainable solutions, or developers not proceeding as there is no guidance on other sustainable or affordable solutions.</p>

Quality urban design

Policy P145 Promote subdivision and infrastructure development that demonstrates the good urban design qualities of the New Zealand Urban Design Protocol.

Relates to Objective/s: New Objective 41,

Comment	<p>The Wanganui District Council is a signatory to the New Zealand Urban Design Protocol, and is therefore committed to promoting good urban design outcomes.</p> <p>The Protocol contains the 7 C's of good urban design:</p> <p>Context Character</p>
---------	---

	<p>Choice Connections Creativity Collaboration Crime Prevention Through Environmental Design (CPTED)</p> <p>Urban design processes are increasingly being recognised as good planning practice in creating liveable environments and is being implemented increasingly through statutory and non-statutory documents. Existing Council policy such as the Wanganui Urban Transport Strategy already incorporates the ideas and philosophies of the Protocol.</p>
Summary of benefits	There are a range of benefits that can be attributed to good urban design. These include safer and liveable environments, energy efficient transport layouts, better engaged and connected communities, more choice, integrated landuses and infrastructure, low impact development, and increased levels of amenity.
Summary of costs	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy P145 is efficient as it promotes quality urban development.
Appropriateness	The Policy is appropriate in that it promotes the qualities of good urban design.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	The risk of acting is that the cost of developing allotments may increase and not meet the demands of the market. However, some development may be less expensive, or the market may lift to meet the price of a good quality product.

	The risk of not acting is that the urban areas of Wanganui do reflect good urban design qualities and are not as liveable as could be anticipated.
--	--

Low impact development

<p>Policy P146 Promote the integration of natural processes, including solar energy, landforms, land features, and overland flow paths into subdivision and infrastructure design and construction where appropriate.</p> <p>Relates to Objective/s: Objective 17, New Objective 40, New Objective 41, New Objective 42</p>	
Comment	Policy P146 seeks to provide opportunities for subdivision and infrastructure development to incorporate more sustainable outcomes. This may include solar orientation to take advantage of the free heat energy from the sun, or incorporate natural overland flowpaths as both infrastructure and a point of interest, without the cost of construction associated with contemporary infrastructure. This policy is in addition to Policy P155 which promotes low impact approaches to earthworks and land development.
Summary of benefits	The benefits of Policy P146 are that developments can make the most of 'free' natural processes/resource to facilitate good and more sustainable outcomes from a subdivision development.
Summary of costs	In some instances lesser allotment yields may result from integrating natural processes.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy P146 is efficient in that it enables the uses of natural processes to provide treatment for stormwater or potential energy sources.
Appropriateness	The Policy is appropriate in that it promotes the efficient use of natural resources, low impact development, and

	flexible infrastructure design.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of action is that where reticulated services are provided they are not utilised.</p> <p>The risk of inaction is the creating of unnecessary reticulated infrastructure, missed opportunities around sustainable uses of free natural processes, and not enabling some land to be developed where there are capacity issues within the urban boundary.</p>

Crime Prevention Through Environmental Design (CPTED)

Policy P147 Consider the principles of Crime Prevention Through Environmental Design (CPTED) when incorporating public open space into subdivision including passive surveillance, definition of public and private spaces, and access management.

Relates to Objective/s: New Objective 40, New Objective 41,

Comment	This policy is consistent the New Zealand Urban Design Protocol, to which the Wanganui District Council is a signatory. The way in which public space is integrated into the private realm (and vice versa) can significantly affect the perception of safety. This is best addressed at the subdivision stage where suitable provisions can be applied to ensure a suitable interface and layout.
Summary of benefits	In particular, the policy provides for increased perceptions of safety and community vitality. Reduction in criminal activity.
Summary of costs	Costs potentially arising from the Policy include more time spent on the design process. Additional resource may be required for measures such as additional lighting or increased access widths for pedestrian access.
Effectiveness	The Policy is considered to be effective in that is useful

	when assessing applications and setting conditions for subdivision consents.
Efficiency	Policy P147 is efficient as the actions it requires is more affordably integrated at the subdivision stage.
Appropriateness	The Policy is appropriate as seeks to achieve safe and good quality subdivision.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is that designs may be of poor quality and contribute to crime or antisocial behaviour.</p> <p>The risk of not acting is that spaces are created that create or exacerbate antisocial or criminal behaviour.</p>

Site suitability

<p>Policy P148 Require subdivision creating additional residential allotments to provide safe and stable building platforms suitable for residential development.</p> <p>Engineered building platforms</p> <p>Policy P149 Avoid the creation of new residential allotments that require significant additional engineering works prior to building development.</p> <p>Relates to Objective/s: New Objective 40</p>	
Comment	Historically the District Plan has been silent on what is expected from building platforms. Policy P148 sets down clear requirements. NZS 3604 2011 provides a basic standard for ground conditions for timber framed buildings, and therefore provided a useful reference point. Policy P149 supports P148 in that it wishes to prevent the creation of allotments that are complicated to build upon, or that require expensive and/or intricate engineering mitigation.
Summary of benefits	The benefits of Policy P148 is that allotments are made available that are easily developed and safe for residential land use. The benefits of Policy 149 are that sites that are complicated or unsafe to build upon are

	avoided.
Summary of costs	Some sites that are less suitable or complicated and/or expensive to build upon may no longer be able to be developed.
Effectiveness	The Policies are considered to be effective in that is useful when assessing applications and setting conditions for subdivision consents.
Efficiency	Policies P148 and P149 are efficient as suitable sites are identified early in the development process, as opposed to issues arising at the land use development stage.
Appropriateness	The Policies are appropriate as safe and suitable building conditions will be provided.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is that sites that can be built upon are removed from the market.</p> <p>The risk of not acting is the creation of uncertainty in terms of a suitable standard for allotments to build upon, the creation of unsuitable or unsafe building platforms, or requiring significant and expensive works to provide suitable ground conditions.</p>

Provide for network utilities

Policy P81 Provide for the establishment, maintenance and repair of network utilities to meet the needs of the community, in a manner that enables adverse environmental effects to be avoided, remedied or mitigated, including effects on natural, cultural and amenity values

Relates to Objective/s: Objective 17, New Objective 43

Comment	Policy P81 has been retained, but has had the commentary removed. The policy enables the development of network utilities, subject to the management of effects on the environment.
Summary of	The benefits of Policy P81 are the provision of network

benefits	utilities that are critical for the health and wellbeing of the community.
Summary of costs	The costs are likely to be minimal where the effects of network utilities are internalised, and that this policy has been operative for a long period of time without significant adverse effects.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy P81 is efficient as it enables establishes the ability to provide for network utilities.
Appropriateness	The Policy is appropriate as it enables and protects network utility infrastructure.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risks of acting are minimal as the effects arising from the policy are well established.</p> <p>The risks of not acting to retain the policy are the interruption of loss of the network utility services that maintain the health and safety of the community.</p>

Telecommunication, electricity and gas networks

Policy P150 Consider the requirements for telecommunication, electricity and gas networks in the assessment of land use and subdivision consents.

Relates to Objective/s: Objective 17, New Objective 43

Comment	Network utilities are critical elements for the health, safety and prosperity for the community. Discussions with network utility operators have indicated that there is a need to determine available supply early in the process. In particular, where service upgrades are required to meet new demand. The policy assists in establishing the availability and any additional restrictions or requirements with regard to the connection and reticulation of network utilities early in
---------	---

	the development process so that any requirements can be factored in by developers and network utility operators.
Summary of benefits	The benefits of Policy 150 are that it identifies prospective issues with the supply of network utility capacity early in the development process and encourages forward planning and joint approaches towards resolving any issues.
Summary of costs	The costs of Policy P150 may include any additional cost associated with any required upgrades to utilities by the developer where they are identified as being deficient in capacity to service a development.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy P150 is efficient in that it is less costly and complicated to identify the needs for network utilities early in the development process.
Appropriateness	The Policy is appropriate as is ensures safe and quality urban environments.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risks of acting may include the loss of development due to the identification of a lack of capacity in a utility.</p> <p>The risks or not acting may include a utility being compromised by additional development and failing.</p>

Springvale indicative Development Area

Policy P151	<p>Require all subdivision and development to be generally in accordance with the provisions of the Springvale Indicative Future Development Area to proceed generally in accordance with the provisions of the Springvale Indicative Development Plan to ensure that:</p> <p>a. Stormwater is managed comprehensively and not in an ad-hoc manner;</p>
--------------------	--

- b. The transport network is consistent with the Wanganui Urban Transport Strategy, and the indicative roading layout;
- c. Encourages connectivity of services and land uses with public open space;
- d. Quality urban design outcomes are achieved;
- e. Infrastructure is developed in a logical sequence, and generally design and located as shown on the Springvale Indicative Development Plan.

Conflict with Indicative Plan

Policy P152 Avoid development within the Springvale Indicative Future Development Area that:

- a. Is in conflict with the indicative transport layout and the stormwater management infrastructure, including ponding areas shown on the Springvale indicative development Plan;
- b. Results in ad-hoc, unconnected, and piecemeal infrastructure development.

Limited Development

Policy P153 Enable limited development within the area identified as within the Springvale Indicative Future Development Area that is zoned Rural Lifestyle only where:

- a. It directly adjoins existing areas of residential development and gains access from Kelsi Street;
- b. Servicing capacity has been identified as sufficient to service the scale of the proposed development;
- c. The development is generally in accordance with the the provisions of the Springvale Indicative Development Plan.

Relates to Objective/s: Objective 17, New Objective 40, New Objective 41, New Objective 42,

Comment	Policies P151, P152 and P153 are complimentary in that P151 set minimum matters that must occur from
---------	--

	<p>development, P152 is about avoiding activities that will compromise outcomes in the Springvale Indicative Future Development Area, and P153 enables the continuation of existing development, but within specific parameters. Policy P151 sets down what is expected from all development in the area, P152 what is explicitly to be avoided, and P153 what is currently enabled.</p> <p>The project managing the potential for future development within the Springvale area has not yet been completed. Significant additional work around the identification, funding, and provision of infrastructure is still to be finalised. Therefore, development has not been generally enabled within the Springvale Indicative Future Development Area.</p> <p>However, it is recognised that there is currently small scale and incremental development within the Springvale Indicative Future Development Area that may be accommodated by existing infrastructure. Therefore, this development may continue where the matters in both policies are met.</p>
<p>Summary of benefits</p>	<p>The main benefits from Policies P151, P152, and P153 are that extending existing development is enabled, but only to a degree that the outcome from any future development is not compromised, and without committing Council to investing in significant infrastructure upgrades over and above what is already available.</p>
<p>Summary of costs</p>	<p>The costs associated with the Policies are the forgoing of potential development opportunities, and the cost of investigations to meet the requirements of P151, P152, and P 153.</p>
<p>Effectiveness</p>	<p>The Policies are considered to be effective in that is useful when assessing applications for subdivision and land use consents.</p>
<p>Efficiency</p>	<p>Policies P151, P152, and P153 are efficient as they protect planned and potential infrastructure to service</p>

	the Springvale Indicative Future Development Area.
Appropriateness	The Policies are appropriate in that they achieves quality and efficient infrastructure and protects future connectivity of services.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is that capital works to service the Springvale Indicative Development Area may not proceed.</p> <p>The risk of not acting is that development proceeds at a scale or a manner that compromises the ability to the servicing corridors in the Springvale Indicative Development Plan to be implemented in the future.</p>

Springvale infrastructure allocation

Policy P154 Avoid any land use and/or subdivision development that allocates reticulated infrastructure intended to service the Springvale Indicative Future Development Area to other areas.	
Relates to Objective/s: Objective 17, New Objective 40, New Objective 41, New Objective 42	
Comment	Policy P154 is in addition to Policy P123 in that the Springvale Indicative Future Development Area is proposed to have specific infrastructure designed to meet the needs of the existing and future development area in Springvale, in particular a swale. This needs to be protected to enable the Springvale community to get the full benefit from it.
Summary of benefits	The benefits of Policy P154 include certainty in investment and supply of infrastructure to the Springvale area.
Summary of costs	Any perceived spare capacity may not be reallocated to other parts of the District that may be able to use it.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.

Efficiency	Policy 154 is efficient as it protects planned and potential infrastructure to service the Springvale Indicative Future Development Area.
Appropriateness	The Policy is appropriate in that it protects the serviceability for the area and protects infrastructure investment.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is some development may be prevented.</p> <p>The risk of not acting is capacity is used for other areas or activities not anticipated and additional investment is required to serve the Springvale area.</p>

Low impact earthworks and land modification

Policy P155 Promote low impact earthworks and land modification that results in minimal modification to landforms and overland flow paths.	
Relates to Objective/s: New Objective 40, New Objective 41, New Objective 45	
Comment	There have been issues in the recent past around the effects on poorly managed earthworks and land modification. Policy P155 addresses this in part, and also follows emerging best practice around minimising the amount of works and integrating natural features and processes into development. This policy is in addition to P146, which also promotes low impact approaches to infrastructure and subdivision development.
Summary of benefits	The benefits of Policy P155 are that natural systems can be retained, the cost of development may be reduced through the use of those natural systems, and a reduction in the cost arising from minimising the need for earthworks.
Summary of costs	The potential cost from Policy P155 may be a reduced lot yield from subdivision, However, this may not necessarily be the case.

Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy P155 is efficient as is minimised the amount of earthworks required for subdivision and land development.
Appropriateness	The policy is appropriate in that it achieves low impact development and earthworks.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is low in that it requires less work from developers. However, where allotment yields are reduced, there may be less incentive to develop.</p> <p>The risks of not acting are also adding additional costs to subdivision development by requiring significant earthworks. Further to this, additional capital expenditure may be required to replicated or address changes to natural processes such as overland flows.</p>

Effects of earthworks

Policy P156 Avoid earthworks and land modification that results in damage to property or significant nuisance effects.	
Relates to Objective/s: New Objective 40, New Objective 41, New Objective 45	
Comment	Earthworks and land modification have the potential to create a range of property damage and nuisance effects. These have occurred within the urban areas of Wanganui in the recent past. Policy P156 seeks to avoid the more significant effects of earthworks, as, in many instances, earthworks may be necessary. Included in the Plan is a reference to NZS 6803 : 1999, a National Standard around appropriate management of noise associated with earthworks and land modification.

Summary of benefits	The benefits of Policy P156 are that earthworks are still provided for, but damage to third parties property and the creation of significant nuisance effects are avoided.
Summary of costs	The potential costs of Policy P156 are potentially investing in new practices to manage the effects arising from earthworks.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy P156 is efficient as it provides a means to manage effects before they arise.
Appropriateness	The policy is appropriate in that it achieves low impact development and earthworks.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is that additional costs are added to development.</p> <p>The risk of not acting include ambiguity over what is expected from works, enforcement can only be taken after the fact, further loss of amenity and/or property.</p>

Maori values and earthworks

<p>Policy P157 Enable the incorporation of Maori cultural values and practices into large scale earthworks and land modification, and within areas of cultural significance.</p> <p>Relates to Objective/s: Objective O4, New Objective 40, New Objective 41, New Objective 44 and New Objective 45</p>	
Comment	Policy P157 seeks to enable Maori and Maori cultural values and practices to be provided for where large scale earthworks are proposed, particularly in areas that are likely to be sensitive.
Summary of benefits	The benefits of Policy P157 are that Maori are enabled to practice their traditional beliefs and become more involved with the resource management process. It is also possible that unknown archaeological sites may be identified prior to works beginning, therefore minimising

	any delay that may arise from gaining archaeological authority.
Summary of costs	There is potential for delays for development in more sensitive areas.
Effectiveness	The Policy is considered to be effective in that is useful when assessing applications for subdivision and land use consents.
Efficiency	Policy P157 is efficient as it provides a means to manage effects before they arise.
Appropriateness	The Policy is appropriate in that Maori cultural values are recognised.
Risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, rules, or other methods	<p>The risk of acting is that areas more likely to be sensitive to development area avoided by perception as opposed to any identified issue.</p> <p>The risk of not acting is that the matters in Part II of the Resource Management Act regarding Maori are not adequately addressed, and sites of significant and Maori beliefs and practices are compromised.</p>

Proposed Rules and Methods

Subdivision

The following methods have been identified as being suitable for achieving the relevant objectives and policies for the Residential Phase of the Plan Review.

Rules

The following outlines proposed changes to rules for Subdivision. Some of the rules will remain unchanged. These rules have proven to be effective in the past in achieving the relevant objectives and policies and it is anticipated that they will continue to do so in the future.

Controlled Activities - Rules

R260 Controlled Activities:	
The following are controlled activities in all zones:	
Boundary adjustments, subject to meeting the Performance Standards for the relevant zone.	
Conversion of cross lease allotments to freehold.	
Council retains control over following matters:	
1. The extent to which the amenity values of the surrounding areas are affected and compliance with the general subdivision Standards.	
Note: Applications subject to this rule shall be considered without service, public notification or written approvals from affected persons.	
Comment	Rule R260 specifies that activities provided for as a controlled activity but that fail to meet one or more of the performance standards, will be considered as a Discretionary Activity. This rule differs considerably from the Operative District Plan in that all subdivision was a Controlled Activity.
Summary of	Simple and uncomplicated process for low risk activities.

benefits	
Summary of Costs	Limited scope for managing unusual or out of the ordinary applications that fall under the Rule.
Effectiveness	Rule R260 is effective enables applications to be measured against the specific expectations outlined by the Plan.
Efficiency	Rule R260 is efficient as it clearly outlines the requirements, with minimal scope in which applicants have to address.
Appropriateness	The rule is considered to be appropriate as it meets the basic requirements set down by the Objectives and Policies.

Controlled Activities – Performance Standards

R265 Performance Standard - Boundary Adjustments

a. Boundary Adjustments shall comply with the following Standards:

- v. No additional number of titles shall result; and,
- vi. Existing allotments that comply with the minimum site area for the zone prior to the boundary adjustment should not be made non-compliant; and,
- vii. Existing allotments that do not comply with a minimum site area for the zone shall not be made less compliant; and
- viii. The allotments being adjusted must share a contiguous boundary.

Comment	Rule R265 are the specific standards that Boundary adjustments are required to meet at a controlled activity level. These are limited to matters of servicing and compliance with minimum allotments areas for the relevant zone.
---------	---

Restricted Discretionary Activities – Rules

<p>R261</p>	<p>Restricted Discretionary Activities:</p> <p>The following are restricted discretionary activities:</p> <p>a. Subdivision in the Residential Zone, Rural Lifestyle Zone, Neighborhood Commercial Zone, and Reserves and Open Space Zone unless otherwise stated.</p> <p>Council restricts its discretion to the following matters:</p> <ol style="list-style-type: none"> 1. the ability and the requirement for a proposal to meet all the relevant Subdivision and Infrastructure Performance Standards, Policies. 2. the ability of the proposal to meet the relevant General Urban Design Criteria, General and infrastructure specific Assessment Criteria. <p>Note: Applications subject to this rule shall be considered without service, public notification or written approvals from affected persons.</p>
<p>Comment</p>	<p>Rule R261 specifies that subdivision, other than boundary adjustments and conversions from cross lease to freehold titles, are provided for as a Restricted Discretionary activity, subject to meeting the relevant performance standards. This rule differs considerable from the Operative District Plan, which provided for most subdivision as a Controlled Activity.</p>
<p>Summary of benefits</p>	<p>The benefits of Rule R261 Include:</p> <ul style="list-style-type: none"> • Limited and more specific scope of matters to be addressed. • Flexibility in terms of outcomes for the developer and Council. • Retention of a process where no third parties or notification is required. • Conditions may be imposed to ensure outcomes are

	<p>specific areas.</p> <ul style="list-style-type: none"> • Inappropriate applications that can not be amended to avoid significant adverse effects on the environment can be declined.
Summary of Costs	<p>The potential costs of Rule R261 include:</p> <ul style="list-style-type: none"> • A slight increase in uncertainty. • Applications may be declined. •
Effectiveness	<p>Rule R261 is effective as it provides the scope through the activity status, associated standards and assessment criteria, and the built in flexibility to meet the outcomes desired by the Objectives and Policies of the Plan.</p>
Efficiency	<p>Rule R261 is efficient in that a consent is required as stipulated by the RMA, and the scope and matters which are required to be addressed are restricted.</p>
Appropriateness	<p>The rule is considered to be appropriate as the range of matters desired by the Objectives and Policies of the Plan can be achieved.</p>

Restricted Discretionary Activities – Performance Standards

Performance Standards

The following Performance Standards apply to all subdivision development unless otherwise stated:

R264 Performance Standard - Subdivision engineering basis

Subdivision and infrastructure design and construction shall be in accordance with NZS: 4404 2004 and the Wanganui District Council Engineering Document 2012. Where there is conflict between NZS 4404 2004 the Engineering Document prevails. The provisions in the District Plan shall prevail over both NZS 4404 2004 and the Supplement.

R266 Performance Standard - Existing Buildings

a. Any new boundaries created by subdivision shall be located such that any existing buildings comply with the rules of the relevant zone or that the appropriate land use consents have been obtained.

b. Subdivisions shall comply with the General Rules of this *Plan** to the extent that they are applicable. In particular, rules in the following plan sections apply:

- Rule R17 Natural and Cultural Heritage Resources
- Rule R18 Protected Trees
- Rule R19 Riparian Margins
- Rule R24 Transportation

R267- Performance Standard - Allotment Size

a. New allotments, including balance allotments, shall meet the requirements of the following table:

Table 1 Minimum net allotment area

Zone	Site Size Requirements - Net Site Area – Metres² (m²)
Rural Lifestyle	Minimum 5000m²
Residential	Minimum 450m²
Neighbourhood Commercial	None
Reserves and Open Spaces	None
Otamatea Development Overlay	Minimum 1000m²
Springvale Indicative Future Development Area	Refer to the underlying zoning
Sites Specifically for Network Utilities	No Minimum
Rural	10,000m² (1 Hectare)
All other zones	Allotments shall be of sufficient size and shape to contain an activity or development in a manner that

	complies with the rules and standards for the zone concerned.
--	---

b. In all other zones without a minimum lot size, allotments shall be of sufficient size and shape to contain an *activity** or development in a manner that complies with the rules and standards for the zone concerned.

R268 Performance Standard - Easements

a. Where private service connections, the diversion of overland flows, and vehicle access will be located over private property, including the diversion of overland flowpaths, subdivision shall be required to provide suitable easements in respect of any of the following:

- i) the creation of right of way access to any allotment
- ii) the right in respect of a dominant tenement or easement in gross to lay, construct, erect, convey, discharge or maintain an underground or overhead water, electric power, telecommunications, gas, sewage, or stormwater service; widths shall be in accordance with the requirements of NZS 4404 2004 and the Wanganui District Council Engineering Document 2012 unless stated in this Plan.
- iii) any other easement that the specific situation may require.

R269 Performance Standard - Site suitability

a. Each allotment intended to accommodate building development in the future shall identify at least one potential Building Platform that meets the following:

- iv. The Building Platform shall be a rectangular area of land for building purposes measuring no less than 10 metres by 15 metres;
- v. For subdivision in Zones that require on-site effluent disposal shall also be required to identify an area of no less than 30 metres by 30 metres suitable for on-site effluent disposal,

vi. For all other zones, identify an area suitable for the likely scale and nature of development.

b. In addition, the identified Building Platform shall be required to meet the following requirements:

vii. Shall be free of buildings and structures (where intended for future development), building restrictions, easements, yard setback requirements, or other restrictions to building; AND,

viii. Shall be identified on the proposed plan of subdivision, AND

ix. Shall not be subject to material damage by erosion, falling debris, subsidence, or slippage; AND,

x. Shall meet the requirements for 'Good Ground' for 'Conventional Residential Development' in NZS: 3604 2011 for standard timber framed buildings, AND,

xi. Exceed a minimum of one metre in height above subsurface groundwater at all times, AND

xii. Have the ability to achieve compliance with the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZCEP:34 2001) for the likely activities on any such allotment.

c. The following are exempted from identifying a Building Platform;

iv. Subdivision to create allotments for the sole purpose of accommodating network utilities, parks and open spaces, and roads;

v. Subdivision around existing buildings where no further development will result;

vi. Applications for boundary adjustments where no additional development will result.

d. The applicant's representative shall certify compliance with the above requirements, and shall include:

iii. A record of the level of consideration and investigations, if any;

iv. Any constraints on development that do not require specific foundation design;

e. Where ground conditions can not be certified as meeting the above, or where significant works or specific foundation design is required, a supporting geotechnical report from a suitably qualified and experienced professional shall be provided detailing the suitability of the site for the future intended development.

The report shall also outline any restrictions or conditions that may be required prior to the grant of a certificate pursuant to Section 224 of the Resource Management Act and any on-going restrictions after the issue of that certificate.

f. In addition to the above and subject to any other requirement of this Plan,

The design, and any necessary construction, of building platforms shall not result in the diversion of overland flows unless such diversions:

- iii. Are discharged into an approved stormwater system; or,
- iv. Approved by way of easements over all properties affected.

Note: 1. The above requirements are in addition to any requirement placed on development by the provisions of the Natural Hazards and Earthworks provisions of the District Plan and the requirements of Section 106 of the Resource Management Act.

Note 2: The onus is on the applicant to demonstrate the site is suitable for development without significant works in the first instance, prior to the issue of subdivision consent.

Note 3: Allotments that have been assessed pursuant to the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health are deemed to be suitable for the matters in which the Standard controls only.

R270 Performance Standard - Site serviceability

-

a. Each new allotment shall connect to reticulated water services (sewer, stormwater and water supply) excluding the Rural Lifestyle zone which shall be required to demonstrate it can provide those services within the proposed allotment.

Note: For the purposes of this rule, open drains and swales are considered reticulated stormwater services only where owned and maintained by the Wanganui District Council.

b. Where connections are required, these shall be provided to the allotment boundary in accordance with NZS 4404 2004 and the Wanganui District Council Engineering Document 2012 or alternative approved by way of the Alternative Design Procedure, prior to the issue of a Certificate pursuant 224 of the Resource Management Act.

c. Connections shall be provided underground, except that stormwater connections may be provided above ground where retention or attenuation measures are required or low impact design approaches are to be used.

d. For sites in the Rural Lifestyle Zone, applications shall:

- iii. Provide secure suitable non-reticulated levels of service for potable water supply, AND
- iv. Demonstrate the ability to comply with New Zealand Fire Service Fire Fighting Supplies Code of Practice 2008 SNZ PAS 4509:2008

Note: Connections for the discharge of trade waste are managed through the Wanganui District Council Trade Wastes Bylaw 2008

R271 Performance Standard - Network utilities

a. Electricity supply must be provided to each allotment in the Residential, Rural Lifestyle, Reserves and Open Spaces, Neighbourhood Commercial, and all Industrial and Commercial Zones.

In the case of power and telecommunications connections, Individual customer connections may be provided above ground where there is an existing overhead supply.

In commercial and industrial zones the supply shall recognise the operational requirements of the probable occupation and use.

b. Provision should be made to ensure that gas connections can be provided to each urban allotment, unless the network utility operator does not wish to supply that area.

c. Connections to telecommunications infrastructure including land line telephone and broadband fibre shall be required in all zones, except the Rural Zone. In urban areas this should be by means of an underground system wherever possible.

Note: Crown Fibre Holdings and UFB Partners may be required to install infrastructure. Developers should discuss the requirements of the subdivision with a representative of the relevant UFB Partner prior to lodging an application.

d. Design and construction of gas, telephone and electricity facilities shall be to the requirements and approval of the respective network utility operators. Design and construction shall recognise the operating access and service requirements of other adjacent utilities.

e. A compliance certificate shall be provided from the relevant network utility operator, stating that the design and construction of gas, telephone or electricity facilities is satisfactory in standard and level of service and that the network utility operator has undertaken to take over operation and maintenance of the facilities at no cost to *Council*.

R272 Performance Standard - Site access

- Rights of way and shared access

a. Each allotment and additional dwelling shall be required to be served by legal access to a formed legal road in accordance with the table below:

Table 1 – Legal accessway width

Access type	Number of potential household units	Minimum legal width – Metres (m)	
Single user	1	3.8m	
Shared accesses	1-3	3.8m	
	4-6	6.5m	
	7 and above	Road	

b. For additional dwellings, physical width is an area on a plan identified for access equal to the maximum potential household units for the allotment/s that is clear of buildings and structures, that meets the remaining access requirements of this Plan.

c. The legal width for subdivision, and physical width for additional dwellings, shall be clear of buildings, trees, or any other above ground.

d. Where there is more than one access the legal width requirement can be allocated between each access provided that access retains the ability to comply with this Plan.

e. The maximum number of household units, and potential household units, which may share a private access shall be no more than 6.

Note: Potential household units for a site will be calculated by dividing the allotment area by the minimum net site area for the zone less any area subject to physical constraints, easements, and existing or proposed Right of Ways. Where less than a whole number, the next lowest whole number will be used.

f. The construction of shared accessways and Rights of Way shall be required, but only for the actual number of dwelling units it shall serve, except that any vacant allotments in the Residential Zone shall be considered as one dwelling unit.

- Vehicle Crossings

g. Each new allotment shall be serviced by at least one formed vehicle crossing onto a formed legal road.

h. The design and construction of vehicle crossings shall be in accordance with the requirements of NZS 4404 2004 and the Wanganui District Council Engineering Document 2012 where Wanganui District Council is the Road Controlling Authority.

Note: All new or upgraded crossings are required to use the Wanganui District Council Corridor Access Request system, except that this shall not apply where Council is not the Road Controlling Authority.

Note: The design, location and construction of vehicle crossings onto State Highways are managed by the New Zealand Transport Agency.

h. Where subdivision and land use requires access to State Highways the applicant shall include in their application a written statement from the Road Controlling Authority approving that access to the satisfaction of the Subdivision Engineering Officer.

Note: The removal of street trees for the purpose of creating a vehicle crossing is not managed by the District Plan. The Parks and Property Department of the Wanganui District Council should be contacted whenever alteration or removal of a street tree is proposed or required.

- Roads

i. For the design and construction of roads refer to the infrastructure provisions.

R273 Performance Standard - Earthworks

In addition to the earthworks land use standards and rules, the following standards also apply for subdivision,

Subdivision in residential zones, earthworks and land modification shall not exceed the removal of topsoil for the purpose of establishing building platforms, construction of roads, and trenching and back filling ancillary to the installation of utilities and services.

Where land is being filled to a level that exceeds 0.5m in depth measured vertically:

- a) The area/s of cut and fill shall be identified on a Plan and As-Built drawings shall be supplied to Council prior to the issue of a Certificate pursuant to Section 223 or the Resource Management Act, and in accordance with the technical requirements of NZS 4404 2010 and the Wanganui District Council Engineering Document 2012.
- b) Where intended to be used as a building platform the fill shall be certified by a suitably qualified engineering professional as being suitable to meet the definition of 'good ground' required for timber framed buildings in NZS 3604 2011.

Note: The requirements of the Land Drainage Act 1908 still apply and should be referred to by anyone moving significant amounts of earth or altering overland flows.

Comment	<p>The subdivision Performance Standards have been completely rewritten. In particular, to ensure that all issues or relevant matters are flagged at an early stage in the process, and also to provide certainty in terms of what is expected from applications in some areas. Some of the standards have additional matters of flexibility that have been made into Assessment Criteria.</p> <p>The provisions are in two parts. The first is subdivision which addresses the basic needs for subdivisions and connections for land use activities to services. These will apply to all subdivision and some land uses which</p>
---------	--

	<p>require connections. The second part is reserved for subdivisions that create infrastructure to be vested in Council. This is assessed separately.</p> <p>The draft Otamatea Structure Plan report received by Council staff has incorporated a desk top study regarding the capacity of wastewater and stormwater infrastructure in the area. One of the recommendations includes control of development density to manage this issue. As no capital works have been approved to address capacity issues at this point, managing existing capacity around density is appropriate.</p>
<p>Summary of benefits</p>	<p>R264 Subdivision engineering basis</p> <p>What is expected is now clear in terms of which documents apply and provides a clear hierarchy. Engineering documents are now specifically referred to. NZS 4404 2004 is more directive than NZS 4404 2010. However, the Alternative Design Procedure provides the flexibility that the 2004 version of NZS 4404 lacks.</p> <p>R266 Existing buildings</p> <p>A specific reference is now made to what is expected from the location of boundaries in location to existing buildings.</p> <p>R127 Allotment size</p> <p>In particular, in the Rural lifestyle, Residential, and Otamatea Development Overlay now provide security in terms of managing the demands on infrastructure and capacity. By establishing minimum lot sizes for these sites there is a clear message sent that capacity is not infinite, and therefore no minimum lot size is not appropriate.</p> <p>R278 Easements</p> <p>Servicing for allotments will be provided for.</p> <p>R279 Site suitability</p>

	<p>There are more explicit requirements to indicate what is a suitable standard for building sites. Specific measures have been put in place regarding location, size, and soil performance.</p> <p>R270 Site serviceability Specific requirements around the timing and type of servicing connections are more specific. In particular ALL subdivision is required to provide connections prior to completion.</p> <p>R271 Network utilities Specific requirements around the timing and type of network utility connections are more specific. In particular ALL subdivision is required to provide connections prior to completion.</p> <p>R172 Site access Clearer, provisions that anticipates and provides for and enables future development, allows flexibility and only requires construction to the level of service required at the time.</p> <p>R273 Earthworks Enables identification of potential future building restrictions.</p>
Summary of Costs	<p>The costs of Performance Standard Rules R264, R266, R267R268, R269, R270, R271, R272, and R273 are as follows:</p> <p>R264 Subdivision engineering basis Given the flexibility built in to the engineering provisions, there are no significant costs.</p> <p>R266 Existing buildings Additional land use consents may be required to address new non-compliance with yard requirements.</p>

	<p>R267 Allotment size The yield that may be achieved by having no minimum lot size may be reduced. However, this is balanced by the potential costs on the community for non-cost recoverable capital expenditure on behalf of Council to provide for unplanned deficiencies in capacity of the infrastructure network.</p> <p>R268 Easements There are no significant costs arising from this standard that would not otherwise be required to secure access to roads and reticulated infrastructure.</p> <p>R269 Site suitability Specific work will be required to determine what is, or is not, suitable in terms of ground conditions. For sites that don't meet the basic standards a specific geotechnical report may be required.</p> <p>R270 Site serviceability The basic costs of securing connections. The costs are allocated to the subdivision developer by this provision, and not the building developer other than through the market costs of an allotment.</p> <p>R271 Network utilities The basic costs of securing connections.</p> <p>R272 Site access The costs of providing physical and legal access.</p> <p>R273 Earthworks Additional 'as built' type work required to identify areas of fill.</p>
Effectiveness	<p>R264 Subdivision engineering basis The rule is effective as it provides a clear set of</p>

provisions in order to meet the needs of the Plan, including the provision of flexibility.

R266 Existing buildings

The rule is effective as it provides a clear set of provisions in order to meet the needs of the Plan.

R267 Allotment size

The rule is effective as it sets down sustainable levels of development in relation to effects on the infrastructure network.

R268 Easements

The rule is effective as it provides a clear set of provisions in order to meet the needs of the Plan.

R269 Site suitability

The rule is effective as it provides a clear set of provisions in order to meet the needs of the Plan, particularly in securing safe and suitable building platforms.

R270 Site serviceability

The rule is effective as it provides a clear set of provisions in order to meet the needs of the Plan, particularly in securing suitable levels of servicing and clearly outlining when this is to occur.

R271 Network utilities

The rule is effective as it provides a clear set of provisions in order to meet the needs of the Plan, particularly in securing suitable levels of servicing and clearly outlining when this is to occur.

R272 Site access

The rule is effective as it provides a clear set of provisions in order to meet the needs of the Plan, particularly in securing legal and physical access to new

	<p>allotments.</p> <p>R273 Earthworks The rule is effective as it provides a clear set of provisions in order to meet the needs of the Plan.</p>
Efficiency	<p>Subdivision engineering basis Ambiguity is reduced and clear requirements are established.</p> <p>Existing buildings The provisions are easily understood and applied</p> <p>Allotment size Promoted the efficient use of infrastructure resources and provides a clear framework.</p> <p>Easements This is best and more affordably addressed at the subdivision stage.</p> <p>Site suitability Establishes what specific needs are required (if any) early in the development process. Provides clear requirements.</p> <p>Site serviceability Establishes what specific servicing connections are required (if any) early in the development process. Provides clear requirements.</p> <p>Network utilities Establishes what specific network utility connections are required (if any) early in the development process. Provides clear requirements.</p> <p>Site access Identifies and establishes specific needs in relation to</p>

	<p>access requirements early in the development process. Provides clear requirements.</p> <p>Earthworks Provides clear requirements.</p>
Appropriateness	<p>Subdivision engineering basis The provision is appropriate in that the outcomes from the rules are consistent with the Objective and Policies of the Plan in terms of infrastructure qualities, low impact development, and flexibility.</p> <p>Existing buildings The provision is appropriate in that the outcomes from the rules are consistent with the Objective and Policies of the Plan.</p> <p>Allotment size The provision is appropriate in that the outcomes from the rules are consistent with the Objective and Policies of the Plan in terms of quality infrastructure and managing infrastructure capacity.</p> <p>Easements The provision is appropriate in that the outcomes from the rules are consistent with the Objective and Policies of the Plan.</p> <p>Site suitability The provision is appropriate in that the outcomes from the rules are consistent with the Objective and Policies of the Plan in terms of providing safe subdivision.</p> <p>Site serviceability The provision is appropriate in that the outcomes from the rules are consistent with the Objective and Policies of the Plan in terms of providing safe suitable servicing.</p>

	<p>Network utilities</p> <p>The provision is appropriate in that the outcomes from the rules are consistent with the Objective and Policies of the Plan in terms of providing safe suitable servicing.</p> <p>Site access</p> <p>The provision is appropriate in that the outcomes from the rules are consistent with the Objective and Policies of the Plan in terms of providing safe suitable legal and physical access.</p> <p>Earthworks</p> <p>The provision is appropriate in that the outcomes from the rules are consistent with the Objective and Policies of the Plan in terms of providing safe subdivision.</p>
--	---

Restricted Discretionary Activities - Assessment Criteria

SPC 8 Subdivision and Infrastructure Assessment Criteria

Subdivision classified as restricted discretionary, discretionary or Non-Complying Activities will be assessed having regard to the following assessment criteria.

1. General infrastructure development criteria.

All Infrastructure design, construction, operation and maintenance shall be:

- a. Effective and efficient in meeting its functional purpose.
- b. Able to be maintained in an effective, efficient, and cost effective manner.
- c. Affordable to the community over the lifetime of the asset.
- d. Durable over the specified lifespan for infrastructure.
- e. Integrated with other infrastructure and land uses.
- f. Responsive to local conditions including hazards.
- g. Compatible with, and not compromise, the effectiveness of network utilities and other reticulated infrastructure, including parks and reserves.
- h. Generally and substantially consistent with any relevant

Servicing and/or Structure Plans.

- i. Compatible with existing networks and infrastructure.
- j. Designed taking into account the effects of climate change.
- k. Is resilient to natural hazards.
- l. Providing for infrastructure connectivity where development adjoins land identified for further development.

2. General Subdivision criteria.

- a. Engineering basis

All subdivision and infrastructure proposals shall be assessed against the ability to achieve compliance with requirements of NZS 4404 2004 as amended by the Wanganui District Council Engineering Document 2012, or alternative as approved by the Alternative Design Procedure.

- b. Easements – Private

All subdivision where infrastructure and network utility connections across private land shall be assessed against the proposals ability to achieve appropriate provision and legal protection of private connections to infrastructure and network utility services over private land.

3. Site Suitability

The following assessment criteria shall apply to all subdivision and infrastructure development and shall be assessed against the proposals ability to achieve the following:

- k. The provision of safe allotments free from inundation, slippage, erosion and subsidence suitable for their intended use;
- l. The provision of regular shaped allotments that do not constrain ease of development, with suitably sized building platforms appropriate for the use provided for within the zone.

- m. The requirement for a report from a suitably qualified and experienced person, if required, detailing the suitability of all allotments and any specific works that are required, that reflects the scope, nature, and complexity of the geotechnical issues and constraints facing the development site, and the intended future use;
- n. The requirement for any consent notices where required detailing and securing any specific and/or on-going requirements arising from any report on site suitability;
- o. The avoidance of the requirement for excessive engineering works, excluding specific foundation design and construction, after the issue of a Certificate pursuant to Section 224 of the Resource Management Act
- p. The maintenance of existing topography, significant natural features and existing hydrological flows as far as practicable.
- q. The identification of any part of a proposed allotment that has undergone significant construction or reconstruction including cut, fill, or that is subject to overland flows or natural hazards.
- r. The provision of suitable ground conditions for on-site waste water and stormwater disposal where on-site servicing is required by the District Plan.
- s. The identification of any specific and detailed requirements for low impact stormwater solutions including appropriate soil conditions, maintenance provisions and costs, and life cycle.
- t. Avoidance of potential encroachment into the requirements of the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZCEP: 34 2001) by future building development.

4. Site serviceability

All subdivision and infrastructure development that requires, and/or,

proposes to connect to reticulated water, wastewater and stormwater service shall be assessed against the proposals ability to achieve the following:

- Service connections
- e. Each allotment is provided with suitable connections to reticulated services that provide appropriate levels of service for water, wastewater, and stormwater.
- Infrastructure capacity
- f. Subdivisions that are required and proposes to connect to any and all relevant infrastructure catchments or systems proceeds only where:
 - i. there is available servicing capacity or supply for the anticipated total level of development by the proposed and anticipated future development within that catchment as provided for in the relevant zones.
 - ii. Subdivision does not use capacity intended for other areas (including upstream and down stream capacity or supply).
- g. Where there is not sufficient available servicing capacity or supply for the anticipated total level of development the proposals ability to provide for:
 - i. A suitable alternative method for servicing and associated connections that has been approved by way of the Alternative Design Procedure; AND/OR,
 - ii. The creation of supply or capacity in accordance with the requirements of this Plan, NZS 4404 2004 and the Wanganui District Council Document 2012 to service the proposal at the subdividers cost; AND/OR,
 - iii. On-site attenuation, retention or mitigation of peak and/or total flows to create pre and post development hydrological equilibrium where practicable in the case of

stormwater, OR,

- iv. Deferral of the completion of a proposal until such time as Council provides capacity where upgrades to any network is programmed.

- h. Compliance with the New Zealand Fire Service Fire Fighting Supplies Code of Practice 2008 PAS 4509:2008 for allotments with reticulated water, and the ability to comply for sites without reticulated water supply.

5. Network utilities

All subdivision development that is required to, and/or, proposes to connect to network utility services shall be assessed against the proposals ability to achieve the following:

- c. Connections to network utility services are provided to a suitable level of service.

- d. The avoidance of significant costs to connect to network utilities, including any requirement to provide for additional capacity, after the issue of a Certificate pursuant to Section 224 of the Resource Management Act 1991.

6. Site Access

All subdivision development shall be assessed against the proposals ability to achieve the following:

- Crossings and vehicle access

- g. Safe, practical and durable vehicle accessways/ right of ways and crossings.

- On-site manoeuvring

- h. The practical provision of forward egress onto Arterial Roads on the Roding Hierarchy.

7. Easements and Vesting – Public

The following assessment criteria shall apply to all subdivision where infrastructure and network utility infrastructure is being vested in Council and shall be assessed against the proposals ability to achieve the following;

- e. Sufficient land area vested and/or easements to provide efficient access to public infrastructure for operational and maintenance purposes.
- f. The requirement additional for additional vested land area or easement extent to accommodate factors such as topography and the location of other infrastructure to enable reasonable access to infrastructure for maintenance or operational purposes.

8. Catchment management

All subdivision and infrastructure development shall be assessed against its ability to achieve the following;

- c. The design, construction and operation of stormwater, water, and wastewater infrastructure takes a catchment based approach.
- d. Infrastructure provides for the maximum potential demand arising from the development the allotments, including future land uses as anticipated by the District Plan, unless that land is constrained by hazards.
- i. Where land is identified for future development higher in the catchment, infrastructure is:
 - iii. located in a manner that enables connections or extensions to that infrastructure in the future.
 - iv. provides for sufficient capacity for upstream extensions

where additional land is zoned for development higher up in the catchment.

- j. New and extended reticulation shall be compatible with upstream and downstream infrastructure.
- k. The identification of any downstream works required to cater for the proposed anticipated use of the allotments.
- l. Where capacity is constrained downstream in the catchment, the proposal either:
 - iv. Provides capacity by either performing the works required; or,
 - v. Provides a suitable alternative method approved by the Alternative Design Procedure; or,
 - vi. Provisions are made for Council to provide that capacity where works are proposed in an existing capital works programme

9. Consideration of Alternative Solutions

All subdivision and infrastructure development that does not use the solutions in NZS: 4404 2004 and the Wanganui District Council Engineering Document 2012, except where the Alternative Design Procedure, is used shall be assessed against the proposals ability to achieve the following:

- i. The design alternative proposed is functional with the subdivision layout proposed;
- j. The alternative does not constrain the ability for connectivity to infrastructure serving other land zoned for development, nor the ability of that land to be developed;
- k. The design alternative meets all the relevant general infrastructure and specific infrastructure requirements and criteria.

- l. Alternative solutions reflect industry best practice.
- m. In the case of design, alternative solutions are approved by the relevant network or infrastructure provider in which it will be.
- n. In the case of construction and materials, alternative solutions shall be approved by the relevant network or infrastructure provider in which it will be vested prior to an application for a certificate pursuant to Section 224 of the Resource Management Act being made.
- o. The required levels of service for infrastructure are maintained.
- p. The ongoing lifecycle needs costs of maintenance are comparable to those in NZS 4404 2004 and the Wanganui District Council Engineering Document 2012.

10. Infrastructure deferrals and bonding

- Crossing deferral
- b. Applications to defer the construction of vehicle crossings after the issue of a Certificate pursuant to Section 224 shall be approved entirely at Council's discretion. In addition the following shall also apply;
 - iv. The applicant shall be required to provide information to establish that either:
 - a. damage to the formation of the crossing will occur prior to the establishment of the land use served by the crossing; OR
 - b. there are multiple locations for a complying vehicle crossing available; AND,
 - v. A cash bond may be taken in lieu of works of an amount appropriate to the satisfaction of the Development Subdivision

Officer.

vi. This does not apply to crossings serving multiple lots or where there is only one location for a complying crossing, or for a crossing that has been approved in a specific location but does not comply.

b. Excluding vehicle crossings, where applications to bond or defer the construction of connections or infrastructure until after the issue of a Certificate pursuant to Section 224 these shall be approved entirely at Council's discretion. In addition the following shall also apply;

ii. The applicant shall be required to provide information to establish that either:

e. That damage to the infrastructure will occur prior to the establishment of the land use served by the crossing;
OR

f. In the case of vegetation and landscaping, that the subdivision is otherwise finished but is currently outside appropriate planting/growing season , AND;

g. Where the infrastructure is to be vested in another party, the approval of that party must be supplied.

h. A cash bond may be taken in lieu of works of an amount appropriate to the satisfaction of the Development Engineering Officer.

Comment

New subdivision Performance Standards have been created and split into two. The first is subdivision which addresses the basic needs for subdivision and landuse servicing connections. These will apply to all subdivision and some land use applications where servicing is required. This was discussed above. The second part is reserved for subdivision that create infrastructure to be vested in Council. These are the Assessment Criteria associated with the subdivision Performance Standards.

	<p>It is noted that there is some crossover with the infrastructure provisions.</p>
<p>Summary of benefits</p>	<p>1 General Infrastructure development</p> <p>The primary benefits of criteria (1) include the creating of a range of subdivision infrastructure that is high quality and responsive. This may result in reduced costs and the integration of land use and infrastructure.</p> <p>2 General subdivision</p> <p>What is expected is now clear in terms of which documents apply and provides a clear hierarchy. Engineering documents are now specifically referred to. NZS 4404 2004 is more directive than NZS 4404 2010. However, the Alternative Design Procedure provides the flexibility that the 2004 version of NZS 4404 lacks.</p> <p>3 Site suitability</p> <p>There are more explicit requirements to indicate what is a suitable standard for building sites. Specific measures have been put in place regarding location, size, and soil performance.</p> <p>4 Site serviceability</p> <p>Specific requirements around the timing and type of servicing connections are more specific. In particular ALL subdivision is required to provide connections prior to completion.</p> <p>5 Network utilities</p> <p>Specific requirements around the timing and type of network utility connections are more specific. In particular ALL subdivision is required to provide connections prior to completion.</p> <p>6 Site access</p> <p>Clearer, provisions that anticipates and provides for and enables future development, allows flexibility and only</p>

	<p>requires construction to the level of service required at the time.</p> <p>7 Easements and vesting Provides protection for reticulated and network infrastructure services and provides for maintenance.</p> <p>8 Catchment management Manages the whole of catchment and takes into account the effects of a proposal on the entirety of the system in which it operates.</p> <p>9 Alternative solutions Provides a clear process for developing alternative design solutions.</p> <p>10 Deferrals and bonding Ensures that a suitable level of protection and certainty is provided where infrastructure can not be constructed at the time of subdivision in some circumstances.</p>
Summary of Costs	<p>1 General Infrastructure development There is potential for additional costs of design and construction. However, this may not always be required.</p> <p>2 General subdivision Given the flexibility built in to the engineering provisions, there are no significant costs.</p> <p>3 Site suitability Specific work will be required to determine what is, or is not, suitable in terms of ground conditions. For sites that don't meet the basic standards a specific geotechnical report may be required.</p> <p>4 Site serviceability The basic costs of securing connections. The costs are allocated to the subdivision developer by this provision, and not the building developer other than through the</p>

	<p>market costs of an allotment.</p> <p>5 Network utilities The basic costs of securing connections.</p> <p>6 Site access The costs of providing physical and legal access.</p> <p>7 Easements and vesting Additional land may be required for access and maintenance purposes, potentially reducing allotment yield.</p> <p>8 Catchment management All the costs of a development will be internalised, meaning more of the true cost may fall on the developer.</p> <p>9 Alternative solutions Less certainty in terms of outcome when compared with conventional infrastructure.</p> <p>10 Deferrals and bonding Connections and infrastructure works may not be completed prior to development occurring, and /or development needs may change between the time of the taking of a bond and</p>
Effectiveness	<p>1 General Infrastructure development The provision provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, and quality and quantity of supply.</p> <p>2 General subdivision The provision is effective as it provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, and quality and quantity of supply including the provision of flexibility.</p>

3 Site suitability

The provision is effective as it provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular, in securing safe and suitable building platforms.

4 Site serviceability

The provision is effective as it provides a clear set of provisions in order to meet the needs of the Plan, particularly provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular, in securing suitable levels of servicing and clearly outlining when this is to occur.

5 Network utilities

The provision is effective as it provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular, in securing suitable levels of servicing and clearly outlining when this is to occur.

6 Site access

The provision is effective as it provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular, in securing legal and physical access to new allotments.

7 Easements and vesting

The provision is effective as it provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular, the protection of infrastructure from inappropriate landuses.

8 Catchment management

The provision is effective as it provides an assessment tool addressing specific matters that directly relate to the

	<p>Objectives and Policies of the Plan. In particular, providing for efficient use of infrastructure.</p> <p>9 Alternative solutions The provision is effective as it provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular, it can provide for low impact, flexible, and efficient use of existing infrastructure.</p> <p>10 Deferrals and bonding The provision is effective as it provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular, that infrastructure is provided to a suitable level of service.</p>
Efficiency	<p>1 General Infrastructure development The provision is considered efficient as it provides a clear set of provisions in order to meet the needs of the Plan, particularly in securing suitable levels of servicing and clearly outlining when this is to occur.</p> <p>2 General subdivision The provision is considered efficient as ambiguity is reduced and clear requirements are established.</p> <p>3 Site suitability The provision is considered efficient as it provides a clear set of provisions in order to meet the needs of the Plan, particularly in securing suitable building platforms.</p> <p>4 Site serviceability Establishes what specific needs are required (if any) early in the development process. Provides clear requirements.</p> <p>5 Network utilities The provision is considered efficient as it clearly</p>

	<p>establishes what specific network utility connections are required (if any) early in the development process. Provides clear requirements.</p> <p>6 Site access The provision is considered efficient as it identifies and establishes specific needs in relation to access requirements early in the development process. Provides clear requirements.</p> <p>7 Easements and vesting The provision is considered efficient as it protects the investment in reticulated infrastructure, reducing the costs of maintenance and repair.</p> <p>8 Catchment management The provision is considered efficient as it identifies specific issues with downstream infrastructure as part of the development process so capital works can be identified and attributed to specific developments and the people who benefit from any works required to pay.</p> <p>9 Alternative solutions The provision is considered efficient as it provides for a range of alternative solutions for the provision of infrastructure that may increase the development opportunities available and/or provide for less expensive methods of servicing.</p> <p>10 Deferrals and bonding The provision is considered efficient as it provides for deferrals of construction where works associated with the ongoing development of an allotment may destroy items such as crossings and curbs which subsequently have to be replaced.</p>
Appropriateness	<p>1 General Infrastructure development The provision is appropriate as it addresses matters that</p>

directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, and quality and quantity of supply.

2 General subdivision

The provision is appropriate as it addresses matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, and quality and quantity of supply including the provision of flexibility.

3 Site suitability

The provision is appropriate as it addresses matters that directly relate to the Objectives and Policies of the Plan. In particular, in securing safe and suitable building platforms.

4 Site serviceability

The provision is appropriate as it addresses matters that directly relate to the Objectives and Policies of the Plan. In particular, in securing suitable levels of servicing and clearly outlining when this is to occur.

5 Network utilities

The provision is appropriate as it addresses matters that directly relate to the Objectives and Policies of the Plan. In particular, in securing suitable levels of servicing and clearly outlining when this is to occur.

6 Site access

The provision is appropriate as it addresses matters that directly relate to the Objectives and Policies of the Plan. In particular, in securing legal and physical access to new allotments.

7 Easements and vesting

The provision is appropriate as it addresses matters that directly relate to the Objectives and Policies of the Plan.

	<p>In particular, the protection of infrastructure from inappropriate landuses.</p> <p>8 Catchment management</p> <p>The provision is appropriate as it addresses matters that directly relate to the Objectives and Policies of the Plan. In particular, providing for efficient use of infrastructure.</p> <p>9 Alternative solutions</p> <p>The provision is appropriate as it addresses matters that directly relate to the Objectives and Policies of the Plan. In particular, it can provide for low impact, flexible, and efficient use of existing infrastructure.</p> <p>10 Deferrals and bonding</p> <p>The provision is appropriate as it addresses matters that directly relate to the Objectives and Policies of the Plan. In particular, that infrastructure is provided to a suitable level of service.</p>
--	---

Discretionary Activities – Rules

R262 Discretionary Activities:

The following are discretionary activities:

- a. Any subdivision or infrastructure development that results in non-compliance with any Performance Standard or Standards unless otherwise stated.
- b. Subdivision within the Springvale Indicative Future Development Area, including boundary adjustments; in general accordance with the key infrastructure linkages and indicative roading layout, detailed in the Springvale Indicative Development Plan that gains access from Kelsi Street.
- c. Subdivision in the Residential Zone that does not meet the minimum net allotment size of 450m².
- d. Subdivision in the Otamatea that does not meet the minimum net allotment size of 1000m².

Comment

Given the Restricted Discretionary activity status for subdivision, failure to comply with any Performance Standards has been made a Discretionary Activity.

It is noted that there is an existing area of development within the Springvale Indicative Future Development Area. This has been determined to be of small scale and can have any risk managed through consent. This has been accommodated.

Rule R262 also identifies the status of subdivision where they fail to meet the minimum net allotment area in the Residential and Otamatea Development Overlay.

Summary of benefits

The benefits of Rule R262 Include:

- Existing development is enabled.
- Flexibility in terms of outcomes for the developer and

	<p>Council.</p> <ul style="list-style-type: none"> • Conditions may be imposed to ensure outcomes are specific areas. • Inappropriate applications that can not be amended to avoid significant adverse effects on the environment can be declined. • Development density can be increased where an infrastructure catchment can accommodate development.
Summary of Costs	<p>The costs of Rule R262 Include:</p> <ul style="list-style-type: none"> • Higher consenting requirements in terms of information and cost. • No certainty in terms of outcome.
Effectiveness	<p>Rule R262 is considered effective as it directly manages the matters that the Objectives and Policies seek, particularly in sending the message through status that those activities are not desirable.</p>
Efficiency	<p>Rule R262 is efficient as it enables existing development, and provides for additional development density where systems or solutions allow.</p>
Appropriateness	<p>The Rule is appropriate as it manages the infrastructure allocations, and assists in promoting the optimal use of infrastructure.</p>

Discretionary Activities - Assessment criteria

SPC 8 Subdivision and Infrastructure Assessment Criteria

11. Allotment sizes below the minimum

1. Subdivision to create allotments in the Residential Zone under the specified minimum allotment size, including those located within the Otamatea Development Area shall be required to demonstrate the following:
 - i. Suitable capacity is available for reticulated servicing for the proposed allotments in the servicing catchment or catchments in which the proposal is located, AND;

	<ul style="list-style-type: none"> ii. The proposal does not reduce the capacity or level of service available to service the remainder of land within the servicing catchment at a density development intended by this Plan, OR; iii. An approved alternative method of servicing that mitigates the effect of additional development density on reticulated infrastructure. <p>12. Subdivision in the Springvale Indicative Future Development Area</p> <ul style="list-style-type: none"> 1. All subdivision in the Springvale Indicative Future Development Area shall be required to demonstrate the following: <ul style="list-style-type: none"> i. Consistency with the indicative roading, stormwater, ponding infrastructure identified on the Springvale Indicative Development Plan. ii. The proposed subdivision directly adjoins, and is a logical extension to, existing development of residential scale and allotment size. iii. Sufficient existing capacity is available in the infrastructure catchment to provide for the scale of development proposed. iv. The proposed allotment sizes are of a residential scale. v. The provision of connectivity and linkages to roads and infrastructure shown in the Springvale Indicative Development Plan.
<p>Comment</p>	<p>The Assessment Criteria above relate to Rule R262 which identifies the status of subdivision where they fail to meet the minimum net allotment area in the Residential and Otamatea Development Overlay.</p> <p>It is noted that there is an existing area of development within the Springvale Indicative Future Development Area. This has been determined to be of small scale and can have any risk managed through consent. This has been accommodated.</p>
<p>Summary</p>	<p>of The benefits of SPC8 (11 and 12) Include:</p>

benefits	<ul style="list-style-type: none"> • Existing development is enabled. • Flexibility in terms of outcomes for the developer and Council. • Conditions may be imposed to ensure outcomes are specific areas. • Inappropriate applications that can not be amended to avoid significant adverse effects on the environment can be declined. • Development density can be increased where an infrastructure catchment can accommodate development.
Summary of Costs	<p>The costs of SPC8 (11 and 12) Include:</p> <ul style="list-style-type: none"> • Higher consenting requirements in terms of information and cost. • No certainty in terms of outcome.
Effectiveness	<p>SPC8 (11 and 12) is considered effective as it directly manages the matters that the Objectives and Policies seek, particularly in sending the message through status that those activities are not desirable.</p>
Efficiency	<p>SPC8 (11 and 12) is efficient as it enables existing development, and provides for additional development density where systems or solutions allow.</p>
Appropriateness	<p>The Assessment Criteria are appropriate as they manages the infrastructure allocations, and assists in promoting the optimal use of infrastructure.</p>

Non-Complying Activities – Rules

R263	Non-Complying Activities: The following are non-complying activities: a. All other subdivision in addition to R262(b) in the Springvale Indicative Future Development Area. b. Subdivision in the Rural Lifestyle Zone, excluding allotments within the Springvale Indicative Development Area that proposes to connect to or extend reticulated infrastructure including water, wastewater, and piped stormwater drains. c. Any subdivision or development that fails to comply with any Performance Standard and is not specified as provided for as discretionary activities.
Comment	<p>There are three parts to R263, the Springvale Indicative Future Development Area, subdivision in the Rural Lifestyle Area and non-compliance with specific Standards.</p> <p>The Springvale Indicative Future Development Area has much complexity involved with the provision of services. While a draft Springvale Structure Plan has been developed, this has not been discussed with the public, or adopted by Council. In particular, there are significant capital works required. However, there is funding set aside for the development of the drainage swale and extending Fitzherbert Avenue. This investment can be compromised by the provisions in the Operative District Plan, where there is no development density requirement.</p> <p>In addition, the costs of servicing and extending new infrastructure in a low growth environment, with a low 'pipe to property' ratio, and over such a broad area are not sustainable, particularly where servicing can be</p>

	achieved on-site.
Summary of benefits	<p>of</p> <p>The benefits of Rule R263 Include:</p> <ul style="list-style-type: none"> • An application would need to pass stringent tests to be granted. • Inappropriate applications that can not be amended to avoid significant adverse effects on the environment can be declined. • A clear message is sent that the types of activities proposed are generally not appropriate.
Summary of Costs	The cost of Rule R263 is that areas that may have been developed previously may be delayed until servicing is provided, or, in the case of the Rural Lifestyle Zone, not to the density it may have previously.
Effectiveness	Rule R263 is effective as it provide a clear Rule at an appropriate level of activity status to address the most high risk applications.
Efficiency	With regard to efficiency, R263 is efficient as it is unambiguous and sends a clear message that it is likely that applications that fall under this Rule are not expected to occur.
Appropriateness	Rule R263 is appropriate as it ensures a compact and affordable urban area with regard to infrastructure, and protects investment in infrastructure and allocations of infrastructure servicing and spending.

General Provisions

R24 General Rule - Transportation

The following rules apply throughout the district:

1. Permitted activities

The following are permitted activities throughout the District:

a. Any activity which complies with the following conditions and terms:

2. Conditions and terms

2.1 Parking

a. Every activity shall provide a minimum number of on-site parking spaces as specified in the following table:

Parking Standards

Activity	Car Parking Spaces Required
Residential activities	
Dwelling units	1 space per dwelling unit.
Residential care facilities	1 space per 5 beds plus 1 space per staff member.
Community activities	
Places of assembly	1 space per 10 seats or 3 per 100 m ² gross floor area where facility not intended for seating.
Pre-school and primary educational facilities	1 space per staff member
Secondary and tertiary educational facilities	1 space per staff member plus one space per 10 students over minimum driving age
Recreation facilities	1 space per 10 seats or 5 spaces per 100 m ² gross floor area where facility is not intended for seating.
Health care facilities	3 spaces per consultant room used by doctor/health specialist.
Hospitals	1 space per 5 beds plus 1 space per 2 staff.
Marae	1 space per 100 m ² gross floor area.
Commercial activities	
All commercial activities other than those specified below	2 spaces per 100 m ² gross floor area.
Supermarkets	5.5 spaces per 100 m ² gross floor area.
Restaurants	1 space per 4 seats plus 2 spaces per 100 m ² gross floor area.
Visitor accommodation	1 space per room/unit.
Service stations	5 spaces per service bay (1 space being the bay itself) plus 1 space per 100 m ² of gross floor area used for servicing vehicles plus 2 space per 100 m ² of gross floor area used for retailing.
Offices	3 per 100 m ² gross floor area.
Manufacturing activities	
Funeral Parlours	1 space per 10 seats.
Manufacturing activities	1 space per 100 m ² gross floor area or 1 space per 4 employees, whichever is greater.
Rural activities	
Retail activities in the Rural Zone	4 spaces per retail site.
Rural industry	1 space per 100 m ² floor area or 1 space per 4 employees, whichever is greater.

b. Interpretation of parking standards

- i. Where an activity is not listed, the number of car parking spaces to be provided shall be the standard for the activity which most closely resembles the proposed activity in terms of car parking demand.
- ii. In determining parking requirements, any fraction more than one-half shall be regarded as one space.
- iii. Where a parking standard is related to the number of staff or students on a *site**, the number to be used shall be the maximum number on-site at any one

time (i.e. at peak times).

c. Parking areas shall be designed and located so as to:

- i. promote use of the on-site parking area rather than the road side for parking,
- ii. minimise conflicts between traffic entering and leaving the *site**.

d. Any landscaping or screening of parking areas shall be designed and maintained so as to ensure visibility and safe access and egress between the parking area and the road.

2.2 Loading

a. Loading bays shall be designed and located so as to provide a safe position for loading and unloading of goods and providing access and egress without affecting any road or *service lane**.

b. Loading bays shall be designed and located so as to:

- i. promote use of the loading bay rather than the road side for loading and unloading of goods,
- ii. minimise conflicts between traffic entering and leaving the *site**.

c. The area of the loading bay(s) shall be sufficient in size to cater for the largest expected vehicle, plus manoeuvring space around that vehicle.

2.3 Property access

a. Each new allotment and additional dwelling shall be serviced by at least one formed vehicle crossing onto a formed legal road.

b. In addition to a. above,

- i. For new dwellings being served by a shared accessways and Rights of Way, these shall be required to be constructed to the width specified by this Plan

Note: All new or upgraded crossings are required to use the Wanganui District Council Corridor Access Request system, except that this shall not apply where Council is not the Road Controlling Authority.

Note: The removal of street trees for the purpose of creating a vehicle crossing is not managed by the District Plan. The Parks and Property Department of the Wanganui District Council should be contacted whenever alteration or removal of a street tree is proposed or required.

2.4 Design and formation standards:

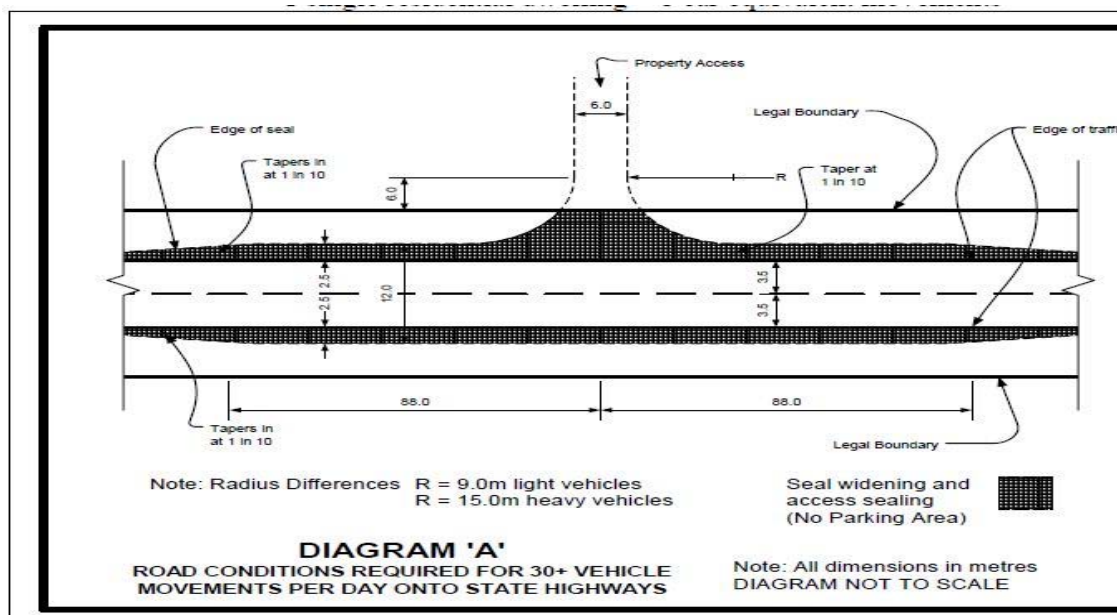
- a. All vehicle crossings shall be located, designed and constructed so that vehicles can enter and leave the *site** without adversely affecting the safe and efficient operation of the road.
- b. Vehicle crossings in the Residential Zone shall be a minimum of 3.5 metres and a maximum of 6 metres in width at the boundary perpendicular to road reserve.
- c. In respect of national routes, primary arterials and secondary arterials (as defined shown on the Planning Maps), vehicle access and egress shall be in a forward direction, with sufficient on-site manoeuvring space as required to achieve this.
- d. All vehicle crossings shall be designed and constructed so as not to adversely affect the safe and efficient operation of the road between the carriageway and the property boundary (including any services and drainage systems).
- e. All vehicle crossings shall be designed, constructed and maintained to ensure that they are formed and sealed (except for metalled roads in the Rural or Rural Settlement Zones) and to ensure that stormwater and detritus (including gravel and silt) do not migrate onto the carriageway pavement.
- f. The design and construction of vehicle crossings shall be in accordance with the requirements of NZS 4404 2004 and the Wanganui District Council Engineering Document 2012, except where a crossing design is specified in this Plan in which case that design will apply.
- g. Properties with a street frontage of up to 21 metres are permitted a maximum of 2 vehicle crossings per *site**

h. Properties with a street frontage over 21 metres are permitted a maximum of 3 vehicle crossings per *site**

g. New vehicle crossings, and existing vehicle crossings serving a new activity, shall meet the design standards in Diagram A when all the following circumstances exist:

- i.** The road is a National route, primary arterial or secondary arterial (as defined on the Planning Maps); and
- ii.** the road has a speed limit of 100 km/hr or more at the access location; and
- iii.** the activity concerned is a high traffic generating activity which, for the purpose of this standard, shall be defined as an activity which generates more than 30 car equivalent movements per day (24 hour period) averaged over a normal week, where:

- 1 car to and from the site = 2 car equivalent movements
- 1 truck to and from the site = 6 car equivalent movements
- 1 truck and trailer to and from the site = 10 car equivalent movements
- 1 single residential dwelling = 8 car equivalent movements



2.5 Separation distances

a. Vehicle crossings shall be required to meet the provisions of the following table:

Table 2 – Crossing Standards

Road Type	Minimum separation between crossings – Meters (m)	Minimum separation between crossings and intersections – Meters (m)	Minimum sightline distance - Meters (m)
Less than 70km and a Primary or Secondary Arterial Road	7.5m for residential uses 15 for all other uses	15m	50kph and 60kph zones - 100m
Less than 70km and not Primary or Secondary Arterial Road	None	10m 15m (where the intersection is with a Primary or Secondary Arterial Road)	None
More than 70km and Primary or Secondary Arterial Road	70km – 40 m 80km to 90km – 100 m 100km – 200m	100m	70kph to 90kph zones – 175m 100km zones – 290m
More than 70km and not Primary or Secondary Arterial Road	None	30m	None

b. The measurement of separation distances between crossings and intersections shall be taken from the nearest corner junction point of the road reserve boundaries at the intersection (or their projection in respect of “T” intersections) and shall be measured to the nearest edge of the access to the

intersection for roads where the posted speed limit is 70km/hr or less.

c. The measurement of separation distances between crossings and intersections shall be taken from the intersection of the centrelines of the intersecting roads for roads where the posted speed limit exceeds 70km/hr.

2.6 Restriction on new accesses

a. No new vehicle access shall be created from the following roads:

- Victoria Avenue between Taupo Quay and Ingestre Street,
- Guyton Street between Wicksteed Street and St Hill Street,
- Ridgway Street between Drews Avenue and St Hill Street,
- Maria Place between Watt Street and St Hill Street.

2.7 Vehicle crossings - other standards

a. Where an existing vehicle crossing to a property becomes redundant for any reason, then that vehicle crossing shall be removed and the berm, footpath, kerb and channel reinstated to a design and standard consistent with any adjacent berm, footpath, kerb and channel.

2.8 Service lanes

a. *Service lanes** shall be designed and located so as to provide safe access and egress without adversely affecting any road.

b. The width of *service lanes** intended for one-way operation shall be not less than 3.5 metres nor more than 6.0 metres.

c. The width of *service lanes** intended for two-way operation shall be not less than 6.0 metres nor more than 10.0 metres.

2.9 Vehicle queuing (stacking) and servicing

a. In relation to all:

- i. fuel dispensers,
- ii. ticket vending machines,
- iii. entrance control mechanisms,

there shall be sufficient vehicle queuing or stacking space to ensure that cars waiting at normal peak times do not obstruct the road carriageway or footpath.

b. For remote ordering facilities and devices, including fast food drive through facilities, a minimum of 5 queuing or stacking car spaces is required.

3. Discretionary activities

The following are discretionary activities throughout the District where the *Council** will restrict the exercise of its discretion:

- a. Any permitted activity which does not comply with the relevant conditions and terms. In exercising its discretion the *Council** shall be limited to the conditions and with which the activity fails to comply.

An application need not be notified if written approval has been obtained from every person whom the *Council** is satisfied may be adversely affected by the granting of the resource consent unless the *Council** considers it unreasonable in the circumstances to require the obtaining of every such approval.

Comment	There are several minor amendments to Rule R24 which include clarification on the provision of accesses, amendments to the crossing width provisions, and placing sight distance information into a table for improved readability.
Summary of benefits	The majority of the rule remains as is, with increased readability and workability of the provisions.
Summary of Costs	Negligible costs.
Effectiveness	The provisions are effective in that it ensures safe and efficient vehicle access.
Efficiency	The provision is considered efficient in that, particularly around crossing width, more flexibility is provided and there is less need for resource consent.
Appropriateness	The provision is appropriate in that it provides for safe and efficient access for allotments.

Methods Other Than Rules

The following other methods have been identified as being suitable for achieving any relevant objectives and policies:

M4 Levels of Infrastructure

Only provide reticulated water services to land contained within the urban boundary*

M304 Subdivision and Urban Design Guides

Develop a Subdivision and Urban Design Guide or Guides to assist Council and Developers integrate good urban design outcomes into developments.

M305 Low impact stormwater guide/manual

Develop a guide/manual to help developers successfully integrate low impact stormwater management solutions into development proposals.

M306 Developers forum

Establish and co-ordinate an ongoing forum for the development community to openly discuss 'big picture' policy issues around subdivision and development to monitor District Plan effectiveness on an ongoing basis.

CONCLUSION

None of the methods will singularly achieve the objectives and policies but rules clearly are the most appropriate in establishing controls to manage the adverse effects of activities reviewed as part of Phase Two of the District Plan review. A combination of the rules and non-regulatory method is likely to contribute to the control of adverse effects of activities.

Earthworks

The following methods have been identified as being suitable for achieving the relevant objectives and policies for the Residential Phase of the Plan Review.

Rules

The following outlines proposed changes to rules for earthworks. The District Plan has previously been silent on land use rules for earthworks and land modification. Therefore, all of the provisions are new to the Plan.

Permitted Activities – Rules

R274 Permitted Activities:

The following are Permitted Activities:

- a. Earthworks in the Residential, Rural Lifestyle, Neighbourhood Commercial and Reserves and Open space Zones, subject to meeting the Performance Standards.
- b. Earthworks required for piling, road maintenance or widening, trenching and back filling ancillary to the installation of network utilities and connections to water services.
- c. Earthworks for the establishment of water and effluent tanks, effluent disposal fields, domestic gardening and landscaping subject to the finished ground levels remaining the same.

Note: Works in close proximity to any electricity line or support structure can be dangerous. The Electrical Code of Practice for Electrical Safe Distances 34 : 2001 may apply and should be referred to. This Code is enforced by the Ministry of Economic Development, and compliance is mandatory.

Comment

The presumption in Rule R274 is that all earthworks are initially permitted, and will therefore not require consent. However, this is subject to compliance with a range of Performance Standards. Specifically, matters such as domestic gardening and infrastructure are also permitted

	also, but in some instances will not have the same range of Performance Standards to comply with.
Benefits	The benefits of Rule R274 Include: <ul style="list-style-type: none"> • Rule R274 is enabling, but does address key issues where necessary. • Provides control through Performance Standards as opposed to Rules.
Costs	Some activities will require resource consent where they do not comply with specific standards.
Effectiveness	Rule R274 is considered effective as it clearly articulates the expectations of the Plan.
Efficiency	The provision is efficient as it provides for good general information. In addition, no changes or additional requirements to the NES are proposed.
Appropriateness	Rule R274 is appropriate in that it meets provisions set above the District Plan.

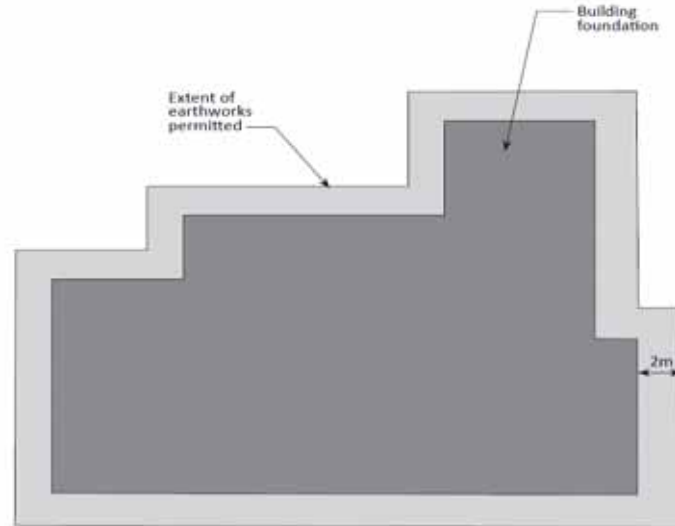
Permitted Activities- Performance Standards

R277 Performance Standards - Residential Zone and Rural Lifestyle Zone

Earthworks in the Residential and Rural Lifestyle Zones shall comply with the following:

- a. Earthworks shall not exceed what is required for the establishment of building foundations, boundary fences, and the formation of the initial accessway subject to the excavations not exceeding the extent of foundations by a maximum of 2 meters measured horizontally in accordance with Diagram 1.

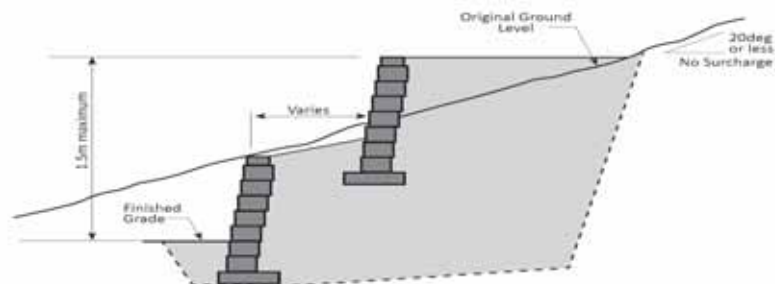
Diagram 1



b. Subject to (a) above, earthworks that do not exceed the lesser of 50% of the area of the site, or 500m². This is measured cumulatively across the subject site or sites of works.

c. The erection of retaining walls shall not either singularly or cumulatively, exceed 1.5 metres in height. (Diagram 2)

Diagram 2



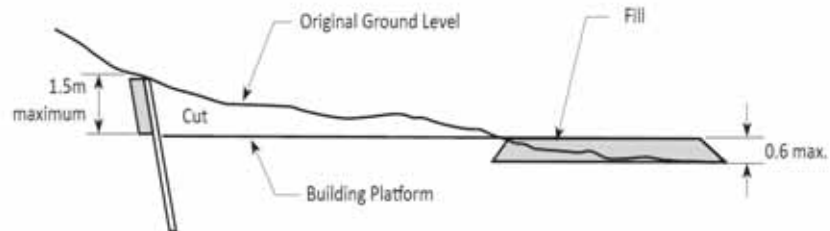
R278 Performance Standard – General

Earthworks in the Residential, Rural Lifestyle, Neighbourhood Commercial and Reserves and Open space Zones shall comply with the following:

a. Cuts shall not exceed 1.5 metres in height and fills below building platforms shall not 0.6 metres in depth measured vertically. Refer

a. Cuts shall not exceed 1.5 metres in height and fills below building platforms shall not 0.6 metres in depth measured vertically. Refer Diagram 1

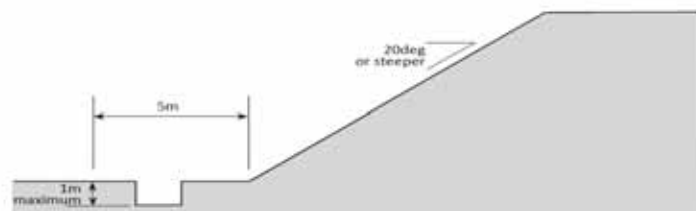
Diagram 1



b. Cuts or fills shall not occur on slopes exceeding 20°.

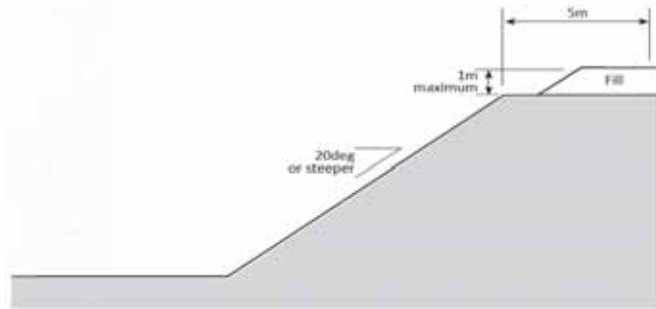
c. Cuts of greater 1.0 metre in height measured vertically shall not occur within 5.0 metres if a toe of a slope exceeding 20°. Refer Diagram 2

Diagram 2



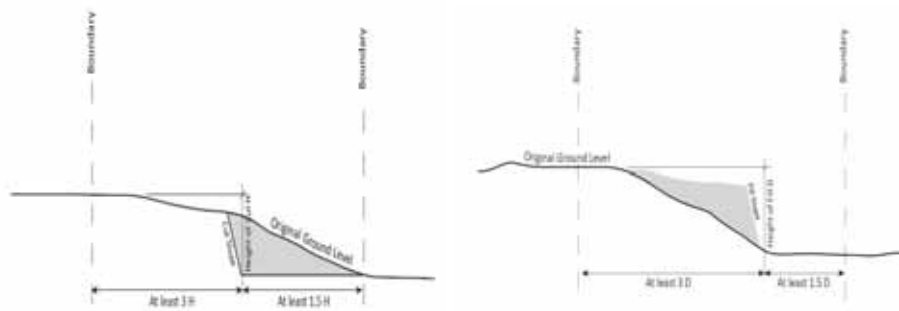
d. Fills greater than 1.0 metre in height measured vertically shall not occur within 5 meters of the top of a slope exceeding 20°. Refer diagram 3

Diagram 3



- e. The toe of a fill or cut slope shall be at least 3 times the depth/height of the slope from an upslope boundary and at least 1.5 times the depth/height of the slope from a downslope boundary. Refer diagram 4

Diagram 4



- f. Works shall not result in visible evidence of settled dust beyond the boundaries of the subject site to which the works relate.
- g. Any earthworks shall not alter overland flow paths, including swales and low impact stormwater devices, in a manner that causes damage to property through inundation, erosion, or subsidence.
- h. Any earthworks shall not cause excessive vibration on surrounding sites.
- i. Any earthworks shall not create, encourage, or exacerbate erosion or instability.
- k. Construction noise from a site in any zone shall not exceed the

limits recommended in, and shall be measured and assessed in accordance with, NZS 6803:1999 Acoustics Construction Noise.

Note: The requirements of the Land Drainage Act 1908 still apply and should be referred to by anyone moving significant amounts of earth or altering overland flows.

Comment	<p>Rule R277 and R278 differ in that R277 is more specifically focussed in managing works in the Residential and Rural Lifestyle Zones, and R278 has a broader approach to general matters arising from earthworks that may apply more universally.</p> <p>Included in the provisions is a reference to NZS 6803:1999 Acoustics Construction Noise, a voluntary National Standard that refers to appropriate noise management arising from earthworks and land development.</p> <p>In addition, the provisions were produced under the guidance of a soils engineer experienced in Wanganui ground conditions and land features. Therefore, the provisions are very specific to the needs of the District.</p>
Benefits	<p>The benefits from R277 include the explicit application of standards directly relevant to specific zones. In addition The benefits from R278 are that the standards apply more universally.</p>
Costs	<p>Both Rule R277 and R278 may require resource consent where compliance with their provisions are not met.</p>
Effectiveness	<p>The Rules are effective in that they now provide specific requirements which achieve the Objectives and Policies of the Plan.</p>
Efficiency	<p>The provisions are efficient in that clear benchmarks for performance have now been established.</p>
Appropriateness	<p>Rules R277 and R278 are appropriate in that they achieve the Objectives and Polices of the Plan in that they achieve low impact development, manage nuisance</p>

	effects, and provide for safe urban areas.
--	--

Restricted Discretionary Activities – Rule

R275 Restricted Discretionary Activities:

The following are restricted discretionary activities:

- a. Earthworks in the Residential Zone and Rural Lifestyle Zone that do not comply with a Performance Standard unless otherwise stated.

Council restricts its discretion to the following matters:

- 1. Discretion will be restricted to the ability of a proposal to meet all the relevant Policies, Performance Standards and Assessment Criteria.

Comment	Rule R275 generally applies to all Performance Standards except where there are effects on reticulated infrastructure. Given that the non-compliance may be specific, or within specific areas Restricted Discretionary as an activity status was considered appropriate.
Summary of benefits	<p>The benefits of Rule R275 Include:</p> <ul style="list-style-type: none"> • Limited and more specific scope of matters to be addressed. • Flexibility in terms of outcomes for the developer and Council. • Retention of a process where third parties or notification is still and option where the proposal requires it. • Conditions may be imposed to ensure outcomes are specific areas. • Inappropriate applications that can not be amended to avoid significant adverse effects on the environment can be declined.
Summary of Costs	The benefits of Rule R275 Include:

	<ul style="list-style-type: none"> • Limited and more specific scope of matters to be addressed. • Inappropriate applications can be declined.
Effectiveness	Rule R275 is considered effective as it enables specific areas of concern to be addressed, particularly where identified by key policies in the Plan.
Efficiency	Rule R275 is considered efficient as discretion in assessing and setting conditions is restricted to matters of non-compliance.
Appropriateness	The rule is considered to be appropriate as it promotes low impact and safe development as a result of earthworks as anticipated by the Objectives and Policies of the Plan.

Restricted Discretionary Activities – Assessment Criteria

C9 Earthworks

In relation to assessment of resource consent for earthworks or land modification AND subdivision consents, the following matters shall be considered.

- a. The maintenance of existing landforms, topography, and natural processes such as overland flows.
- b. The retention of topsoil on proposed allotments, including the amount that remains in-situ where practical.
- c. The avoidance or mitigation of cultural effects on Tangata Whenua where necessary, in particular, where there are large areas of excavations proposed, including the provision of:
 - i. cultural and/or archaeological assessments,
 - ii. enabling site access,
 - iii. appropriate site work observation and
 - iv. any other measures required to avoid effects on cultural and historic heritage by earthworks, where deemed necessary

- d. The avoidance of excessive noise.
- e. The avoidance of soil runoff as a result of earthworks including there placement of appropriate vegetative ground cover as soon as practical after works on part or the whole site are completed.
- f. The avoidance of discharging sediment from earthworks onto roads or into stormwater or wastewater infrastructure by the development and approval of a Sedimentation Management Plan that sets aside the methods used for managing the off-site disposal of soils prior to works taking place.
- g. Free of instability, erosion, rockfall or any other geotechnical hazards to provide a long term safe and suitable allotment appropriate for the intended future use after earthworks. This may include a requirement for:
 - i. A report, a where deemed necessary, in sufficient detail and with appropriate expertise that reflects the complexity of any risk associated with pre and post works and the suitability of ground conditions.
- h. The avoidance or mitigation of airborne dust by dust management measures, including specific works to are required to avoid or mitigate dust settling off site.
 - i. The mitigation or avoidance of excessive noise and vibration.
 - j. The avoidance of any actual or potential effect resulting from discharge of soil or other materials arising from earthworks onto any road or reticulated infrastructure.
 - k. Any effects on the integrity of existing infrastructure.

Specific Criteria

In addition to the matters above, discretion is also restricted over the following matters:

- Specific Standards

Where land is being filled a vertical height of more than 0.5 metres and intended for future development, or intended to be used as a future building platform:

- iii. The area/s of cut and fill shall be identified on a Plan and As-Built drawings shall be supplied to Council as soon as practicable after works have been completed in accordance with the technical requirements of NZS 4404 2010 and the Wanganui District Council Document 2012.
- iv. Where intended to be used as a building platform the fill shall be certified by a suitably qualified engineering professional as being suitable to meet the definition of 'good ground' required for timber framed buildings in NZS 3604 2011 as soon as practicable after the completion of the works.

Comment	Criteria C9 is a new criteria specifically for the earthworks provisions and Rule R275 in particular. However, it is also to be used in subdivision assessment where works require both subdivision and landuse consents.
Summary of benefits	The provisions are specific and need to be addressed as part of any consent under the relevant rules. The criteria clearly articulate what is required of an application.
Summary of costs	The matters in C9 are specific and provide little flexibility if other unintended effects arise.
Effectiveness	Criteria C9 is effective as they are specific matters of discretion that must be assessed through the resource consent stage.
Efficiency	The provisions in C9 are efficient as they are specific and only apply where resource consents are required.
Appropriateness	Criteria C9 is appropriate as it directs consenting to address matters of low impact development, inclusion of

	Maori values and practices, safe and stable building areas, and managing nuisance effects.
--	--

Non-Complying Activities - Rule

R276 Non-Complying Activities:

The following activities are non-complying activities:

- a. Earthworks that do not comply with a Performance Standard or Standards that specifically states failure to meet that standard is a Non-Complying Activity.

Note: Quarrying is excluded from the provisions of this section.

Comment	There is only one Performance Standard to which Rule R276 relates. This refers to the discharge or materials either on to, or in to, infrastructure.
Summary of benefits	The provision protects infrastructure from damage by poorly controlled earthworks, and provides a tool for enforcement. Rule R276 also places trust in those who are carrying out works in the first instance that compliance will be achieved without first requiring consent.
Summary of Costs	Rule R276 may require additional mitigation works are required to ensure that, as a result of works, earthworks does not damage infrastructure.
Effectiveness	The provision is effective in protecting infrastructure in that there is a rule that is enforceable.
Efficiency	Rule R276 is efficient as it allows development to proceed without consent, until such time as an issue evolves.
Appropriateness	Rule R276 is appropriate as it protects the effectiveness of infrastructure from the adverse effects of inappropriate activities.

Non-complying Activities - Performance Standards

R278 Performance Standard – General

Earthworks in the Residential, Rural Lifestyle, Neighbourhood Commercial and Reserves and Open space Zones shall comply with the following:

j. There shall not be any discharge any materials such as soils, sediment or vegetation into reticulated infrastructure or onto roads as a result of earthworks. Non compliance with this Standard shall be deemed a Non-Complying Activity.

Comment	This is the Performance Standard one Performance Standard to which Rule R276 relates. This refers to the discharge or materials either on to, or in to, infrastructure.
Summary of benefits	The provision protects infrastructure from damage by poorly controlled earthworks, and provides a tool for enforcement. Rule R278 also places trust in those who are carrying out works in the first instance that compliance will be achieve without first requiring consent.
Summary of Costs	Rule R278 may require additional mitigation works are required to ensure that, as a result of works, earthworks does not damage infrastructure.
Effectiveness	The provision is effective in protecting infrastructure in that there is a rule that is enforceable.
Efficiency	Rule R278 is efficient as it allows development to proceed without consent, until such time as an issue evolves.
Appropriateness	Rule R278 is appropriate as it protects the effectiveness of infrastructure from the adverse effects of inappropriate activities.

General Provisions

<p>R259 General Rule - National Environmental Standards</p> <p>The provisions of the following National Environmental Standards for shall apply with no further alteration or modification by this Plan:</p> <p style="padding-left: 40px;">a. The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.</p> <p>Note: The above National Environmental Standard only applies to the actual or potential effects of contaminants in soil on human health. All other provisions within this Plan that do not manage the effects of contaminants in soil on human health apply.</p>	
Comment	Rule R259 is an earthworks related general rule that clarifies the position of the District Plan with regard to National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.
Summary of benefits	Rule R259 clearly articulates the relationship between the District Plan and the NES. In this instance, the District Plan does not propose to alter the matters which the NES addresses.
Summary of Costs	Given that the District Plan has minimal ability to make amendments or changes to the NES, there are no costs.
Effectiveness	The provision is effective in that it directs Plan users to the appropriate regulatory information without additional complication.
Efficiency	Rule R259 is efficient in that it clarifies the role of the NES but does not add any additional provisions around it.
Appropriateness	Rule R259 is appropriate in that it supports the central government regulation.

Methods Other Than Rules

The following other methods have been identified as being suitable for achieving any relevant objectives and policies:

M307 Earthworks best practice guide

Develop a 'best practice' guide for the undertaking of earthworks to assist in promoting low impact works.

M308 New Active monitoring

Actively monitor sites of significant and high risk earthworks for compliance.

M309 Tangata Whenua monitoring

Where appropriate, include Tangata Whenua in the monitoring of large scale earthworks.

CONCLUSION

None of the methods will singularly achieve the objectives and policies but rules clearly are the most appropriate in establishing controls to manage the adverse effects of activities reviewed as part of Phase Two of the District Plan review. A combination of the rules and non-regulatory method is likely to contribute to the control of adverse effects of activities.

Infrastructure

The following methods have been identified as being suitable for achieving the relevant objectives and policies for the Residential Phase of the Plan Review.

Rules

The following outlines proposed changes to the infrastructure Performance Standards and Assessment Criteria.

Infrastructure – Performance Standards

R279 Performance Standard - Subdivision engineering basis

Subdivision and infrastructure design and construction shall be in accordance with NZS: 4404 2004 and the Wanganui District Council Engineering Document 2012 (the Engineering Document). Where there is conflict between NZS 4404 2004 the Engineering Document prevails. The provisions in the District Plan shall prevail over both NZS 4404 2004 and the Engineering Document.

Note: The subdivision process is required to take an integrated approach to the development of infrastructure and land uses to achieve good urban design outcomes. The General Urban Design Criteria, General and infrastructure specific Assessment Criteria and the relevant Zone provisions should not be seen in isolation but should be read in conjunction with each other.

R280 Performance Standard - Servicing capacity

Where there is not sufficient capacity in the servicing catchment to provide the specified levels of service required the subdivider shall, at their own cost, undertake to provide that capacity to provide for their proposed development, or provide a suitable alternative solution.

R281 Performance Standard - Consideration of Alternative Solutions

a. Alternative infrastructure solutions to those in NZS:4404 2004 and the Wanganui District Council Engineering Document 2012 shall be required to use the Alternative Design Procedure.

Note: It is recommended that where a subdivision layout is based upon an alternative design that the applicant engages with Council and Asset Managers at the earliest possible opportunity for discussions around concept and design approval.

R282 Performance Standard - Easements

a. Infrastructure that is to be vested in Council shall be provided with easements in accordance with NZS 4404 2004 and the Wanganui District Council Engineering Document 2012.

R283 Performance Standard - Catchment Management Basis

a. The design, construction and operation of stormwater, water, and wastewater infrastructure shall take a catchment based approach and shall meet the following requirements:

iii. New infrastructure shall be adequate to meet the maximum potential demand arising from the development the allotments, including future land uses as anticipated by the District Plan.

iv. Proposals shall identify any downstream works required to cater for the anticipated use of the allotments.

R284 Performance Standard - Transport

a. Any applications for subdivision shall not include the creation of segregation strips or any other mechanism that:

v. Prevents access to any existing road or public pedestrian or cycle accessway, or;

vi. Prevents connections to a proposed road in the Springvale Indicative Future Development Area, or;

vii. Prevents land zoned for residential development from being developed to its anticipated potential;

viii. The above does not apply where the road controlling authority requires access to a road or public pedestrian or cycle accessway to be prevented for health and safety purposes, or where access would adversely affect the purpose of a road or public pedestrian or cycle accessway.

- b. Roding Hierarchy

i. All new roads shall be designed, constructed, and operate in accordance with its intended function within the Roding Hierarchy as shown in the District Plan Maps.

ii. Where new roads are not shown in the Roding Hierarchy the road design shall be clearly appropriate to its intended function within the overall roding network.

- c. Roding and stormwater

No road reserve shall be used as a secondary flow path, for attenuation or detention, or for low impact stormwater treatment unless approved by the Road Controlling Authority.

- d. Connectivity

An indicative future roding layout shall be identified on the plan of subdivision that identifies connections to existing or potential future road and cycle and pedestrian accessways that can comply with the provisions of this Plan

e. Frontage to Public open space

Public open space should be prominent and accessible, with a minimum of 40% of the length of the boundary having direct road frontage.

- f. Cycle and pedestrian accessways

Where pedestrian and/ or cycle accessways are required, they shall be formed and comply with the following requirements:

- ix. All pedestrian and cycle accessways shall be vested in Council.
- x. Be a minimum of 6 metres in width for its length.
- xi. Have suitable lighting at each entrance.
- xii. Where exceeding 60 metres in length, accessways shall be lit at intervals not exceeding 30 metres.
- xiii. Have a direct line of sight from each access point to the point of egress.
- xiv. Be secured at any entrance that has direct road access by bollards or other approved devices to prevent motor vehicles entering public spaces.

- g. Cul de sac roads

The following are specific requirements for the use of cul de sac roads in proposed subdivision layouts:

- i. Cul de sac roads shall not exceed 150 metres in length measured from the centreline of the roads intersection with the feeder road and the head of the cul de sac road.
- ii. A cul de sac shall not gain access off another cul-de-sac or terminating road unless there is no other physical or practical means of developing the related land.
- iii. A cul de sac shall, at the terminating head, provide an accessway for cycling and pedestrian access that:
 - a. Connects to another existing or proposed road, cycleway, or public open space, public facility or neighbourhood commercial zone, Or;
 - b. That reduces travel time to cycleway, or public open space, public facility or neighbourhood commercial zone, And;
 - c. Is located in the most efficient location to achieve the above.

- h. Street lighting

i. Street lighting shall be provided on new road reserve to ensure the safety of road users and pedestrians in accordance with NZS 4404 2004 and the Wanganui District Council Engineering Document 2012.

ii. All new street lighting fixtures shall:

d) be designed installed and maintained to minimise glare uplight and spill onto properties,

e) use energy efficient lamps

f) be of a standard design and construction.

- i. Entranceway features

All permanent entranceway features and/or structures for the purpose of promoting or branding a subdivision name shall be located entirely within private property and not within road reserve.

- j. Footpaths

Road and/or pedestrian connections between the land being subdivided, existing roads, adjoining properties, and balance lots shall be provided in accordance with NZS 4404 2004 and the Wanganui District Council Engineering Document 2012.

- k. Site frontage

The total number of allotments with no direct access onto road reserve including those with shared access with no frontage and rear allotments using access legs shall not exceed 20% of the lots in any one greenfield subdivision application.

- l. Landscaping

Landscaping shall be in accordance with the requirements of the road controlling authority. In the case of road reserve being vested in the Wanganui District Council this shall be in accordance with the Wanganui District Council Tree Policy 2008.

R285 Performance Standard - Stormwater

- a. Subdivision to create new stormwater infrastructure shall not require additional mechanical pumping stations.
- b. Post development stormwater run off rates shall not exceed those prior to development in catchments required to achieve hydraulic neutrality.
- c. New wastewater infrastructure shall not discharge stormwater into the wastewater network.
- d. The design capacity of any piped stormwater facilities shall be sufficient to accommodate the surface water flows resulting without relying on secondary flowpaths in accordance with the Table 1 below.

Table 1 Stormwater Design Requirements

Function	Annual Exceedance Probability (AEP %)	Return Period (years)
Primary Systems –		
- Rural	20	5
- Residential and rural residential areas	10	10
- Commercial and industrial areas	10	10
- All areas where no secondary flow paths are available	1	100
Secondary systems	1	100

- e. Secondary overland flow paths must cater for a minimum of a 1%

AEP storm event. Where this is not feasible, the piped system must perform that requirement.

Note: All discharges will need to meet the requirements of the Regional Council, including any relevant conditions of any applicable consent.

- f. Low impact stormwater treatment
 - i. Stormwater management and treatment shall avoid significant modification to natural drainage system and overland flow paths.
 - ii. Where low impact stormwater approaches including swales, rain gardens, and other mechanisms are proposed or required, these shall:
 - c) Be required to be approved by the Alternative Design Procedure, excluding the construction of the swale in the Springvale Indicative Future Development Area.
 - d) Meet the same performance requirements of conventional infrastructure.

- g. Parks and reserves

Areas to be vested in Council that are set aside for the purpose of accommodating stormwater flows shall not offset or replace any requirement for recreation reserves.

R286 Performance Standard - Water

a. Water supply shall meet the requirements of the Ministry of Health: Drinking Water Standards for New Zealand 2005 as updated in 2008.

b. In the Residential Zone fire fighting supply shall be provided in

accordance with the New Zealand Fire Service Fire Fighting Supplies Code of Practice 2008 SNZ PAS 4509:2008.

R287 Performance Standard - Wastewater

a. Applications for subdivision shall not include the development of new wastewater infrastructure that requires the installation of additional pump.

b. Wastewater systems shall not provide for the direct discharge of stormwater into the reticulated system.

Note: All discharges will need to meet the requirements of the Regional Council, including any relevant conditions of any applicable consent.

Comment

The infrastructure Performance Standards R279 to R287 applies to both subdivision and landuses which require the development of new infrastructure to be vested in Council.

The infrastructure Performance Standards have been introduced. In particular, to ensure that all issues or relevant matters are flagged at an early stage in the process, and also to provide certainty in terms of what is expected from applications in some areas. Some of the standards have additional matters of flexibility that have been made into Assessment Criteria.

The provisions are in two parts. The first is subdivision which addresses the basic needs for subdivisions and connections for land use activities to services. These will apply to all subdivision and some land uses which require connections. The second part is reserved for land uses and subdivision that creates infrastructure to be vested in Council. This is what being assessed here.

Much of what is covered addresses the strategic issues managing reticulated infrastructure as opposed to detail.

Benefits

R279 Subdivision engineering basis

Rule R279 clearly establishes what is expected in terms of infrastructure requirements, but also provides flexibility. The Rule sets down the overarching infrastructure regime.

R280 Servicing capacity

R280 will help to avoid development that creates issues with capacity in other parts of a servicing catchment. This enables costs to be allocated to those who benefit where capital expenditure is required to upgrade infrastructure.

R281 Consideration of alternative solutions

Rule R281 provides the flexibility to enable development where there are constraints in servicing, more appropriate and low impact servicing options, or where less expensive or quality urban design options can be accommodated outside conventional approaches.

R282 Easements

Site and development level servicing infrastructure is protected.

R283 Catchment management basis

Rule R283 is forward looking in that it reduces barriers to future development by providing for capacity and connections. The provision recognises that servicing infrastructure networks are a series of connections, generally sourced or discharged by common infrastructure. Therefore, what happens in one part of the catchment can affect another, even from seemingly disparate locations.

R284 Transport

Rule R284 facilitates connectivity, and provides a range of clear expectations.

	<p>R285 Stormwater Rule R285 articulates design performance requirements, and gives clear direction on low impact stormwater, levels of service, hydrological neutrality, and enables alternative servicing approaches.</p> <p>R286 Water The provisions clearly articulate the basic requirements.</p> <p>R287 Wastewater The provisions clearly articulate the basic requirements.</p>
Costs	<p>R279 Subdivision engineering basis Rule R279 may reduce flexibility to a minor degree.</p> <p>R280 Servicing capacity The costs of development will now fall on the developer where they may have fallen on the ratepayer in the past.</p> <p>R281 Consideration of alternative solutions Rule R281, while providing for flexibility, may reduce certainty.</p> <p>R282 Easements Rule R282 creates some uncertainty where additional land may be required for maintenance purposes in areas where topography may be constrained.</p> <p>R283 Catchment management basis Rule R283 will require developers to think and address servicing issues beyond a particular development. This may require the use of alternative solutions or capital expenditure in other parts of the catchment.</p> <p>R284 Transport There may be additional costs in terms of providing for connectivity.</p>

	<p>R285 Stormwater Rule R285 provides alternatives and directs when hydrological neutrality may be required. This may increase costs in terms of engineering input and costs of provision of infrastructure increases for some sites over what would be expected from contemporary infrastructure.</p> <p>R286 Water The only cost is the basic cost of servicing</p> <p>R287 Wastewater The only cost is the basic cost of servicing</p>
Effectiveness	<p>R279 Subdivision engineering basis Rule R279 is effective as it establishes a clear regime in terms of what is expected.</p> <p>R280 Servicing capacity Rule R280 is effective in ensuring sites are serviced and provides for alternative and low impact solutions.</p> <p>R281 Consideration of alternative solutions Rule R281 is effective in ensuring sites are serviced and provides for alternative and low impact solutions.</p> <p>R282 Easements Rule R282 is effective in ensuring infrastructure is protected and able to be effectively and efficiently maintained. .</p> <p>R283 Catchment management basis Rule R283 is effective in ensuring development servicing takes into account the needs of the entire catchment.</p> <p>R284 Transport Rule R284 is effective in providing for connectivity and safety.</p>

	<p>R285 Stormwater Rule R285 is effective in ensuring sites are serviced and provides for alternative and low impact solutions.</p> <p>R286 Water Rule R286 is effective in ensuring sites are adequately serviced to a suitable level of service.</p> <p>R287 Wastewater Rule R287 is effective in ensuring sites are adequately serviced to a suitable level of service.</p>
Efficiency	<p>R279 Subdivision engineering basis Rule R279 is efficient as it provides for standard solutions where desired, but also provides flexibility.</p> <p>R280 Servicing capacity Rule R280 is efficient as the costs fall on those who benefit.</p> <p>R281 Consideration of alternative solutions Rule R281 is efficient as it provides for the opportunity for improved and more efficient infrastructure solutions.</p> <p>R282 Easements Rule R282 is efficient as it assists in protecting vested infrastructure by enabling maintenance.</p> <p>R283 Catchment management basis Rule R283 is efficient as the potential effects of a development on the entire servicing catchments with which it is served can be assessed at the subdivision stage, rather when downstream issues occur.</p> <p>R284 Transport Rule 287 is efficient as it enables connectivity.</p>

	<p>R285 Stormwater Rule 287 is efficient as it maintains low costs for the development and maintenance of infrastructure.</p> <p>R286 Water Rule R286 is considered efficient as it refers to compliance with established Standards.</p> <p>R287 Wastewater Rule 287 is efficient as it maintains low costs for the development and maintenance of infrastructure.</p>
Appropriateness	<p>R279 Subdivision engineering basis Rule R279 is appropriate as it enables development that performance its function effectively.</p> <p>R280 Servicing capacity Rule R280 is effective as it ensures serviceability, but with flexibility.</p> <p>R281 Consideration of alternative solutions Rule R281 is appropriate as it enables flexible design options.</p> <p>R282 Easements Rule R282 is appropriate as it protects reticulated and network utility infrastructure.</p> <p>R283 Catchment management basis Rule R283 in that it ensures the efficient use of infrastructure and its continued effectiveness.</p> <p>R284 Transport Rule R284 in that it ensures the efficient use of infrastructure and its continued effectiveness.</p> <p>R285 Stormwater Rule R285 in that it ensures the efficient use of infrastructure and its continued effectiveness.</p>

	<p>R286 Water Rule R286 is appropriate as it ensures a suitable level of service to all development.</p> <p>R287 Wastewater Rule 287 is appropriate as ensures affordability in terms of the maintenance and operation of infrastructure.</p>
--	---

Infrastructure – Assessment Criteria

SPC 1 Transport Infrastructure Assessment Criteria

Design qualities

1. Transport corridors that are designed, constructed and maintained in a manner that:

- l) Is integrated with, and appropriate for, proposed or existing land uses.
- m) Provides safe and liveable places for living, working, and playing.
- n) Promotes connectivity, is highly permeable, and minimises travel distance.
- o) Provides visual amenity through appropriate layouts and landscaping
- p) Provides efficient and safe access to work, living, and recreational spaces
- q) Enables and provides for the functional requirements of network utilities.
- r) Promotes positive community interaction.
- s) Provides for meaningful choice in the mode of movement.
- t) Is consistent with the Wanganui District Roding Hierarchy and the Wanganui Urban Transport Strategy.
- u) Is accessible by all.
- v) Complements existing topographical features.

Design performance

1. Passage

Road Reserve widths shall be adequate to cater for all anticipated requirements inclusive of vehicle movements, cycle traffic, pedestrian traffic, vehicle parking, network utility operators, and landscaping. Road designs shall encourage vehicles speeds which are consistent with that which is desirable having consideration of the proposed level and type of activity and land uses being served and the physical environment in which they are located.

2. Safety

Road designs shall allow for the interaction of all road users and road usages to ensure that safety is maximised. Designs shall incorporate an adequate system of artificial lighting which is appropriate to its location so as to maintain safety through periods of darkness, avoid entrapment spaces, and promoted community safety through casual surveillance where adjoining accessways, public open space, and streets.

3. Access

The roading network shall provide vehicular access to all residential properties, goods and services access to all commercial properties and an appropriate level of heavy transport access to all industrial properties. Emergency services access shall be maintained to all areas. Discrete accessible footpaths shall be provided.

4. Parking

The roading proposal shall provide adequate parking both on and off the carriageway to cater for reasonable levels of residential, commercial and visitor parking, which will be required both as a consequence of land development and of access to other adjacent land areas which are, or might reasonably be expected to be, developed.

5. Function

The road* design shall be clearly appropriate to its intended function within the overall roading network in accordance with the Roding Hierarchy in the District Plan and the Wanganui Urban Transport Strategy, while taking into account adjoining land uses and the surrounding environment.

Where required, roads may form part of the stormwater management system. Roads should also promote community

interaction, and provide a sense of place.

6. Streetscape

In addition to being functional and safe, the road design shall aesthetically enhance and complement the land development through landscaping and street furniture and encourage community interaction and promote liveability. Streetscape should recognise the role of the road in the Roothing Hierarchy in the District Plan, the existing or proposed surrounding uses, and the surrounding environment.

7. Drainage

The road* design shall include provision for a low maintenance formalised stormwater drainage system which ensures that all trafficable areas, parking areas or pedestrian walkways are kept free of surface water and maintain a safe operating surface. Road Reserve may be used for attenuation, detention, as a secondary flowpath, by way of swale or other mechanism only where required and approved by the road controlling authority and the stormwater asset manager. Drainage shall be in accordance with the requirements of the stormwater provisions in this Plan.

8. Economic life-cycle costs

Road design shall provide a level of service which is appropriate to the District in general and the designated standard of the immediate area in particular, but which minimises the overall life-cycle costs. Life cycle costs shall include capital, finance, maintenance and rehabilitation cost. For the purposes of this criterion the life-cycle shall be taken as no less than 25 years. Maintenance through this period shall be those activities involved in a reasonable level of road* reinstatement, and not include capital works.

9. Compliance with other policy

Road design shall identify and provide for the outcomes arising

from other relevant policy from the future road controlling authority.
This shall include the following documents:

- The Wanganui Urban Transport Strategy
- Shared Pathways Strategy
- Wanganui Cycling Strategy
- Cycling Implementation Plan
- Wanganui District Council Tree Policy 2008

10. Urban design

All subdivision and infrastructure where new roads and accessways are required and/or created shall be assessed against the proposals ability to achieve the following;

- a. The design and layout of roading, footpath patterns, and layout of allotments retains and integrates the natural cultural, historical, topographic characteristics and other unique features of the area of the site and the design and layout of any adjoining urban areas.
- b. Road and/or pedestrian and cycle connections are provided between the land being subdivided, existing roads, adjoining properties and balance lots, unless unreasonably constrained by topography.
- c. An indicative future roading layout shall be identified on the plan of subdivision that identifies and promotes connections to existing or potential future road and cycle and pedestrian accessways that can comply with the provisions of this Plan
- d. Public open space is accessible prominent and accessible, with a minimum of 40% of the length of the boundary having direct road frontage.
- e. Pedestrian and/ or cycle accessways are located in the most direct and efficient location practicable.
- f. Discrete accessible footpaths, accessways and cycleways are

provided provided, unless one or more of the following apply:

- i. the intended density of *development** is low and not affordable for the community, AND/OR;
 - ii. the intended density of the surrounding *development** is low, AND/OR;
 - iii. the topography precludes the provision of a discrete accessible footpath, AND;
 - iv. No pedestrian or cycle link has been identified as being required in the Shared Pathways Strategy 2012, Cycling Strategy, Cycle Implementation Plan, or the Wanganui Urban Transport Strategy.
- g. Landscaping provides suitable high quality amenity in accordance with the Wanganui District Council Tree Policy 2008.
- h. Specimen trees are an appropriate species and planted in location that does not interfere with or damage underground or above ground infrastructure. Vegetation proposed to be planted in close proximity to electric lines should be selected and located in a manner that will not result in vegetation breaching the Electricity (Hazards from Trees) Regulations 2003.
- i. Street furniture is provided in a manner that promotes a high amenity urban space, community interactions, safety, and promotes a sense of place that is consistent with the adjoining uses and function of the road in the Rooding Hierarchy.
- j. Adequate and coordinated space for network utility services, in accordance with the requirements of the operators.

SPC 2 Water Infrastructure Assessment Criteria

Design qualities

1. The water supply system shall be designed, constructed and maintained in a manner that:

- a. Safeguards people from illness caused by infection from contaminated water
- b. Safeguard against injury or property damage arising from the operation of the system
- c. Safeguard people from loss of amenity arising from a water supply that is offensive in appearance or odour
- d. Provides adequate quantity and quality of supply of potable water for the reasonably foreseeable consumption, health and hygiene needs of people
- e. Conserves water by avoiding leaks and, where practicable, the use of water
- f. Provides adequate water supply for fire fighting in urban areas
- g. Contains sufficient storage for security of supply
- h. The upstream catchment is provided for and the downstream network has the capacity to provide for anticipated development

Design Performance

1. Quality

New components connected to the water supply in the urban water network, shall be capable of providing potable water to the point of connection for users at a quality grading of not less than Bb, complying with the requirements of public health standards and the City's asset management plan for the public water supply. Network water supplies to dwellings outside the urban water network shall provide water of quality which meets the appropriate drinking water standard.

2. Quantity

The water supply shall have the capacity to service the anticipated demand at adequate flow and pressure. For a reticulated supply the following shall be achieved:

- maximum working pressure - 90 m
- minimum working pressure at peak flows - 30 m
- minimum working pressure under firefighting flows - 15 m
- minimum available flow at point of supply - 15 litres per min.

A reticulated system shall provide both:

- flows equivalent to the Fire Service Code of Practice flow requirements plus two thirds of the peak daily consumption flow, and
- peak daily demand.

Peak daily demand for design shall be 1000 l/head/day.

The population served shall be based on not less than 3 persons per dwelling. Where *dwelling unit** density is not known, population may be based on 60 persons per hectare.

Industrial and commercial demands shall be specifically analysed for known or potential usage.

3. Firefighting

The water supply shall satisfy appropriate fire protection standards and maintain access for firefighting.

4. Storage

The water supply system shall have adequate storage capacity to allow for consumption as well as firefighting purposes, and to provide reserve supply for the calculated requirements of users.

5. Economic life cycle costs

Water supply systems shall be designed in a way which, while meeting other criteria, minimises the overall life-cycle costs inclusive of capital, operating, maintenance and rehabilitation costs. For the purposes of this criterion, the life-cycle shall be taken as no

less than 25 years.

6. Compatibility and durability

The water supply system shall use safe and durable materials which are compatible with *Council's** existing water supply systems and Schedule of Approved Materials. The system shall be constructed to prevent leakage and potable water contamination and to withstand anticipated pressures and loads.

7. Maintainable

Water supply systems shall be positioned so as to be easily located, provide reasonable access for maintenance and be constructed in a manner that enables easy isolation and replacement / repair of faults

8. Security

The water supply system shall have adequate valves, meters, alarms, looped pipe systems or other emergency provisions to minimise the risk and extent of loss of service, or contamination of supply due to failure, or to maintenance requirements.

Monitoring

The water supply system shall include adequate facilities for monitoring of system operation as part of management of the supply or for measurement of supply for charging. The monitoring system shall be compatible with the *Council's** preferred current system of monitoring.

SPC 3 Wastewater infrastructure Assessment Criteria

Design qualities

1. The wastewater system shall be designed, constructed and

maintained in a manner that:

- a. Safeguards public health from potential infection and contamination of natural ground water, water supply, and the soils
- b. Safeguards people from loss of amenity due to the presence of unpleasant odours or the accumulation of offensive matter resulting from wastewater and foul water disposal
- c. Promotes low impact development
- d. Minimises adverse effects on the natural environment.

Design Performance

1. Capacity

The wastewater system shall be capable of carrying and treating the peak flows anticipated during the economic lifecycle of the system, with due allowance for ground and surface water inflow and infiltration. Population density shall be based on proposed use but in no circumstance provide for less than a minimum of 45 persons per hectare or 3 persons per household for the urban area.

Reticulated design flows shall be not less than the following:

a. Domestic Flow

- g. Average dry weather flow (ADWF) - 275 litres/head/day
- h. Wet weather flow (WWF) - 1100 litres/head/day

b. Commercial and Light Industrial Flow

- Dry weather flow - 0.22 litres/sec/ha
- Wet weather flow (3 x ADWF) - 0.66 litres/sec/ha

c. Industrial Areas

- Specifically determined for the proposed use of the development

d. Retail and Suburban Commercial Areas

xv. ADWF = 0.25 l/sec/ha

xvi. WWF = 0.75 l/sec/ha

2. Discharge

Underground piped reticulation shall convey wastewater to an approved discharge point, in a manner that ensures good public health and minimises adverse effects on the *environment*^{*}.

There is separation of trade wastes from domestic wastewater within the reticulated urban area. In this area separate systems for trade wastes and for domestic wastewater will be required unless trade wastes are treated sufficiently to be accepted for discharge to the domestic wastewater stream.

3. Self cleansing

All wastewater systems shall be designed so that they are self cleansing with current or expected peak dry weather flows.

4. Treatment

No wastewater shall be designed in a manner that allows untreated effluent to be discharged to the *environment*^{*} unless it has first been treated to avoid the likelihood of contamination of soils, groundwater and waterways except as permitted under the Resource Management Act 1991.

5. Connection to collection network

Subject to complying with the conditions of *Council's*^{*} trade waste bylaws, wastewater sources may be connected to the public wastewater network.

Private wastewater systems, including septic tanks and privately owned and operated treatment plants, shall be considered on a case by case basis. They shall generally only be permitted where they achieve the least adverse effects on the *environment*^{*} (including consideration of economic life-cycle costs) and it can be

demonstrated that sustainable management systems are in place for their long term operation and funding.

6. Other demand

The wastewater system design shall demonstrate that the design has considered, and will allow for surplus capacity to meet expected future demand.

7. Restriction on discharge

Connection of stormwater drains may not be made to the wastewater system except under extraordinary circumstances. Systems shall be designed to eliminate the risk of inflow and infiltration.

The level of a gully trap for any new connection to the wastewater network shall be:

- at least 50 mm below the finished floor level of adjacent buildings
- at least 150 mm above the nearest opening in the wastewater network
- above the surface level of stormwaters with a 2% or greater probability of recurrence in any year (a 50 year storm)

8. Economic life-cycle costs

Wastewater disposal and treatment systems shall be designed in a way that minimises the overall life-cycle costs inclusive of capital, operating, maintenance and rehabilitation costs. For the purposes of this criterion, the life-cycle shall be taken as no less than.

a. Pipe work, appurtenances, all associated concrete work, tankage and detention structures: 80 years

b. Mechanical and electrical plant, with provision made for easy maintenance and replacement: 25 years

9. Compatibility and durability

The wastewater system shall use safe and durable materials which are compatible with their immediate surroundings, be constructed to eliminate the likelihood of leakage and infiltration and able to withstand anticipated pressures and loads.

Materials used in the wastewater system shall be compatible with *Council's** existing wastewater systems and approved Schedule of Materials.

10. Maintainable

Wastewater systems shall be positioned so as to be easily located, provide reasonable access for maintenance and be constructed in a manner that enables easy isolation and replacement / repair of faults.

11. Security

The wastewater system shall have adequate alarms, standby pump capacity, access points or other emergency provisions to minimise the risk and extent of loss of service due to failure, or maintenance requirements.

12. On site disposal

On site disposal systems shall not be used in the Residential Zone in other zones onsite disposal shall have no more than minor environmental effects which can be contained within the lot. They shall be designed to minimise maintenance needs. The design shall be based on field testing and any other site investigations needed to demonstrate that the effects on the environment of the system will be minor.

Independent network disposal (community based) systems shall have environmental effects equivalent or better in all respects with

that achieved by public reticulation and treatment, and shall be such that the effects of disposal remain entirely within the lot it is intended to serve or within the specified disposal area. They shall be designed to minimise maintenance needs. The design shall be based on field testing and any other site investigations needed to demonstrate that the effects on the environment of the system will be minor. Where a community system is proposed and, not to be vested in Council, there shall be adequate arrangements for the ongoing maintenance and operation of the system.

SPC 4 Stormwater Infrastructure Assessment Criteria

Design qualities

1. The stormwater disposal system shall be designed, constructed and maintained in a manner that:

a. Safeguards people from injury or illness from damage caused by surface water

b. Mitigates adverse effects caused by surface water on other properties

c. Protects the environment from accelerated erosion or sedimentation, and the effects of contaminants in stormwater discharges

d. Avoids excessive modification of natural drainage systems

e. Takes the effects of climate change into account

f. Conveys surface water to an appropriate outfall primarily using gravity

g. Adequately services each allotment, road area or other land area falling to the point of entry into the drainage system

h. The upstream catchment is provided for and the downstream

receiving network has the capacity to receive anticipated development

i. Avoids the discharge of stormwater to any wastewater sewer network

j. Integrates other infrastructure and land uses where practical

k. Utilises low impact design principles where necessary or desirable

Design Performance

1. Level of protection

The stormwater management system shall:

- Prevent, as far as is practicable, the regular flooding of property and the damage which results from such flooding as required by the following table:

Table 1 Stormwater Design Requirements

Function	Annual Exceedance Probability (AEP %)	Return Period (years)
Primary Systems –		
- Rural	20	5
- Residential and rural residential areas	10	10
- Commercial and industrial areas	10	10
- All areas where no secondary flow paths are available	1	100
Secondary systems	1	100

- Minimise, as far as is practicable, the regular and prolonged flooding of roadways unless they are permitted to be used as a secondary flow path by the infrastructure manager.
- Provide a level of service which in no circumstance is less than

that provided to the surrounding environment.

- Provide for potential upstream development of the stormwater catchment.
- Connect to reticulation only where there is downstream capacity to do so.

2. Protection of structures

The stormwater system shall provide a level of protection to *structures** from inundation based on the use and importance of the *structure**, but in no case less than the requirements of the NZ Building Code.

3. Control of flowpaths

Surface runoff shall be conveyed in suitable pipes, formed channels or defined water courses to approved discharge points.

4. Overland flow routes

New development and redevelopment projects shall be planned, designed and constructed so as to maintain or enhance the effectiveness of existing overland flow routes.

New development shall be planned, designed and constructed so that stormwaters cannot exceed a depth of 150 mm above kerb level before they are released overland to approved secondary flowpaths.

5. Safety

Stormwater systems shall prevent an undue risk to personal health and safety. Stormwater systems shall incorporate barriers or other measures to prevent people being carried into pipe systems by water flows, and to minimise the risks to individuals caused by excess ponding or water in open channels.

Open channels and surface drains shall be used only where peak flows do not cause an undue hazard or where because of the large quantities of stormwater involved, are needed for effective collection of surface water.

6. Development potential

The design of stormwater systems shall demonstrate that the design has considered and will ensure surface water is controlled without unduly restricting the reasonable development potential of land within the balance of the catchment.

7. Other demand

Stormwater systems shall allow for surplus capacity to meet existing or expected future demand.

8. Restriction on discharge

Connection of wastewater drains or other contaminated water may not be made to the stormwater system except under extraordinary circumstances.

9. Economic life-cycle costs

Stormwater systems shall be designed in a way which, while meeting other criteria, minimise the overall life-cycle costs inclusive of capital, maintenance and rehabilitation costs. For the purposes of this criteria, the life-cycle shall be taken as no less than;

- a.** Pipe work, appurtenances, all associated concrete work, tankage and detention structures: 80 years

- b.** Mechanical and electrical plant, with provision made for easy maintenance and replacement: 25 years

10. Compatibility and durability

Both open and closed stormwater system shall use safe and durable materials and be constructed to minimise the likelihood of leakage and infiltration and to withstand anticipated pressures and loads.

Materials used in the stormwater system shall be compatible with *Council's** existing systems and approved Schedule of Materials.

11. Maintainable

Stormwater systems shall be positioned so as to be easily located, provide reasonable access for maintenance and be constructed in a manner that enables easy isolation and replacement / repair of faults.

12. Limitation of peak flows

Stormwater systems shall provide for **source control** systems for stormwater runoff such as on-site soakage and detention or other measures to reduce peak flows as far as is possible.

13. No erosion

Stormwater systems shall ensure that the landform of water courses is stabilised such that the risk of erosion, debris or gravel blockage, inlet and outlet scour and land instability are minimised.

14. Climate change

The design, construction and operation of stormwater infrastructure shall incorporate design considerations allowing for the effects of climate change, including when assessing down stream capacity and the requirements of potential upstream discharges.

SPC 5 Earthworks Assessment Criteria

Note: Where land use consent is required for earthworks in conjunction with subdivision consent, the relevant land use assessment criteria shall also apply.

Design qualities

Earthworks shall be designed, constructed and maintained in a manner that:

- a. Promotes low impact development
- b. Safeguards health and safety of people and property.
- c. Minimises adverse effects on the natural environment and processes.
- d. Provides for cultural heritage.
- e. Avoids nuisance effects.

Performance Criteria

To improve the potential for development, *earthworks** proposals shall demonstrate that they meet the following criteria:

Design Performance:

1. Low impact development

Enabling minor works primarily for the installation of infrastructure and the minor leveling of building platforms.

The maintenance of existing landforms, topography, and natural processes such as overland flows while enabling

The retention of topsoil on proposed allotments, including the amount that remains in-situ where practical.

The avoidance of soil runoff as a result of earthworks including there placement of appropriate vegetative ground cover as soon as practical after works on part or the whole site are completed.

The avoidance of discharging sediment from earthworks onto roads or into stormwater or wastewater infrastructure by the development and approval of a Sedimentation Management Plan that sets aside the methods used for managing the off-site disposal of soils prior to works taking place.

2. Stability

To ensure stability of cut batters and fill batters created by *earthworks**, and of the earthfills and cut platforms themselves under static, live and seismic loading.

The avoidance of creating or exacerbating erosion or slope instability arising from earthworks, including the provision measures or works required for monitoring or securing stability and soils on-site.

3. Safety and suitability

To construct earthfills using a quality of material and standard of compaction which can demonstrably support anticipated building forms, as well as a reasonable assessment of possible future usage.

4. Aesthetically compatible

To ensure that the topography altered by *earthworks** is in keeping with the surrounding *environment**.

5. Serviceability

To construct *earthworks** so that modifications to ground levels do not adversely affect the capability of existing utilities to service the modified area, or surrounding ground. To avoid the diversion of stormwater from its natural catchment, the creation of increase flood risk or other hazards in consequence of *earthworks**.

The avoidance of any actual or potential effect resulting from discharge of soil or other materials arising from earthworks onto any road or reticulated infrastructure.

6. Cultural and heritage items

To ensure that *earthworks** do not impact on historical and *archaeological sites** and that areas of significant botanical importance or animal habitat are preserved.

The avoidance or mitigation of cultural effects on Tangata Whenua where necessary, in particular, where there are large areas of excavations proposed, including the provision of:

- i. cultural and/or archaeological assessments,
- ii. enabling site access,
- iii. appropriate site work observation and
- iv. any other measures required to avoid effects on cultural and historic heritage by earthworks, where deemed necessary

7. Security

The developer shall provide *Council** with a record of the works carried out by way of a Certification, verifying that the works have been completed to an agreed standard, from an independent qualified and suitably experienced professional engineer.

The ability of any new allotment to be free of instability, erosion, rockfall or any other geotechnical hazards to provide a long term safe and suitable allotment appropriate for the intended future use after earthworks. This may include a requirement for:

- i. A report, where deemed necessary, in sufficient detail and with appropriate expertise that reflects the complexity of any risk associated with pre and post works

8. Amenity

The avoidance or mitigation of airborne dust by dust management measures, including specific works to be required to avoid or mitigate dust settling off site.

The mitigation or avoidance of excessive noise and vibration.

SPC 6 Network Utility Assessment Criteria

1. Design qualities

1. The network utilities shall be designed, constructed and maintained in a manner that:

- a. Provides security of supply of basic utility services.
- b. Promotes electronic and digital connectivity.
- d. Is compatible with their adjoining uses.
- e. Minimises adverse effects on the natural environment and people.

2. Electricity supply

Electricity supply must be provided to each allotment within the urban area. This should be by means of an underground system In commercial and industrial areas the supply shall recognise the operational requirements of the probable occupation and use.

3. Gas and telephone connection

Provision should be made to ensure that gas, where proposed to be installed by the developer, and telephone connections can be provided to each urban allotment and, wherever possible, to each rural allotment. In urban areas this should be by means of an underground system ~~wherever possible~~ unless served by an existing aboveground structure.

4. Design and construction

Design and construction of gas, telephone and electricity facilities shall be to the requirements and approval of the respective network utility operators. Design and construction shall recognise the operating access and service requirements of other adjacent utilities.

5. Compliance certificate

A compliance certificate shall be provided from the relevant network utility operator, stating that the design and construction of gas, telephone or electricity facilities is satisfactory in standard and level of service and that the network utility operator has undertaken to take over operation and maintenance of the facilities at no cost to *Council*.*.

SPC 7 Streetscape and Landscaping Assessment Criteria

Design qualities

Streetscape and landscaping shall be designed, constructed, planted and maintained in a manner that:

- a. Provides amenity that appropriate for its location.
- b. Provides interest and comfort to public spaces.
- c. Contributes to a sense of community and character
- d. Provides street furniture that is sufficiently durable.
- e. Avoids conflict with network utilities and reticulated infrastructure.

Design Performance

1. Appropriateness

Planting and other landscaping shall be appropriate to and compatible with the local *environment**. Species selection shall be based on consideration of the following:

- ability to survive on the *site**
- sympathetic to the scale of the section and berm sizes
- consistent with neighbouring landscape features

2. Maintainable and durable

Planting and other landscaping features shall be easily maintained and minimise overall life cycle costs inclusive of establishment, maintenance and renovation.

In a traffic island, the subgrade shall be removed to the required depth.

3. Other services

Landscaping shall not cause, or potentially cause, interference or damage to roadways and utility services, or increase the costs of maintenance of those services. Vegetation proposed to be planted in close proximity to electric lines should be selected and located in a manner that will not result in vegetation breaching the Electricity (Hazards from Trees) Regulations 2003.

4. Reserve areas

Public land for reserves shall only be created where there is an identified need. Council reserves shall have appropriate legal protection in accordance with the Reserves Act 1977.

5. Amenity

The type, height and placement of planting in public areas should be such that it minimises opportunity for concealment, vehicle operators' vision, reduced sunlight penetration or other adverse effects on the use of adjacent land.

No planting or landscape feature shall obstruct traffic, pedestrian movement or traffic visibility.

6. Maintenance of landscaping

Appropriate maintenance of landscaping works shall be completed sufficiently to ensure planting and other landscaping is established and able to develop without assistance, for a period of 1 year.

7. Lawn areas

Prior to hand over, any lawn areas must be weed free and the surface evenly vegetated and readily mown. Appropriate ornamental species shall be used. (Pasture grass is unacceptable).

8. Street furniture

Provision of street furniture that:

- i Is durable
- ii Provides comfort
- iii Creates a point of interest in public spaces
- iv Encourages community interaction
- v Is safe for its anticipated use.

9. Design features

The development of streetscape and landscaping will avoid creating spaces that contribute to a feeling of a lack of safety. This includes the avoidance of the creation of places of entrapment and providing for passive surveillance of streets and public spaces.

Landscaping shall take into account the provision of natural light to the living and outdoor areas of residential properties in terms of appropriate location and species.

Note: If provision of fruiting trees is proposed this should be discussed with the Council's Parks and Reserves and Infrastructure Departments as to its appropriateness prior to an application for subdivision being made.

SPC 9 General Urban Design Criteria

Note: The level of assessment shall take into account scale, scope and complexity of proposal.

Purpose:

To provide for good quality design in infrastructure and subdivision in order to provide liveable human scale development.

1. Low Impact Development

Subdivision is required to compliment and retain natural features and processes in the first instance. In particular, development shall demonstrate how the application has:

- Retained vegetation which contributes to the overall amenity and character of the site and neighbourhood where possible, or mitigated the loss of pre development vegetation.
- Maintained hydrological balance or has mitigated post development runoff.
- Limited alterations to natural features and landforms to minimal scraping of topsoil to create building platforms and transport infrastructure.
- The extent to which stormwater treatment contributes to an attractive public realm or provides ecological value.

2. Context

Applications for subdivision shall demonstrate an understanding of the setting in which subdivision occurs by promoting:

- ⊃ The enduring aspects of site and district level focal points, including any significant vegetation, and natural and cultural landmarks and associations.
- ⊃ The integration of public parks, open space, amenities and community facilities.
- ⊃ Existing and proposed land uses (living, employment and recreation uses) and required movement networks.
- ⊃ Natural environmental processes and features such as hydrological flows, solar orientation, climate, topography and ground conditions.
- ⊃ The mitigation of downstream limitations on servicing infrastructure.
- ⊃ Subdivision that relates well to its surroundings, cultural

features, and makes use of existing features and amenities, such as the retention of trees and water features, view shafts, or good use of the rural interface to enhance the urban area.

3. Character

Subdivision design and construction shall demonstrate how character is maintained and enhanced by:

- ⊃ Retaining and utilising the existing natural and physical environmental features including trees, waterways, built and historic heritage, significant topographical features of the subject site and surrounding areas.
- ⊃ Protecting and enhancing built, cultural and visual landscape features, landforms and significant view shafts.
- ⊃ Respecting and integrating features of significance culturally and natural environmental processes.

4. Connections

The connectivity of a subdivision shall be demonstrated by:

- ⊃ The existence and use of green connections and corridors.
- ⊃ The degree of permeability of the roading layout.
- ⊃ The number of connections between the roading network, recreation spaces, other neighbourhoods and natural features.
- ⊃ The incorporation of multi modal transport options.
- ⊃ Implementing the Shared Pathways Strategy and Wanganui Urban Transport Strategy.
- ⊃ The convenience of a development to community infrastructure such as schools, shops, public open space and neighbourhood commercial zones.

5. Custodianship

Applications for subdivision shall identify how the proposal will have achieved custodianship by:

- ⊃ Demonstrating consultation and communication with the affected community including Iwi and interest groups.
- ⊃ Providing spaces that are places of community interaction and ownership including streets, recreational areas and focal points.
- ⊃ Enabling connections with places of value to the community.

6. Crime Prevention Through Environmental Design

Subdivision design shall illustrate how CPTED Principles have been implemented by promoting the following:

- Good visibility, sightlines and casual surveillance (overlooking) of public or publicly accessible spaces.
- Safe, direct routes and connections.
- Lighting and illumination that is appropriate to particular spaces and their anticipated uses.
- Avoidance of the creation of places of entrapment.

<p>Comment</p>	<p>These are the criteria that apply to subdivision and land use development where new infrastructure is required. The criteria have been streamlined in that the explanation or purpose statements removed.</p> <p>The infrastructure Performance Criteria SPC1 to SPC7 have been largely retained, with the addition of SPC8 for general subdivision and also SPC9 General Urban Design Criteria.</p> <p>The purpose of infrastructure has largely been amended to focus on design qualities. The three criteria with the most changes are SPC 1 Transport Infrastructure, SPC4 Stormwater, and SPC5 Earthworks.</p>
<p>Summary of benefits</p>	<p>SPC 1Transport SPC1 promotes connectivity, quality urban amenity, and positive community interaction.</p>

SPC 2 Water

The benefit of SPC2 includes the certainty of the establishment of specific and suitable levels of service anticipated for human health and safety. Also, these provisions have not been significantly altered, providing some level of continuity.

SPC 3 Wastewater

The benefit of SPC3 includes the certainty of the establishment of specific and suitable levels of service anticipated for human health and safety. Also, these provisions have not been significantly altered, providing a level of continuity.

SPC 4 Stormwater

SPC 4 has been more closely aligned with NZS4404 2010 in that a more catchment focussed assessment is undertaken, low impact solutions are provided for, and the design calculations align with current best practice.

SPC 5 Earthworks

SPC 5 includes more of a low impact approach to managing earthworks associated with infrastructure development. The provision also provides for the incorporation of Maori cultural values into the decision making process, along with the management of amenity values and nuisance effects on third parties.

SPC 6 Network utilities

The benefit of SPC6 includes the certainty of the establishment of specific and suitable levels of service anticipated for human health and safety. Also, these provisions have not been significantly altered, providing a level of continuity.

SPC 7 Streetscape and landscaping

The benefit of SPC7 includes the certainty of the

	<p>establishment of specific and suitable levels of service anticipated for amenity and comfort. Also, these provisions have not been significantly altered, other than to include a reference to the Electricity (hazards from Trees) Regulations 2003, therefore providing a level of continuity.</p> <p>SPC 9 General urban design</p> <p>The benefit of SPC9 includes the establishment of provisions to enable good quality urban development. This improves liveability, connectivity, community interaction and wellbeing, and may increase the value of a development.</p>
<p>Summary of Costs</p>	<p>SPC 1 Transport</p> <p>There are additional matters which developers are now required to consider in SPC1. This includes the provision of physical connections to recreational spaces and other roads, addressing a range of policies that were not previously addressed, and a range of urban design provisions that may increase development costs.</p> <p>SPC 2 Water</p> <p>The cost of SPC2 is the potential to be considered inflexible. However, this should be balanced against the provisions on the Plan that promote flexible solutions for infrastructure.</p> <p>SPC 3 Wastewater</p> <p>The cost of SPC3 is the potential to be considered inflexible. However, this should be balanced against the provisions on the Plan that promote flexible solutions for infrastructure.</p> <p>SPC 4 Stormwater</p> <p>The cost of SPC 4 is that levels of protection has changed and increased in some instances, and the potential complexity from developing low impact</p>

	<p>solutions.</p> <p>SPC 5 Earthworks The costs of SPC 5 include the requirement of specific works to avoid sediment and other foreign material entering into reticulated infrastructure networks.</p> <p>SPC 6 Network utilities There are no additional cost associated with the amended criteria that were not present in the Operative District Plan.</p> <p>SPC 7 Streetscape and landscaping The inclusion of the reference to the Electricity (Hazards from Trees) Regulations 2003 may limit the scope of planting, and therefore amenity, in some areas.</p> <p>SPC 9 General urban design The costs of SPC9 may increase the costs of developing infrastructure. However, this may not be strictly speaking always be true.</p>
Effectiveness	<p>SPC 1 Transport SPC1 is effective as it provides an assessment tool around specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, matters of good urban design, connectivity, efficiency and integrating infrastructure with land use.</p> <p>SPC 2 Water SPC2 is effective as provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, and quality and quantity of supply.</p> <p>SPC 3 Wastewater SPC3 is effective as provides an assessment tool</p>

addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, and quality and quantity of supply.

SPC 4 Stormwater

SPC4 is effective as provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, low impact development, and quality and quantity of service.

SPC 5 Earthworks

SPC5 is effective as provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, low impact development, and the integration of Maori cultural values into the development process.

SPC 6 Network utilities

SPC6 is effective as provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality network infrastructure for basic needs.

SPC 7 Streetscape and landscaping

SPC7 is effective as provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure and amenity, and also integrating landuse with infrastructure.

SPC 9 General urban design

SPC7 is effective as provides an assessment tool addressing specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure and amenity, integrating

	landuse with infrastructure, community safety, and liveability.
Efficiency	<p>SPC 1 Transport SPC1 will achieve efficiency through directing better connectivity.</p> <p>SPC 2 Water SPC 2 is considered efficient as it has been largely unmodified and currently achieves good outcomes.</p> <p>SPC 3 Wastewater SPC 3 is considered efficient as it has been largely unmodified and currently achieves good outcomes.</p> <p>SPC 4 Stormwater SPC 4 is considered efficient as it can provide suitable levels of service by way of alternative low impact means, without creating hard infrastructure.</p> <p>SPC 5 Earthworks SPC 5 is considered efficient as it aligns with the requirements of land use provisions, and it promotes lower levels of land modification, reducing the cost of development.</p> <p>SPC 6 Network SPC 6 is considered efficient as it has been largely unmodified and currently achieves good outcomes.</p> <p>SPC 7 Streetscape and landscaping SPC 6 is considered efficient as it has been largely unmodified and currently achieves good outcomes. The reference to the Electricity (Hazards from Trees) Regulations 2003 is efficient as trees planted during the subdivision stage may have to be removed at a later date.</p>

	<p>SPC 9 General urban design</p> <p>SPC 9 is considered efficient as it aligns with the requirements of land use provisions, and it promotes lower levels of land modification, reducing the cost of development.</p>
Appropriateness	<p>SPC 1 Transport</p> <p>SPC1 is appropriate in that it achieves the specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, matters of good urban design, connectivity, efficiency and integrating infrastructure with land use.</p> <p>SPC 2 Water</p> <p>SPC2 is appropriate in that addresses specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, and quality and quantity of supply.</p> <p>SPC 3 Wastewater</p> <p>SPC3 is appropriate in that addresses specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, and quality and quantity of supply.</p> <p>SPC 4 Stormwater</p> <p>SPC4 is appropriate in that addresses specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, low impact development, and quality and quantity of service.</p> <p>SPC 5 Earthworks</p> <p>SPC5 is appropriate in that addresses specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure, low impact development, and the integration of Maori cultural values into the development process.</p>

	<p>SPC 6 Network utilities</p> <p>SPC6 is appropriate in that addresses specific matters that directly relate to the Objectives and Policies of the Plan. In particular around the provision of good quality network utility infrastructure.</p> <p>SPC 7 Streetscape and landscaping</p> <p>SPC7 is appropriate in that addresses specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure and amenity, and also integrating landuse with infrastructure.</p> <p>SPC 9 General urban design</p> <p>SPC7 is appropriate in that addresses specific matters that directly relate to the Objectives and Policies of the Plan. In particular around good quality infrastructure and amenity, integrating landuse with infrastructure, community safety, and liveability.</p>
--	--

Methods Other Than Rules

The following other methods have been identified as being suitable for achieving any relevant objectives and policies:

M5 District Plan Maps showing—constraints of infrastructure services

Identify and map in the District Plan maps areas of infrastructure that are constrained with regard to capacity and have a limited or no further ability to cater for new development.

M302 Catchment Capacity

Council to assess and identify its infrastructure catchments and identify those that are nearing, at, or exceeding capacity. This information will then be used to review the boundaries and provisions for subdivision and development, including provision for mixed/high density development, in the Residential zone.

M17 Long term capital works development programme

Prepare a plan that co-ordinates the funding and construction of new infrastructure with identified areas of land for growth and the anticipated landuses.

M303 Transition to NZS 4404:2010

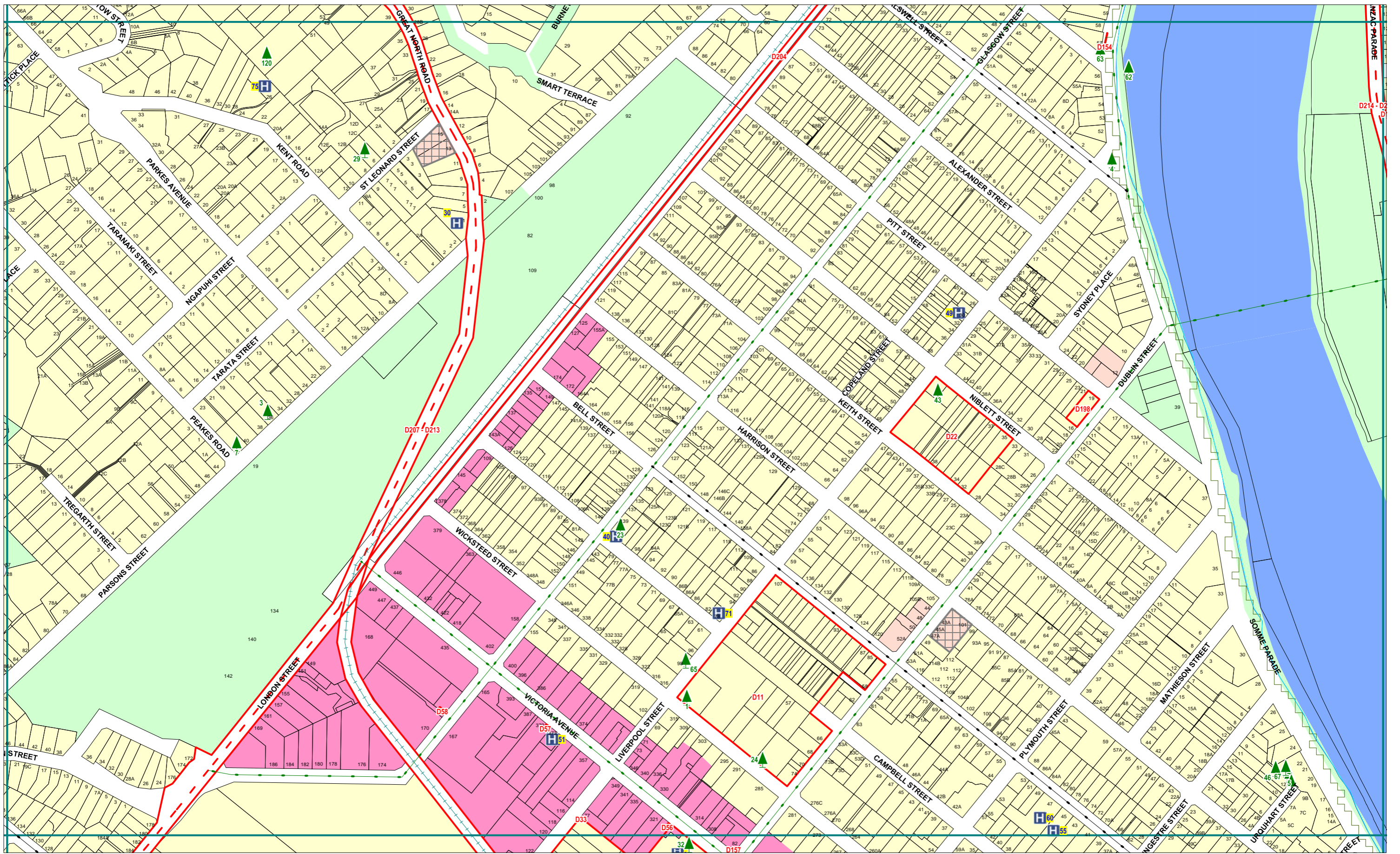
Develop a new companion document for NZS 4404:2004 incorporating appropriate material from NZS 4404:2010 until such time as a new document encompassing the content of the latter document can be programmed and resourced.

CONCLUSION

None of the methods will singularly achieve the objectives and policies but rules clearly are the most appropriate in establishing controls to manage the adverse effects of activities reviewed as part of Phase Two of the District Plan review. A combination of the rules and non-regulatory method is likely to contribute to the control of adverse effects of activities.

Appendix

Proposed amendments to Planning Maps



Wanganui District Planning Maps

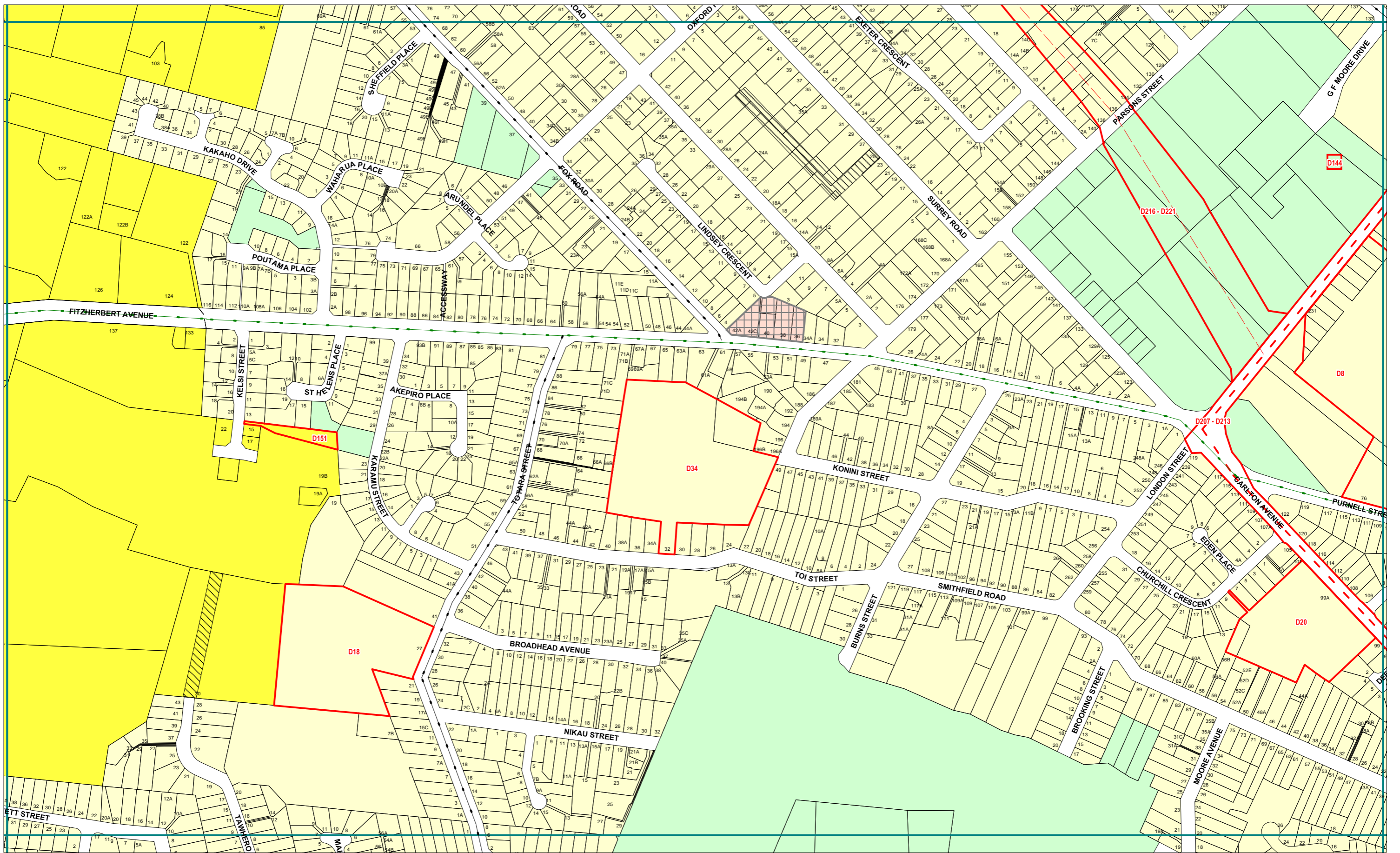
Scale 1:5,000 (Note: This scale is retained only if printed as A3)

© 2012 Copyright Wanganui District Council. Cadastral Information is derived from Land Information NZ Core Records System (CRS) CROWN COPY RIGHT RESERVED.

Draft Roading Hierarchy

Urban 15

	U9	U10
U14	U15	U16
U20	U21	U22



Wanganui District Planning Maps


Scale 1:5,000 (Note: This scale is retained only if printed as A3)

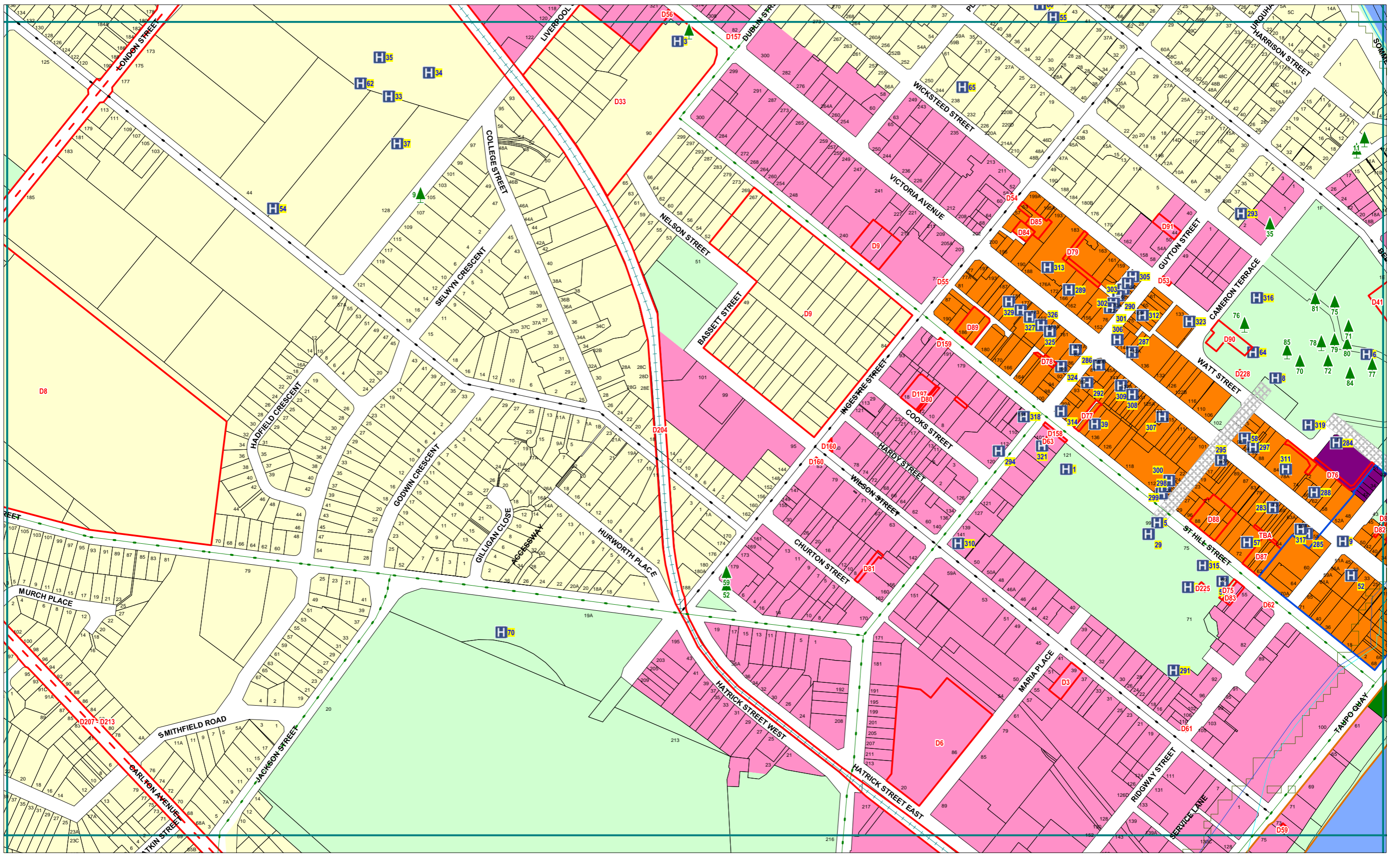
© 2012 Copyright Wanganui District Council. Cadastral Information is derived from Land Information NZ Core Records System (CRS) CROWN COPY RIGHT RESERVED.

Draft Roading Hierachy

Urban 20



	U14	U15
U19	U20	U21
U24	U25	U26




Wanganui District Planning Maps Scale 1:5,000 (Note: This scale is retained only if printed as A3)

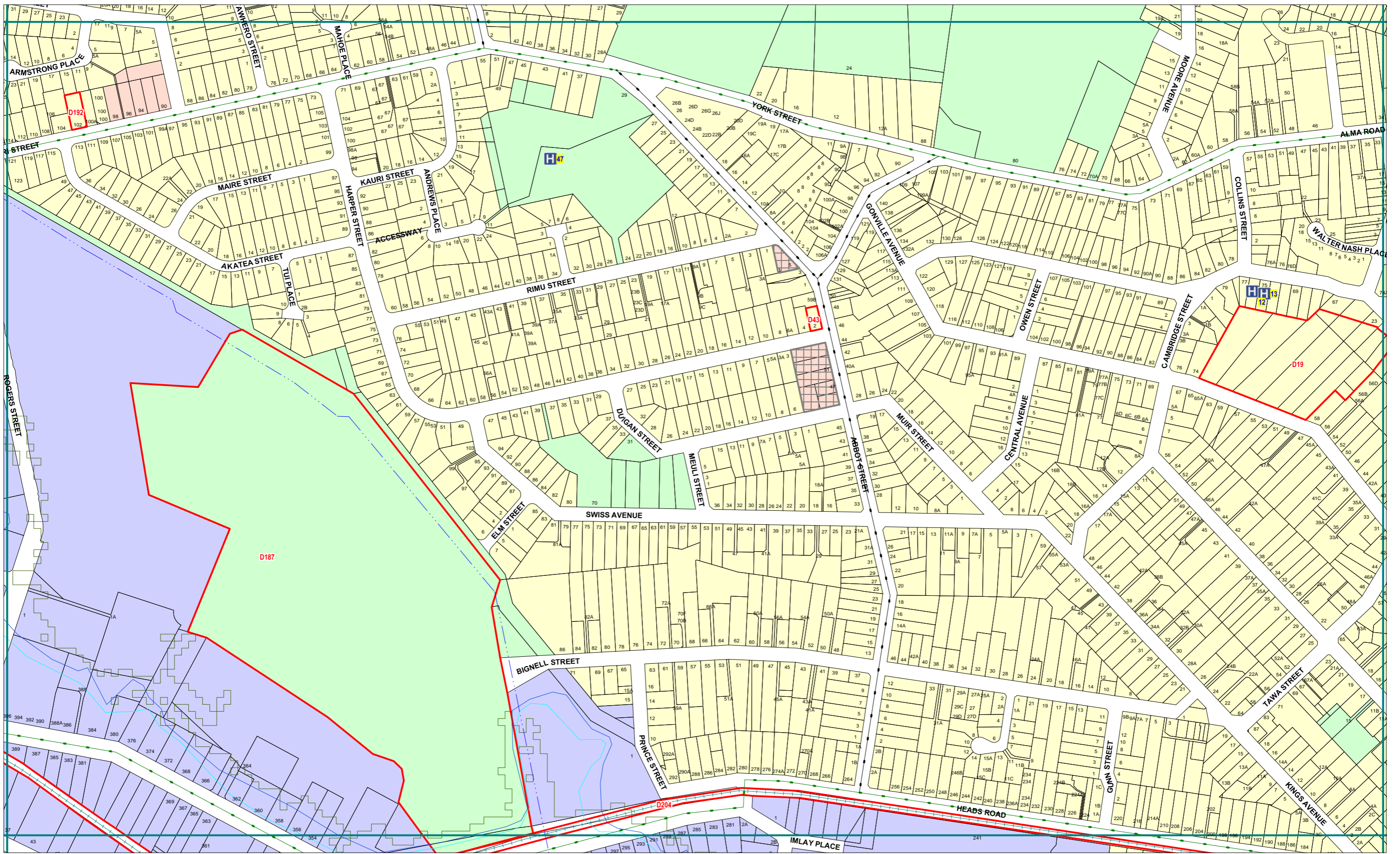
© 2012 Copyright Wanganui District Council. Cadastral Information is derived from Land Information NZ Core Records System (CRS) CROWN COPY RIGHT RESERVED.

Draft Roading Hierachy

Urban 21

	U15	U16
U20	U21	U22
U25	U26	U27





Wanganui District Planning Maps Scale 1:5,000 (Note: This scale is retained only if printed as A3)

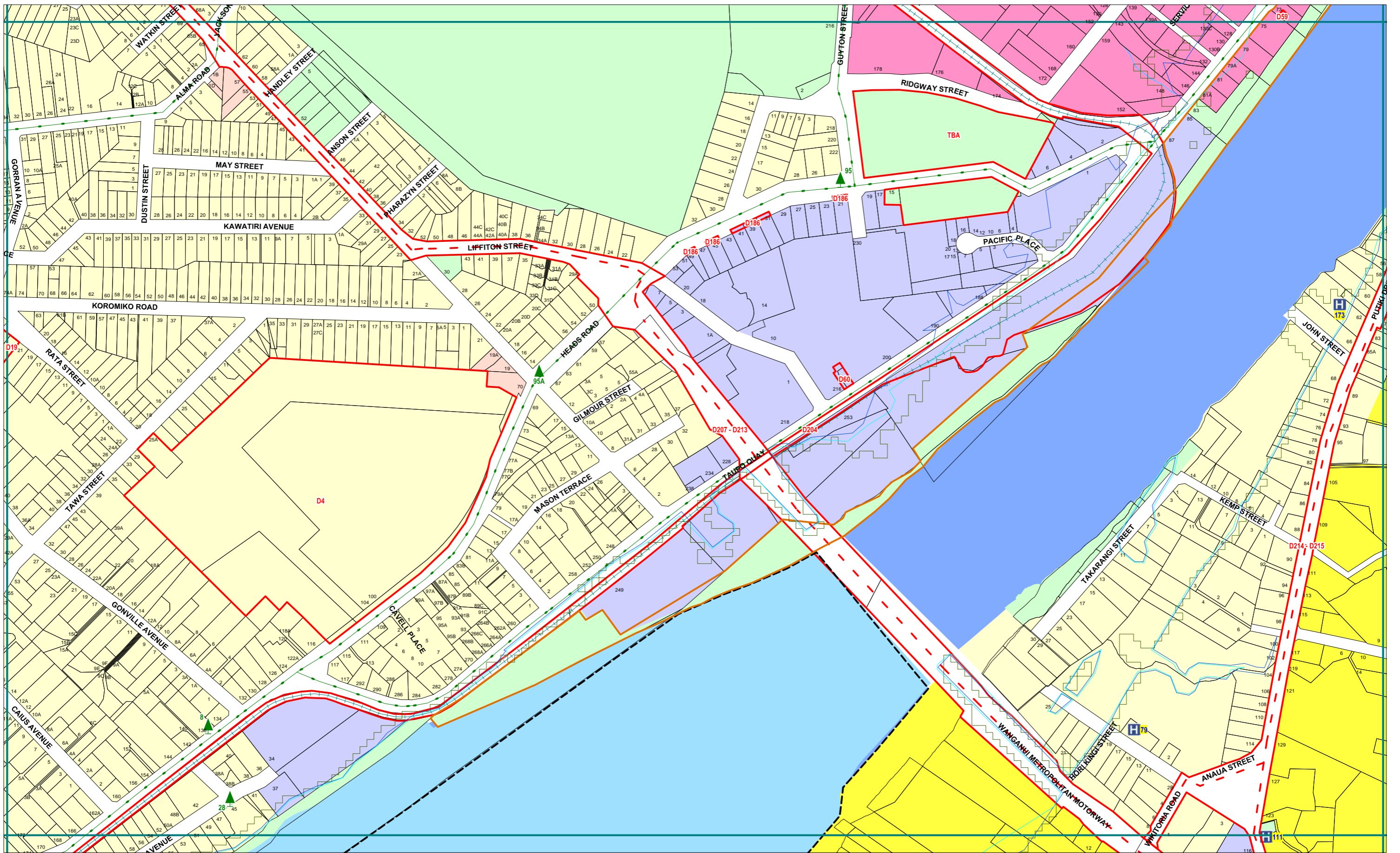
© 2012 Copyright Wanganui District Council. Cadastral Information is derived from Land Information NZ Core Records System (CRS) CROWN COPY RIGHT RESERVED.

Draft Roading Hierchy

N

	U20	U21
U24	U25	U26
U28	U29	U30

Urban 25




Wanganui District Planning Maps Scale 1:5,000 (Note: This scale is retained only if printed as A3)

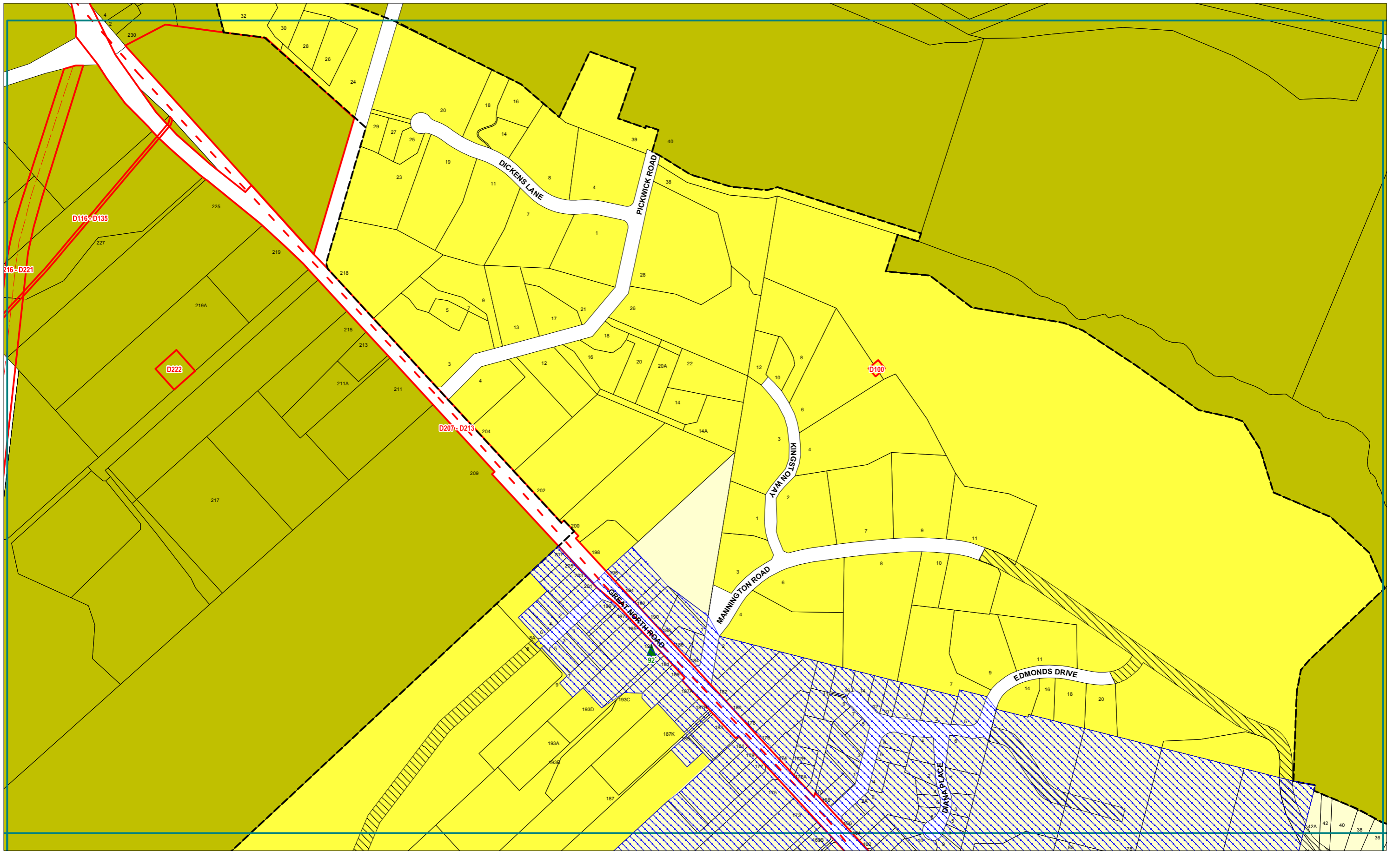
© 2012 Copyright Wanganui District Council. Cadastral Information is derived from Land Information NZ Core Records System (CRS) CROWN COPY RIGHT RESERVED.

Draft Roading Hierachy

Urban 26



	U21	U22
U25	U26	U27
U29	U30	U31



Wanganui District Planning Maps Scale 1:5,000 (Note: This scale is retained only if printed as A3)

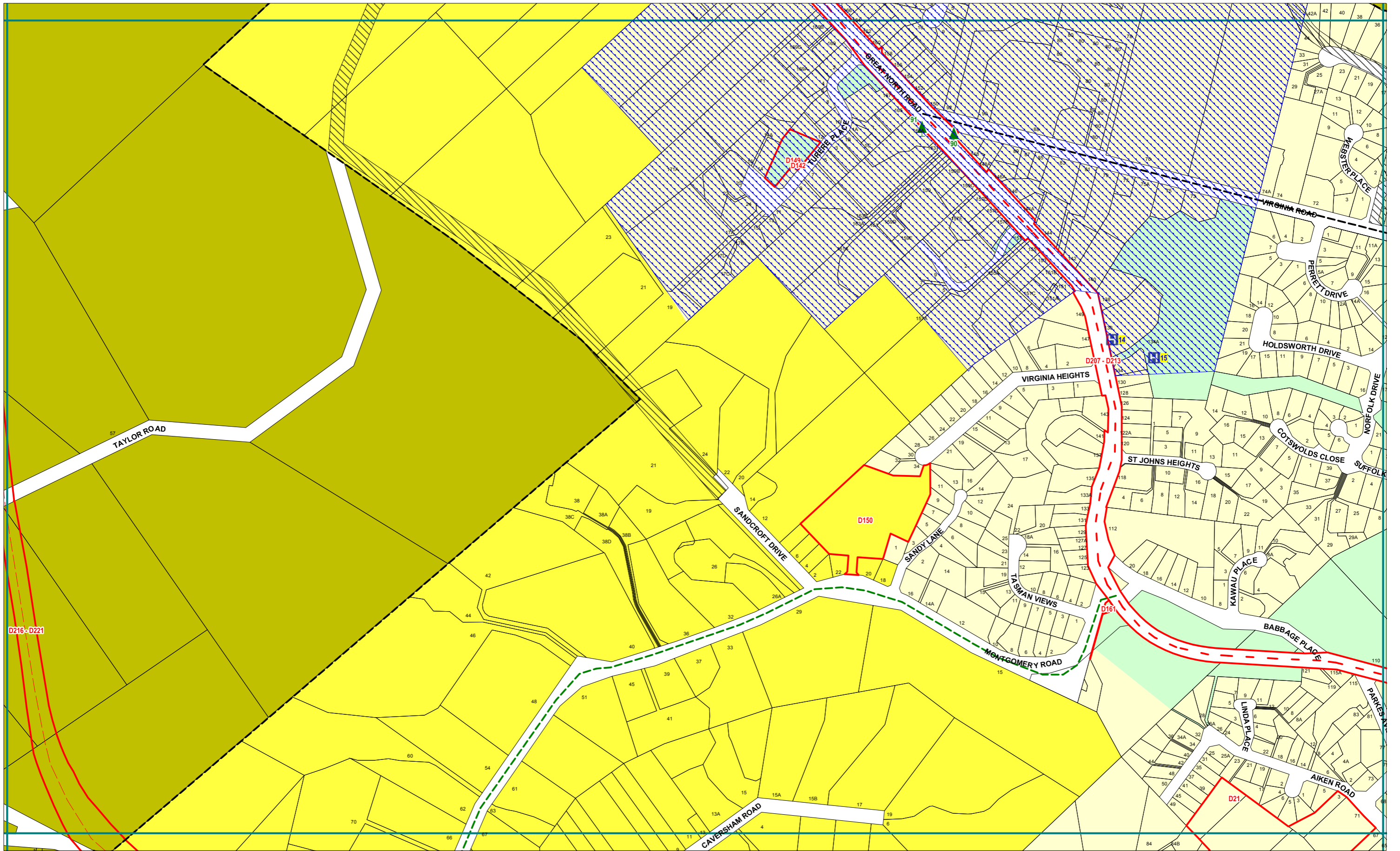
© 2012 Copyright Wanganui District Council. Cadastral Information is derived from Land Information NZ Core Records System (CRS) CROWN COPY RIGHT RESERVED.

OTAMATEA DEVELOPMENT OVERLAY AREA - DRAFT

Urban 3



	R18	R18
R18	U3	U4
U7	U8	U9



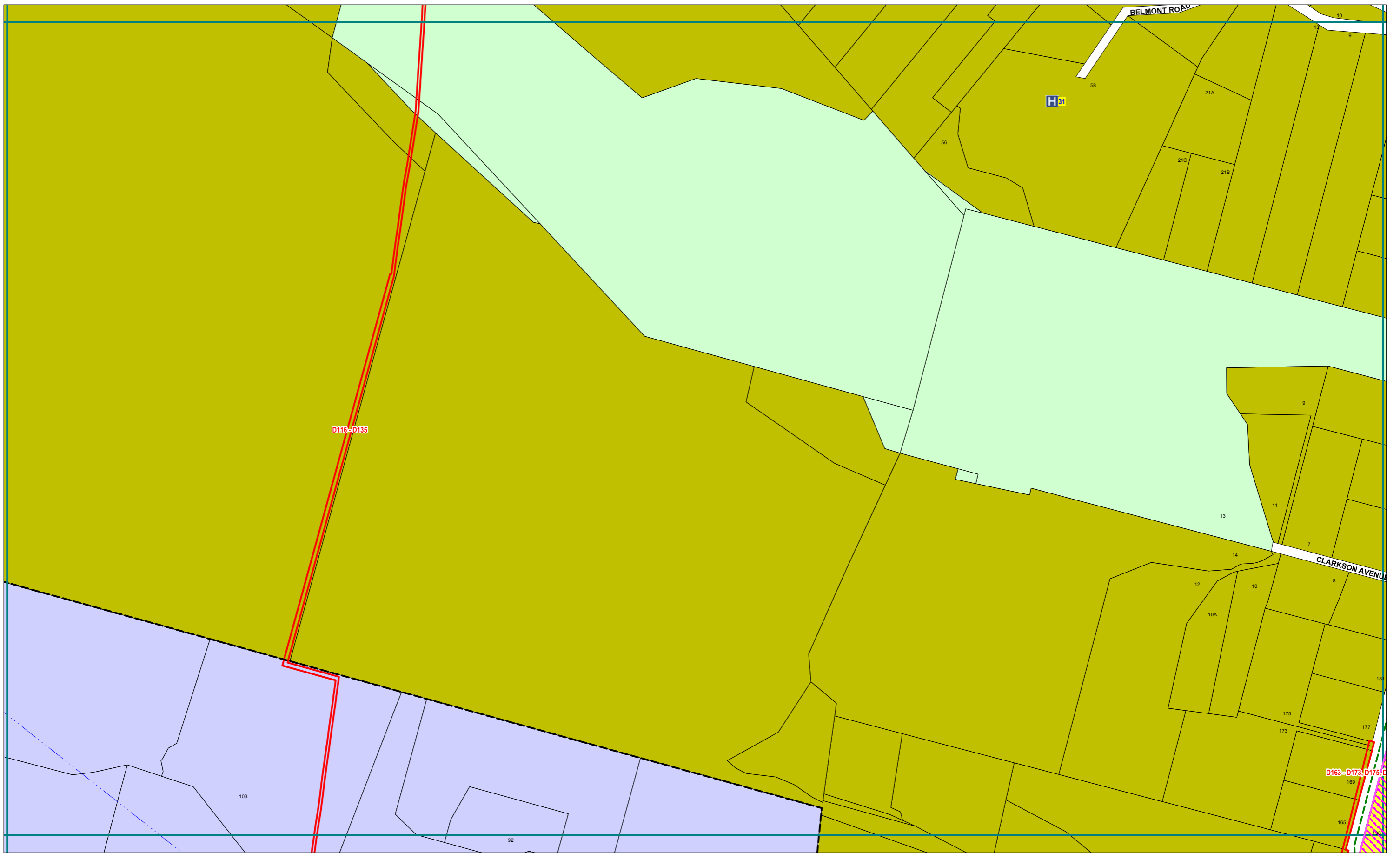
Wanganui District Planning Maps Scale 1:5,000 (Note: This scale is retained only if printed as A3)

© 2012 Copyright Wanganui District Council. Cadastral Information is derived from Land Information NZ Core Records System (CRS) CROWN COPY RIGHT RESERVED.

OTAMATEA DEVELOPMENT OVERLAY AREA - DRAFT

Urban 8

N	U3	U4
1	U7	U8
	U13	U14
	U14	U15




Wanganui District Planning Maps Scale 1:5,000 (Note: This scale is retained only if printed as A3)

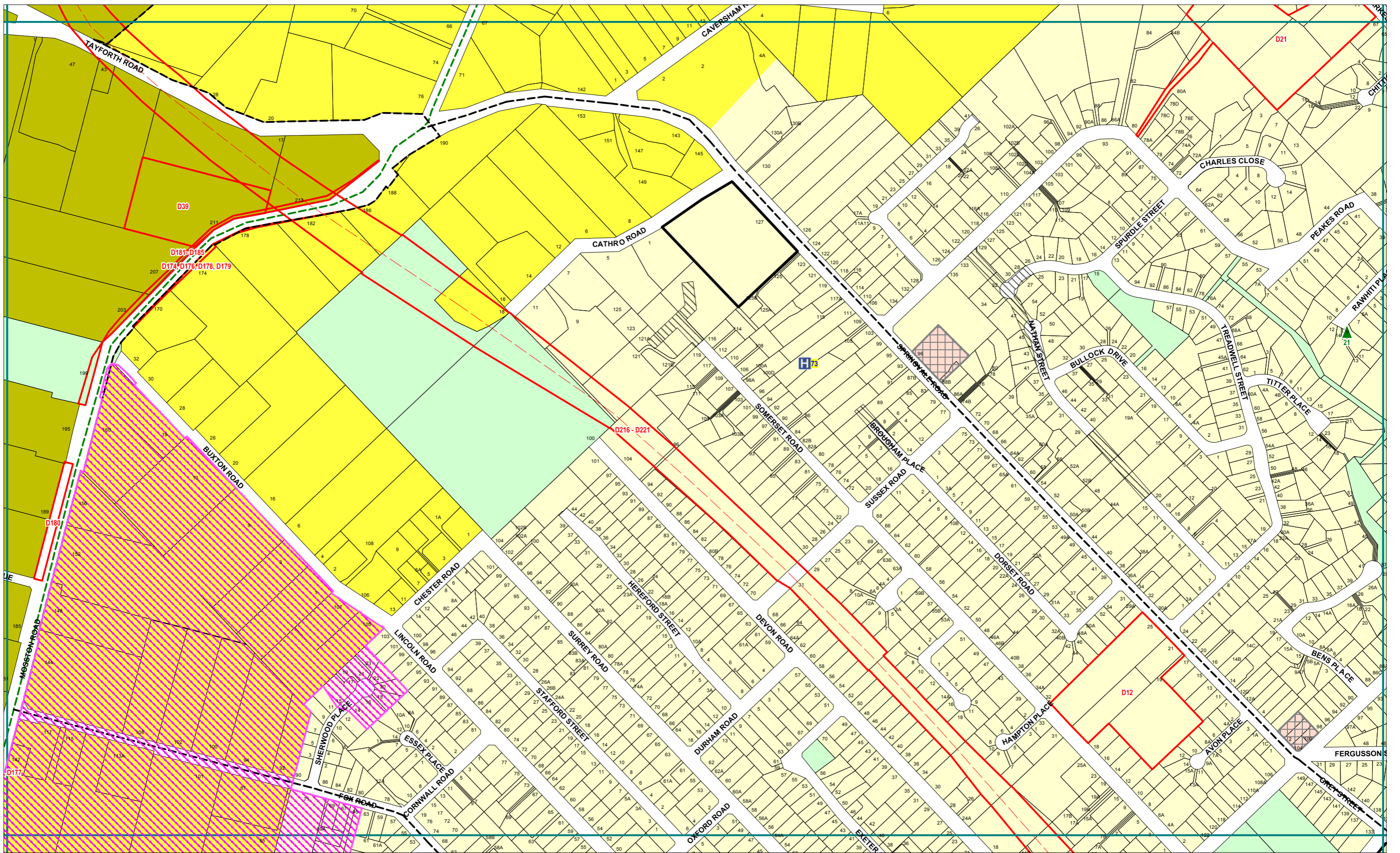
© 2012 Copyright Wanganui District Council. Cadastral Information is derived from Land Information NZ Core Records System (CRS) CROWN COPY RIGHT RESERVED.

SPRINGVALE INDICATIVE FUTURE DEVELOPMENT AREA

Urban 13

N
↑

	U7	U8
U12	U13	U14
U18	U19	U20




Wanganui District Planning Maps Scale 1:5,000 (Note: This scale is retained only if printed as A3)

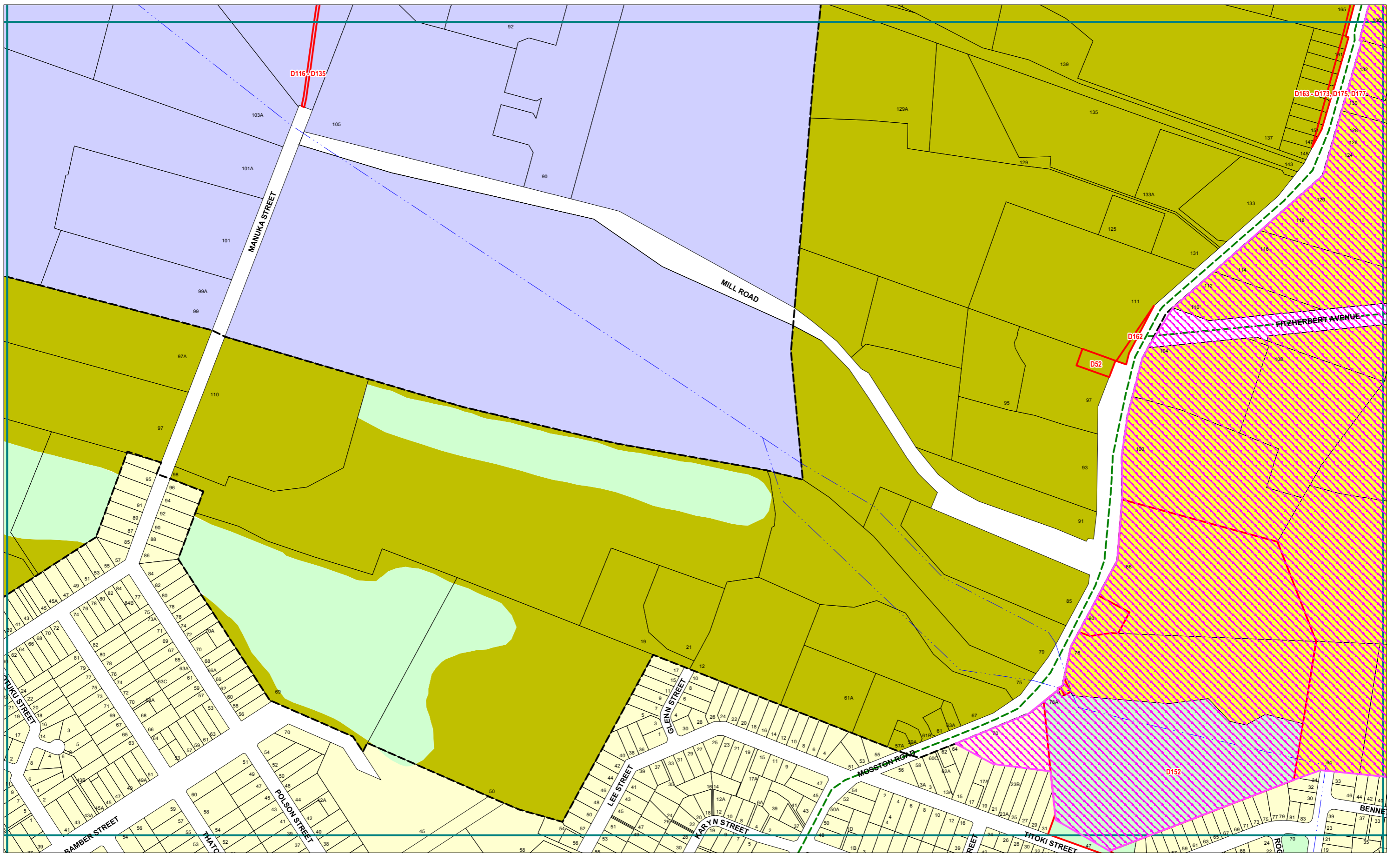
© 2012 Copyright Wanganui District Council. Cadastral Information is derived from Land Information NZ Core Records System (CRS) CROWN COPY RIGHT RESERVED.

SPRINGVALE INDICATIVE FUTURE DEVELOPMENT AREA

Urban 14



	U8	U9
U13	U14	U15
U19	U20	U21




Wanganui District Planning Maps Scale 1:5,000 (Note: This scale is retained only if printed as A3)

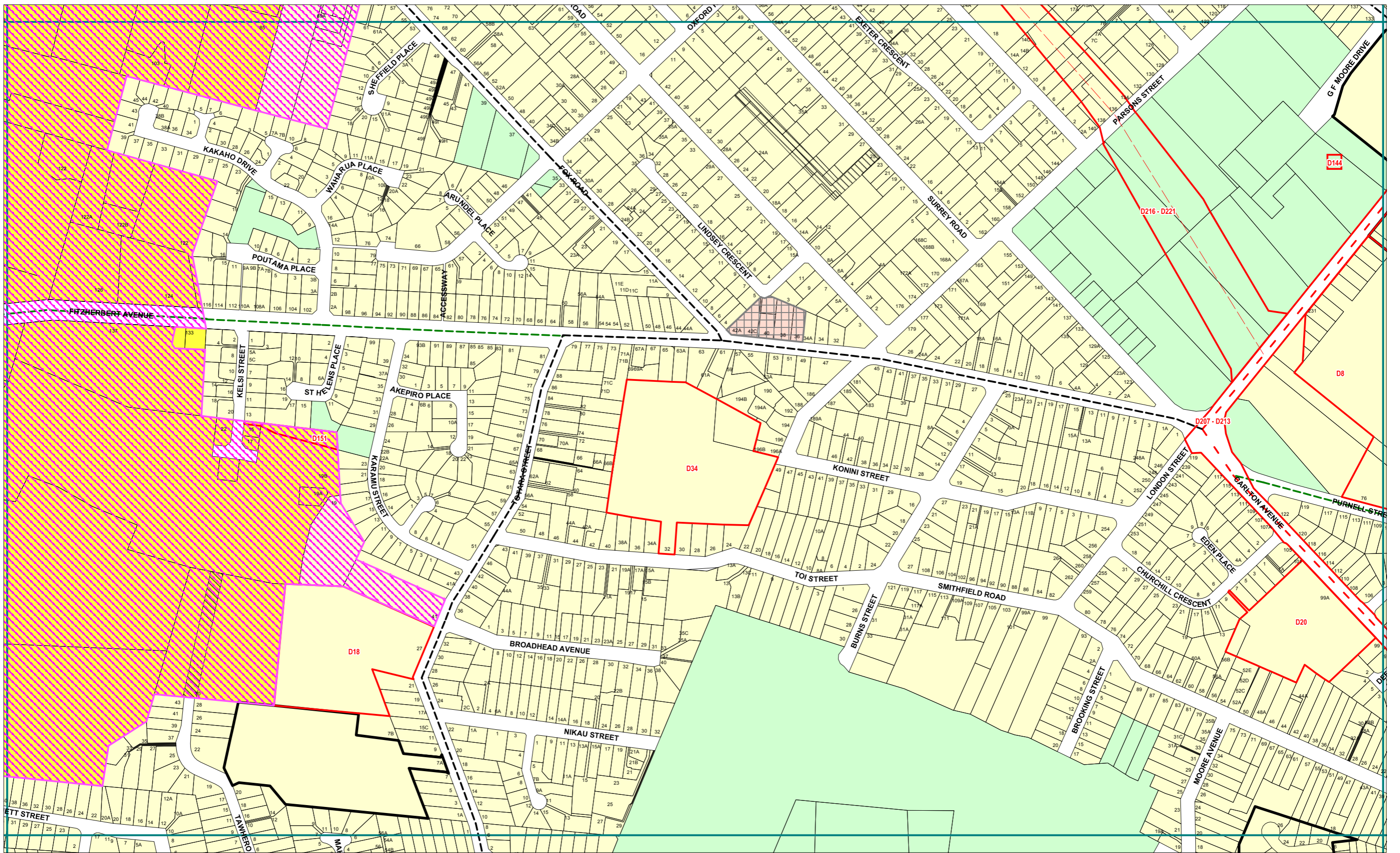
© 2012 Copyright Wanganui District Council. Cadastral Information is derived from Land Information NZ Core Records System (CRS) CROWN COPY RIGHT RESERVED.

SPRINGVALE INDICATIVE FUTURE DEVELOPMENT AREA

Urban 19

	U13	U14
U18	U19	U20
U23	U24	U25





Wanganui District Planning Maps

Scale 1:5,000 (Note: This scale is retained only if printed as A3)

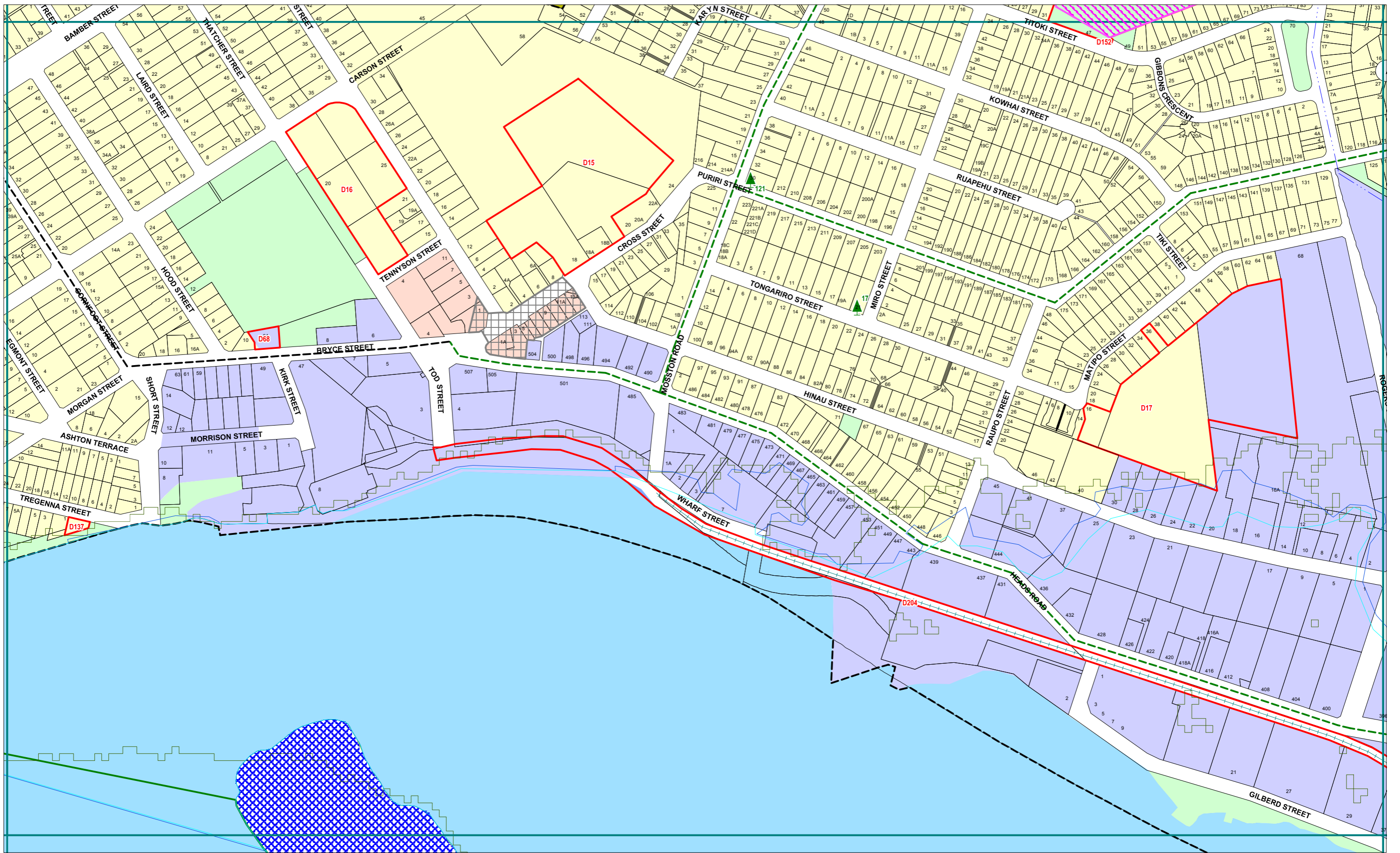
© 2012 Copyright Wanganui District Council. Cadastral Information is derived from Land Information NZ Core Records System (CRS) CROWN COPY RIGHT RESERVED.

SPRINGVALE INDICATIVE FUTURE DEVELOPMENT AREA

Urban 20



	U14	U15
U19	U20	U21
U24	U25	U26



Wanganui District Planning Maps Scale 1:5,000 (Note: This scale is retained only if printed as A3)

© 2012 Copyright Wanganui District Council. Cadastral Information is derived from Land Information NZ Core Records System (CRS) CROWN COPY RIGHT RESERVED.

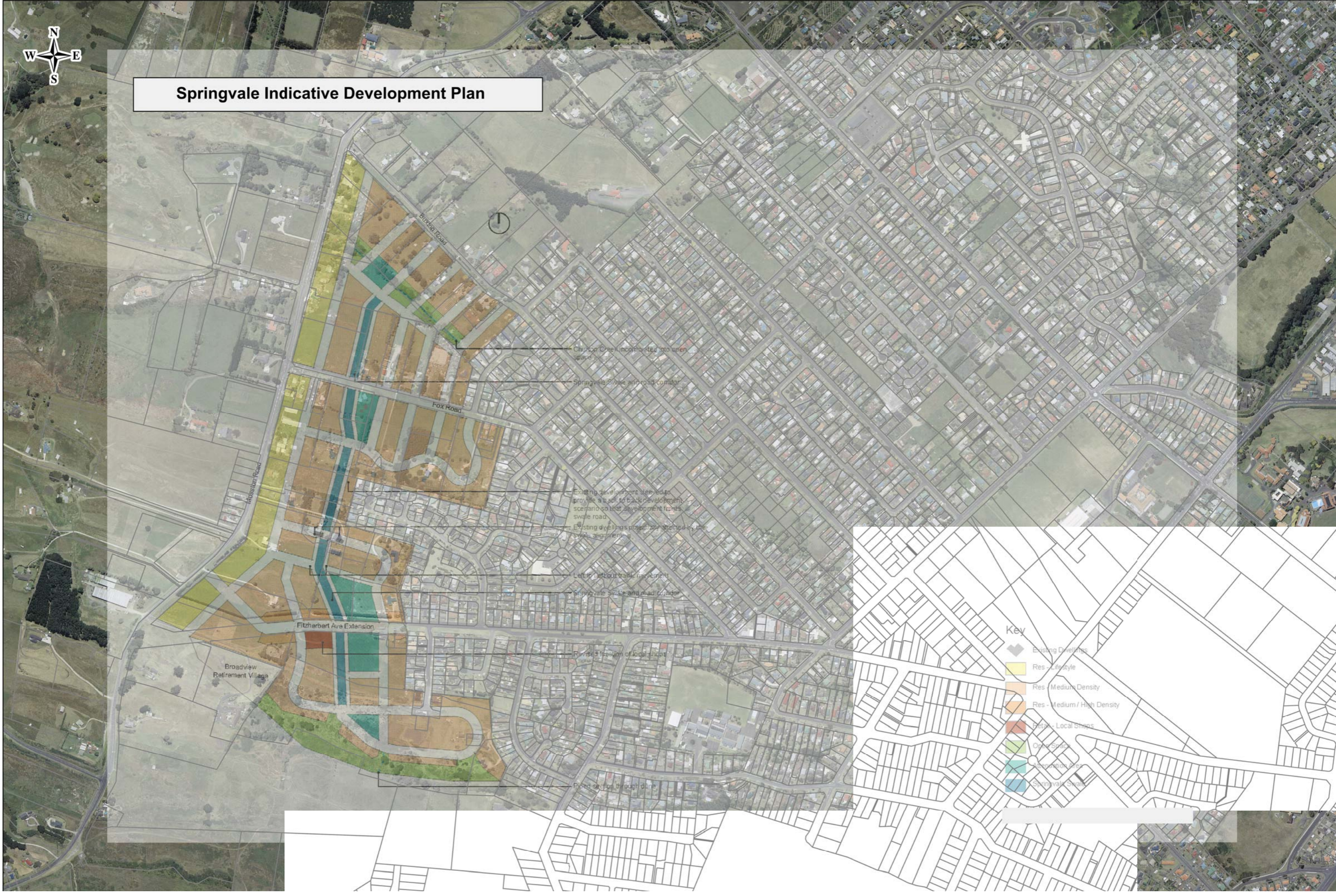
SPRINGVALE INDICATIVE FUTURE DEVELOPMENT AREA

Urban 24

		U19	U20
	U23	U24	U25
	R18	U28	U29



Springvale Indicative Development Plan



Church Creek incorporated into open space

Springvale Swale and road corridor

Existing development slated to provide a road to back development scenario so that development fronts swale road

Existing dwellings potentially affected by the swale alignment

Left in left out traffic movement

Springvale Swale and road corridor

Proposed location of local shops

Proposed section through dune

Key

- Existing Dwellings
- Res - Lifestyle
- Res - Medium Density
- Res - Medium / High Density
- Retail - Local Shops
- Open Space
- Recreation Sites
- Springvale Swale

WANGANUI DISTRICT COUNCIL

PROPOSED
Land Development and
Subdivision Engineering
Document 2012

Wanganui Supplement Document to NZS 4404





WANGANUI DISTRICT COUNCIL

PROPOSED

Land Development and Subdivision Engineering Document 2012

Wanganui District Council

PROPOSED Land Development and Subdivision Engineering Document 2012

Wanganui Supplement Document to NZS4404



FOREWORD

The Land Development and Subdivision Engineering Document 2012 is based upon the requirements of the voluntary National Standard NZS 4404 2004 - Land Development and Subdivision Engineering.

The Document has been produced by the Wanganui District Council to inform developers and consultants of the specific requirements relating to land development and subdivision for Wanganui specific conditions.

This Document supersedes the Wanganui District Council Land Development and Subdivision Engineering Supplement Document to NZS 4404 2004. It has been developed as an interim response to the superseding of the previous National Standard by NZS 4404 2010 – Land Development and Subdivision Engineering, and to resolve some of the issues associated with the implementation of the previous Supplement Document.

The updated National Standard incorporates a more environmentally responsive approach to subdivision and infrastructure development, and incorporates urban design, low impact infrastructure, the integration of infrastructure with the land and land uses, and also takes a catchment based approach to managing infrastructure. Some of these themes have been included in the Document, and are also embedded in the District Plan.

This document is laid out the in the same format as the NZS 4404 2004 to make cross referencing between the two documents simpler. Where this document does not specifically alter parts of NZS 4404 2004, they remain unchanged.

The document is designed to work with the District Plan provisions and should not be read in isolation. Where there is conflict, the District Plan and the Springvale Structure Plan take precedence over this document. All three documents take precedence over NZS 4404 2004.

There is no direct reference to NZS 4404 2010. It is anticipated a further review will take place to more closely align this document to NZS 4404 2010 as resourcing becomes available.

All correspondence relating to this document should be directed to:

Wanganui District Council
PO Box 637
WANGANUI

Contents	Page	Version
Foreword	ii	3
 Part 1: General Requirements and Procedures		
1.1 Scope	1.1	
1.2 Interpretation.....	1.1	
1.3 Relationship with Resource Management Act 1991 and Building Act 2004	1.1	
1.4 Requirements for design and construction.....	1.1	
1.5 Approval of design and construction	1.1	
1.6 Bonds and charges	1.3	
1.7 Performance Bond	1.4	
1.8 Levels of Service	1.4	
1.9 Other Services.....	1.4	
1.10 Health & Safety	1.4	
 Part 2: Land Stability, Foundations and Earthworks		
2.1 Scope	2.1	
2.2 General.....	2.1	
2.3 Technical responsibilities.....	2.1	
2.4 Planning and design	2.1	
2.5 Stability criteria	2.1	
2.6 Special soil types	2.1	
2.7 Compaction standards for fill material.....	2.1	
2.8 Erosion, sediment and dust control.....	2.1	
2.9 Seismic considerations	2.1	
2.10 Lifeline systems.....	2.1	
2.11 Final documentation	2.2	
 Part 3: Roads		
3.1 Scope	3.1	
3.2 General.....	3.1	
3.3 Design	3.2	
3.4 Construction.....	3.9	
 Part 4: Stormwater Drainage		
4.1 Scope	4.1	
4.2 General.....	4.1	
4.3 Design	4.1	
4.4 Construction.....	4.6	
 Part 5: Wastewater		
5.1 Scope	5.1	
5.2 General.....	5.1	
5.3 Design	5.1	
5.5 On-Site Wastewater Disposal System.....	5.3	

Part 6: Water Supply

6.1 Scope6.1
6.2 General requirements 6.1
6.3 Design 6.1
6.4 Valves..... 6.3
6.5 Hydrants..... 6.4
6.6 Connections 6.4
6.7 Termination points 6.4
6.8 Bends and tees 6.4
6.9 System review..... 6.4
6.10 Construction of pipelines..... 6.4
6.11 Means of compliance with this Standard 6.5
6.12 Rural settlements 6.5
6.13 Storage..... 6.6
6.14 Pump stations 6.6

Part 7: Landscape Design and Practice

7.1 Scope 7.1
7.2 General..... 7.1
7.3 Design 7.1
7.4 Construction..... 7.2

Part 8: Reserves

8.1 Scope 8.1
8.2 General..... 8.1
8.3 Design and construction..... 8.1

Part 9: Power, Telecommunications, Gas

9.1 Scope 9.1
9.2 General..... 9.1
9.3 Design 9.1
9.4 Construction..... 9.1

Appendices

A DrawingsA1
B Water Main Pressure Testing CriteriaB1
C Water Supply Disinfection SpecificationC1
D Related Documents D1
E Basic Steps of a Subdivision E1
F Traffic Effects Assessment F1
G Approved Materials..... G1
H Supporting Materials..... H1
I Technical Specifications I1
J Schedule 1D As Built Plans and Documents..... J1
K Copy of "Guidance on use of producer statements"K1
L WDC Updated Table 3.1 - Road Design Standards – Urban (speed limit \leq 70km/h) L1
M WDC Pump Station Specification..... M1
N Testing Schedule.....N1
O Alternative Design Procedure.....O1

Referenced Documents

Wanganui District Plan

Trade Waste Bylaw

Water Supply Bylaw

Street Infrastructure Bylaw

Onsite Stormwater Management Guideline

Auckland Regional Council TP (Technical Publication) 58:

TP58:On-site Wastewater Systems : Design and Management Manual, Third Edition

Wanganui District Council

Proposed Land Development and Subdivision Engineering Document 2012

Supplement Document to NZS4404

Set No. ____
Organisation

Document Control

No.	Organisation	Person	Version No.	Date Supplied
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

PART 1: GENERAL REQUIREMENTS AND PROCEDURES

1.1 Scope

1.2 Interpretation

1.2.1 General

1.2.2 Statutory requirements

Note

This Document shall be read in conjunction with NZS 4404 : 2004.

1.2.3 Definitions

Add the following new definitions:

- DEVELOPERS SITE REPRESENTATIVE – means a professional engineer or engineering technician appointed by the Developer, and accepted by the WDC, to supervise the development works on his behalf.
- AUTHORISED OFFICER – the Authorised Officer for Wanganui District Council for approving engineering plans is the Council's Subdivision Engineer or as delegated by WDC.
- AUTHORISED REPRESENTATIVE – A person appointed by the Authorised Officer to oversee the Development works on his behalf.
- DESIGNER/DESIGN ENGINEER - the Designer/Design Engineer shall be a person with experience and qualified to sign off producer statements.
- SUITABLY QUALIFIED DESIGN PROFESSIONAL – As defined in the "Guidance on Use of Producer Statements" document – See Appendix K.
- SUITABLY QUALIFIED PROFESSIONAL – See above.
- THE WDC will approve suitably qualified persons.
- EARTHWORKS: area greater than 100m² and 500mm deep.
- 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.
- CARRIAGEWAY – that part of a road consisting of the movement lane, sealed shoulder, and parking and loading areas when provided within the road.
- CORRIDOR MANAGER – has the same meaning given to it by the proposed utilities access legislation.
- CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN – has a set of four principles: surveillance, access management, territorial reinforcement, and quality environments of the built environment. These CPTED principles lead to a reduction in the incidence and fear of crime as well as an improvement in the quality of life.
- DRINKING WATER – As defined in the Health (Drinking Water) Amendment Act.

- **FREEBOARD** – A provision for flood level design estimate imprecision, construction tolerances, and natural phenomena (such as waves, debris, aggradations, channel transition, and bend effects) not explicitly included in the calculations.
- **LOCAL AUTHORITY** – As defined in the Local Government Act 2002, and includes territorial authorities and regional councils.
- **LOW IMPACT DESIGN** – An approach to land development and stormwater management that recognises the value of natural systems in order to mitigate environmental impacts and enhance local amenity and ecological values.
- **MOVEMENT LANE** – That part of the formed and sealed road that serves the link function in a road. It may have a shared use for other activities such as walking, cycling, parking, and play.
- **POTABLE WATER** – As defined in the Health (Drinking Water) Amendment Act.
- **RECEIVING WATER** – The water body that receives the discharge from the stormwater conveyance system and is usually a watercourse, stream, river, pond, lake, or the sea.

1.2.4 Abbreviations

Add the following new abbreviations:

- **TARGET OPERATING SPEED** – The desired maximum speed for motor vehicles identified by the designer to suit the land use context and road classification. This speed can be managed by physical and psychological devices such as narrowed movement lanes, reduced forward visibility, parking, slow points, build outs, leg lengths, chicanes, planting, landscaping, street furniture, and art works.
- **WAHI TAPU** – Means a place sacred to Maori in the traditional, spiritual, religious, ritual, or mythological sense.
- **CBD** – central business district
- **CBR** – California bearing ratio
- **CPTED** – Crime prevention through environmental design
- **du** – dwelling unit
- **ESA** – equivalent standard axle
- **FAC** – free available chlorine
- **FAR** – floor-to-area ratio
- **FL** – flange
- **g/m³** – grams per cubic metre
- **HDD** - horizontal directional drilling
- **IQP** – independent qualified person

- Km – kilometre
- Km/h – kilometres per hour
- LA – local authority
- LID – low impact design
- MDD – maximum dry density
- NES – National Environmental Standard
- NIWA – National Institute of Water and Atmospheric Research
- NPS – National Policy Statement
- NZBC – New Zealand Building Code
- NZHPT – New Zealand Historic Places Trust
- NZTA – New Zealand Transport Agency
- PE 80B – polyethylene with minimum required strength (MRS) of 8 MPa as defined in AS/NZS 4130 and AS/NZS 4131.
- Polyethylene with MRS of 10 MPa as defined in AS/NZS 4130 and AS/NZS 4131
- PIPA – Plastics Industry Pipe Association of Australia Ltd
- PN – nominal pressure class (maximum rated operating pressure)
- PP – polypropylene
- PVC-O – orientated polyvinyl chloride
- RMA – Resource Management Act
- Soc – socket
- STP – specified test pressure
- vpd – vehicles per day

1.3 Relationship with Resource Management Act 1991 and Building Act 2004

1.3.1 Resource Management Act

Add the following new clause:

The protection of historic heritage from inappropriate subdivision, use and development is a matter of national importance under s.6(f) of the RMA. The RMA's definition of historic heritage includes: historic sites, structures, places, and areas; archaeological sites; sites of significance to Maori including wahi tapu; and surroundings associated with the natural and physical resources. Therefore regional/district plans should be reviewed to ascertain whether any development proposal affects historic heritage. Most plans have a historic heritage schedule,

which lists the item protected, its location, and its sensitivity. A precautionary approach should be taken prior to any land development and subdivision infrastructure affecting historic heritage, with the LA consulted at the earliest stage (see 1.3.2).

Where applications for resource consents may affect sites of significance to Maori, consultation with the appropriate tangata whenua groups should occur prior to finalising plans or submitting applications for resource consent in order to give effect to Part II of the RMA.

1.3.2 Building Act

Any reference to Act covers latest legal legislation.

1.3.3 Historic Places Act

Add the following new clause:

In addition to the RMA, the Historic Places Act regulates the modification of archaeological sites on all land and provides for substantial penalties for unauthorised destruction, damage or modification of these sites.

The Act makes it unlawful for any person to destroy, damage, or modify the whole or any part of an archaeological site registered with the New Zealand Historic Places Trust (NZHPT), without the prior authority of the NZHPT. This is the case regardless of whether:

- (a) The site is registered or recorded by the council in planning documents;
- (b) The land on which the site is located is designated;
- (c) The activity is permitted under the district or regional plan; or
- (d) A resource or building consent has been granted.

Therefore approval from the NZHPT is required if a site registered with the NZHPT is affected, in addition to any council approval that may be required.

Furthermore if the site is known to be associated with pre-1900 human activity, or there is reasonable cause to suspect such an association, the developer should consult with the NZHPT prior to undertaking any earthworks or ground disturbance.

1.3.4 Other legislation

Add the following new clause:

The Reserves Act, Conservation Act, and other Acts may also require consideration when undertaking land development and subdivision infrastructure. Covenants (a legal restriction or agreement recorded on the title of a property that is a matter of private contract) may also require consideration. For example, a Queen Elizabeth II Act Open Space Covenant is a legally binding protection document agreed between a landowner and the QEII National Trust.

1.4 Requirements for design and construction

1.5 Approval of design and construction

1.5.1 Documents to be submitted for design approval

1.5.1.1 Add the following paragraph:

At concept stage sufficient detail needs to be submitted so that WDC can be assured that the subdivision is functional and meets the required standards.

1.5.2 Drawings

1.5.2.1 General

Add the following:

1. See legend of line type and symbols in Appendix A.

1.5.2.1 General

Add the following sentence:

As Built drawings shall be submitted in accordance with Appendix J of this document.

1.5.2.2 Composition of drawings

Add the following sentences:

- (e) All levels to be shown on a plan shall be in terms of a recognised datum. The following hierarchical precedence is currently in effect for datums.

1. City datum
2. New Zealand Vertical Datum 2009 (NZVD 2009)
Note: NZVD 2009 = Moturiki 1953 + 0.24m; or
NZVD 2009 = City Datum + 0.30m
3. The recognised LINZ mean sea level datum i.e. Moturiki Datum 1953 or Wellington Level Datum 1953 or New Zealand Geodetic Datum 2000 (NZGD2000)
4. Assumed datum with easily recognised origin (i.e. Manhole lid and invert level)
5. A local peg is only acceptable in rural areas.

Note:

**Moturiki 00 = City Datum 100.06 so
Moturiki level = City level – 100.06**

Level Control

On each development in excess of 7 lots, and, where a road is required to service the lots, and there is an existing Wanganui City or Land Information New Zealand level Bench Mark within 500m of the intersection of the new road with the existing road, the developer shall arrange with the surveyor to install within the new road reserve, (in a position that will remain free from disturbance and as part of the survey traverse network), a permanent Reference Mark set in a concrete block of 300mm square and 450mm deep.

The mark is to be either a Land Information New Zealand bronze plaque or a stainless steel pin complying with the Land Information New Zealand Geodetic standards.

The mark so placed is to be levelled in terms of the adjacent Bench Mark to Land Information New Zealand 2nd Order Standards. The level is to be shown in Wanganui City Datum on the as built plans supplied to the WDC at the completion of the development.

Where there is no existing Bench Mark within 500m of the development, a mark as described above is to be placed for future expansion to the level network.

1.5.2.2(b) Composition of Drawings

Add the following clause:

Detailed plans are required for each service on a separate sheet. A general arrangement plan to show all services without detailed information should also be provided.

The drawings shall be submitted in PDF and DXF format. The format of the DXF file must be identified when submitting.

1.5.2.3 Scale

Add the following sentence:

WDC requires plans to be in 1:500 scale.

1.5.2.4 Content of drawings

1.5.2.5 Recording of work – as-built information

1.5.3 Design basis for documents submitted for approval

1.5.3.1 Standard design basis

1.5.3.2 Alternative design basis

1.5.3.3 Cost benefit of life cycle costing

Add the following clauses:

WDC require that the designer ensure that their design promotes minimum maintenance costs. This applies to all references relating to lifecycle cost throughout NZS 4404.

Life cycle costing may be used to consider options within a proposal or a proposal as a whole. In undertaking a life-cycle costing, consideration shall be given to the initial costs borne by the developer and the maintenance and replacement costs borne by the future owners or the LA. A reasonable balance shall be maintained between these short-term and long-term costs.

1.5.4 Approval of design

1.5.4.1 Add comment

The WDC require 3 sets of drawings for approval. One signed approved set will be returned to the developer. This matches the Building Consent approval process.

1.5.4.2 Approval before commencing work

1.5.5 Notification of contracts and phases of work

1.5.6 Supervision of work

Replace the second paragraph

WDC will require completion certification. The certificates shall be in the form given in Schedules 1B and 1C.

1.5.7 Connecting to existing services

1.5.8 Testing

1.5.9 Maintenance

1.5.10 Completion documentation

1.5.11 Approval of uncompleted work

1.6 Bonds and charges

1.7 Add the following new clause:

1.7 Performance Bond

The WDC will, at S224 approval stage, require a two year performance bond from the Developer, effective from the time of issue of the Section 224 Certificate. WDC may call upon the applicant to meet the costs of any failure of the road or public services, which can be attributed to faults in the design, or construction of the development.

1.8 Add the following new clause:

1.8 Levels of Service

For Levels of Service refer to the WDC Ten Year Plan, Volume 2, Annual Plan, Policies.

1.9 Add the following new clause:

1.9 Other Services

1.9.1 Rail

Subdivisions adjoining or crossing a rail line will require the necessary approval from Ontrack (Zealand Railways Corporation).

1.9.2 Airports

Subdivisions adjoining or crossing an airport will require the necessary approval from the Airport Authority.

1.9.3 State Highway

Subdivisions adjoining or crossing a state highway will require the necessary approval from the State Highway Authority.

1.10 Add the following new clause:

1.10 Health & Safety

No development works are to commence until the developer has identified all potential hazards, and formulated a Health and Safety Plan to address these hazards and all other requirements of the Health and Safety in Employment Act.

Schedule 1D Schedule 1D As-Built Plans

See Appendix J for the new Schedule 1D.

1.11 Add the following new clause:

1.11 Low impact design

Low impact design (LID) is both a design approach and a range of structural techniques that can be applied to urban development and stormwater management. As a design approach, LID provides an opportunity to identify and recognise natural features and integrate these into the design of development layouts in order to minimise environmental impacts or enhance natural features. The integration of natural processes in the design stage of a development can result in more attractive, multifunctional landscapes with greater social, environmental, cultural, and transport outcomes.

Low impact design solutions that use natural processes and add value to urban environments are the preferred approach.

1.12 Add the following new clause:

1.12 Climate change

Climate change is likely to increase the magnitude of some hazards, therefore it is important to incorporate risk management in the design of infrastructure supporting new developments to maintain the same level of service throughout the design lifetime. The design of infrastructure for land development and subdivision needs to provide for the impact of sea level rise and the increased frequency of extreme weather events.

C1.5

Amendments to the Resource Management act, the Local Government Act 2002, and the Building Act require LAs to have particular regard to the effects of climate change when making decisions under these Acts.

In coastal areas, the proposed 'New Zealand coastal policy statement' (policy 52) requires LAs to consider the location of any new subdivisions in the context of avoiding or reducing potential coastal hazards.

The government is considering the development of a number of other national policy instruments which may affect decision-making by local authorities, including a 'National environmental standard on seal level rise' and a 'National policy statement on flood risk'. These would not take effect until they are gazetted.

1.13 Add the following new clause:

1.13 Urban design protocol

The *New Zealand urban design protocol* seeks to ensure that the design of buildings, places, spaces, and networks that make up our towns and cities, work for all of us, both now and in the future. NZS 4404 includes recommended best practices that support urban design protocol initiatives. The *New Zealand urban design protocol* identifies seven essential design qualities for good urban design:

- (a) Context: seeing that buildings, places, and spaces are part of the whole town or city;
- (b) Character: reflecting and enhancing the distinctive character, heritage, and identity of our urban environment;
- (c) Choice: ensuring diversity and choice for people;
- (d) Connections: enhancing how different networks link together for people;
- (e) Creativity: encouraging innovative and imaginative solutions;
- (f) Custodianship: ensuring design is environmentally sustainable, safe and healthy;
- (g) Collaboration: communicating and sharing knowledge across sectors, professionals and with communities.

The *New Zealand urban design protocol* has been the primary influence on the layouts that are encouraged in this Standard.

PART 2: LAND STABILITY, FOUNDATIONS AND EARTHWORKS

WDC has the following documents:

- Institute of Geological & Nuclear Sciences (IGNS) Reports. (Copies held by WDC Emergency Manager):

<i>Report No.</i>	<i>Title</i>
2A,B	Active Geological Structures, Earthquake Scenarios
3	A Numerical Assessment of the Earthquake Hazard in the Manawatu Wanganui Region
4A	Geological Setting & Earthquake Hazards, Lifeline Vulnerability & Analysis of Possible Damage
4B	Characteristics of Near Surface Geological Conditions in Urban Areas of Manawatu Wanganui Region
4C	Measurement of Earthquake Ground Shaking in Palmerston North & Wanganui
4D	Assessment of Liquefaction-induced Ground Failure Susceptibility in Manawatu Wanganui Region
4E	Ground Shaking Hazard Assessment for Urban Centres of Manawatu Wanganui Region

- Aerial photography – current and historical vertical aerial photography of the urban area is held by WDC. WDC also has rural aerial photography. Old stereo pairs are held by WDC Planning Services. The Regional Council holds district wide aerial photography.

2.1 Scope

2.2 General

2.3 Technical responsibilities

2.3.2 Preliminary site evaluation

Add the following new clauses:

- (c) Low impact design factors:

The preliminary site evaluation needs to take into account low impact design factors. These include consideration of maintaining and improving natural waterway features and optimising waterway crossing locations. Protection of well-drained soils and natural soakage areas also need to be taken into account.

- (d) Stream instability

There is a potential for instability through changes to the current ground conditions, such as stream erosion;

2.3.3 Construction control testing

2.4 Planning and design

Add new paragraph:

Landform sections need to take into account low impact design principles including retention of existing landforms and natural features where possible, and avoiding earthworks where there are existing habitats of indigenous species, wetlands, or areas of high natural character. The design shall take into account the following factors in making the selection of the final choice of the landform.

- (a) The choice of suitable landform may be specific to a particular site. An earthworks approach that respects and reflects the natural topography of the site is preferred. Considerations for carrying out earthworks include:
 - (i) The minimisation of the risk of damage to property occurring through ground movement in the form of slips, subsidence, creep, erosion, or settlement.
 - (ii) The minimisation of the risk of damage to property occurring through flooding, or surface water run-off.
 - (iii) The development of a more desirable roading pattern with improved accessibility to and within the site and the creation of a better sense of orientation and identity for the area as a whole.
 - (iv) The efficiency of overall land utilisation including the quality of individual sites and amenity areas around buildings, the economics of providing engineering services, and the standard of roading and on-site vehicular access.
 - (v) The need to create suitably graded areas for playing fields and other community facilities; and
 - (vi) The enhancement of the general environmental character of the area.
- (b) The general nature and shape of the ground including:
 - (i) The geological nature and distribution of soils and rock.
 - (ii) Existing and proposed drainage conditions, and the likely effects on groundwater.
 - (iii) Previous history of ground movements in similar soils in the area.
 - (iv) Performance of comparable cuts and fills (if any) in adjacent areas, and
 - (v) Air photography and other sources of information which should be reviewed and incorporated into any slope stability assessment.
- (c) Soil data as applicable for areas which:
 - (i) Are intended to form in situ bases for fills.
 - (ii) Area intended to yield material for the construction of fills.
 - (iii) Are intended to be exposed as permanent batters, and
 - (iv) Are to remain as permanent slopes or cut areas.

- (d) Borings, probings, or open cuts as necessary to:
 - (i) Classify the soil strata by field and visual methods.
 - (ii) Evaluate the likely extent and variation in depths of the principal soil types, and
 - (iii) Establish the natural groundwater levels.
- (e) Soil information required for:
 - (i) Further sampling and testing which may be required on representative soil types.
 - (ii) Relating subsequent soil test properties to relevant strata over the site.
 - (iii) Assessment and design for slope stability.
 - (iv) Assessment and design for foundations suitable for the finished site, and
 - (v) Assessment and design for road subgrades.

The test data appropriate in different areas should be determined by the geotechnical professional.

2.5 Stability criteria

2.6 Special soil types

2.7 Compaction standards for fill material

2.8 Erosion, sediment and dust control

2.9 Seismic considerations

2.10 Lifeline systems

2.11 Final documentation

2.11.1 Geotechnical completion report

2.11.2 As-built drawings for earthworks and drainage

Add the following:

The Developer shall provide cut / fill contours to show changes in the original ground level. This is required where earthworks exceed 100 square metres and the depth exceeds 500mm. For fill areas compaction results are required in terms of Appendix I, Section 2.

See drawing WDC-CM-02 – Cut / Fill Depth Contours in Appendix A.

2.12 Construction

Add the following new clause:

Earthworks shall be carried out to the standards detailed in the approved specifications and drawings, and any requirements in a regional or district plan or consent issued by the LA.

The construction control testing shall be carried out by a testing laboratory or competent person under the control of the geo-professional, and to the recognised testing standards as deemed appropriate.

The testing laboratory shall have recognised registration or quality assurance qualifications.

PART 3: ROADS

3.1 Scope

3.2 General

3.2.1 Objective

3.2.2 Relevant standards and guideline documents

Add the following new paragraph:

The developer shall comply with the WDC policy and procedures for the excavation and reinstatement of works within road reserve, this was historically referred to as the Street Opening Policy, which has been replaced with:

Best Practice for Utility Services Access and Reinstatement in Public Utility Corridors:

- *NZS HB 2002:2003 Code of Practice for Working in the Road*

Temporary Traffic Management:

- *Transit New Zealand Code of Practice for Temporary Traffic Management (CoPTTM)*, and

Road Controlling Authorities draft *Local Roads Supplement to TNZ CoPTTM*

3.2.3 Rooding hierarchy and design

Add the following new paragraph:

Subdividers/developers should obtain a specific determination from the WDC, on a proposed/current road's status, before proceeding with detailed designs for roads.

Where local roads are cul de sac's, they shall not exceed 300 metres in length in urban areas without specific approval from WDC. Cul de sac's of this length shall be designed in terms of "Residential" roads in Table 3.1. This approval will only be given where the proposal has been subject to specific design attention, including an analysis of alternative layouts.

Where urban roads run generally parallel at a separation of 200 metres or less, and where the topography permits, they shall be connected by lateral roads at a spacing of no less than 600 metres.

The completed roading design may be required to be subject to an independent safety audit by a qualified and approved traffic safety professional, at the developers expense, with the audit report made available to WDC at the time that the design plans are submitted to WDC for approval.

WDC's approved Long Term Road Hierarchy Network Plan is covered in the District Plan.

3.2.4 Traffic management plan

Add the following new sentence:

The Traffic Effect Assessment documentation is shown in Appendix F.

- 3.2.5 Public transport
- 3.2.6 Classification of urban roads
- 3.2.7 Classification of rural roads

3.2.8 Public or Private Road

Add the following new clause:

WDC reserves the right to determine whether a road is deemed to be public or private. In most cases a road will be deemed public if it serves 7 or more dwelling units.

3.3 Design

- 3.3.1 Minimum requirements
- 3.3.2 Road geometric design
 - 3.3.2.1 Design parameters
 - 3.3.3.2 Sight distance

Table 3.1 Road design standards – Urban (speed limit \leq 70 km/h)
Note: Table 3.1 has been amended and moved to Appendix L.

Table 3.2 Road design standards – Rural (speed limit up to 100 km/h)

Table 3.3 Safe speeds on horizontal curves

Table 3.4 Superelevation run-off

Table 3.5 Widening of curves for urban kerbed streets

Table 3.6 Vertical curve lengths

Table 3.7 Road and Street Name Signs

- 3.3.3 Pavement structural design
 - 3.3.3.1 CBR design method for rigid and flexible pavements
 - 3.3.3.2 CBR tests
- 3.3.4 Safety provision on hills

Figure 3.1 Parameter relationship

- 3.3.5 Traffic calming in residential streets
- 3.3.6 Parking
- 3.3.7 Intersection design
- 3.3.8 Roundabouts

Figure 3.2 Car park dimensions

Figure 3.3 Minimum traffic sight lines at non-signalized intersections

- 3.3.9 Cul-de-sac heads
- 3.3.10 Bus bays
- 3.3.11 Special road and footpath provisions near places of assembly
- 3.3.12 Footpaths, pedestrian accessways, cycleways, berms
 - 3.3.12.1 Urban

Figure 3.4 Dimensions of cul-de-sac turning areas

Figure 3.5 Turning areas for cul-de-sacs

Figure 3.6 Bus bays: 3.0 m and 3.5 m

Figure 3.7 Pedestrian accessway cycle barriers

Figure 3.8 Footpath construction – typical sections

Replace this Drawing

See updated drawing at the back of this document RD-WDC-016.

3.3.12.2 Rural

3.3.12.3 Cycleways

Add the following new paragraph:

Cycleways to conform to WDC's cycle strategy.

3.3.12.4 Footpath and cycleway surfacing

Add the following new sentence:

In residential areas the acceptable surfacing for footpaths shall be concrete.

Coloured concrete and stamped concrete shall not be used.

3.3.13 Traffic services, signage and road furniture

Add the following new clause:

Road and Street Name Signs

Road and street name blades shall comply with Table 3.7.


Posts shall be either:

100mm by 100mm rough-sawn H4 treated timber posts painted white or, 60mm diameter round fluted aluminium posts powder-coated white.

Table 3.7: Road and Street Name Signs

RTL Street Name Blade Specifications Manual PART 2 WELLINGTON

**WANGANUI DISTRICT COUNCIL
STREET NAME BLADE - NO ARROW**



EXTRUSION	
BLADE DEPTH:	200mm
TYPE:	Signifix - Powder Coated
BLADE LENGTHS:	1200mm max for double sided (2 x Single sided for lengths over 1200mm)
ENDS:	Square
COLOUR:	White
LEGEND	
LETTER STYLE:	Highway Series D
LETTER HEIGHT:	120mm
ARROW:	Nil
COLOUR:	White
REFLECTIVITY:	HI
SPACINGS:	End of Blade to Street Name = 70mm Street Name to Rd St etc = 70mm (min) Rd St etc to end of blade = 70mm
LOGO:	Nil
CONDENSING*:	80%
SPACING*:	-55%
BACKGROUND	
REFLECTIVITY:	HI
COLOUR:	Blue EC Film
HEIGHT:	200mm
BORDER:	Nil
RTL CODES	
CS33 305-316 Single Sided	CS33 405-416 Double Sided
NOTES	
Spacing and condensing modified 20 th July to match the Wellington made blades	

3.3.14 Trees and landscaping

Add the following new sentence:

No building, fence or vegetation on any property shall be erected or permitted to grow in a manner which adversely affects visibility at any road intersection, including access to lots.

3.3.15 Road lighting

Add the following new clauses:

3.3.15.1 General

Developers shall be responsible for design and installation of street lighting and all associated cabling for all new development areas.

All new lighting should be agreed to by Council with regards to the appropriate lighting category as per AS/NZS 1158.3.1:2005 – Part 3.1.

In addition to specific areas noted below, lighting shall be adequate to ensure safety, security and visibility for the convenience of residents and road users. It shall not be excessive in design such that it creates a nuisance, a hazard, or excessive operating cost. To ensure these criteria are met, street lighting shall be the subject of specific design for each development proposal.

To minimise the cost of maintaining replacement stock and ensure consistency of appearance and amenity, lighting columns and lanterns shall be consistent with adjacent existing lighting systems where these comply with WDC's current lighting practice. Where developers wish to use an alternative form of lighting, WDC's may, subject to approval of the developer's proposal, require that the developer contribute spare components into the maintenance stock, or contribute to a maintenance fund.

3.3.15.2 Urban Street Lighting

In addition to recognising the relative requirements of the roading hierarchy, the lighting design shall focus on potential hazard areas, such as intersections, pedestrian crossings, public transport waiting areas and other points of community gathering. Street lighting shall be provided on all public roads as well as pedestrian and cycle accessways. If developers wish to light private rights of way, then the costs of installing, operating and maintaining such lights shall be at the expense of the developer and/or the subsequent owners.

3.3.15.3 Rural Street Lighting

Developers in rural areas, where new development creates a hazard, shall provide street lighting. Such areas may include (but are not necessarily limited to) new road junctions, additional loading on existing junctions, or areas of substandard geometry or width.

Each case is to be judged on its merits, but it is important that the lighting system provides an unambiguous message to rural drivers. To this end, single lanterns are not considered adequate warning of a rural intersection.

3.3.15.4 Other Utilities

For urban and peri urban areas, underground cabling is the preferred method of installation. Refer also to the WDC's District Plan requirements.

- 3.3.16 Bridges and culverts**
- 3.3.17 Non public accesses (urban and rural)**
- 3.3.18 Multi-unit non public accesses (urban and rural)**

Add the following clause to (n)

All weather non-permeable surface is acceptable for rural accesses.

3.3.19 Crossings

Add the following new clause:

3.3.19.1 Urban

The width of the vehicle crossing shall be defined as the width at the property boundary.

Replace the 2nd to last sentence of the 3rd paragraph with:

All crossings shall be surfaced with concrete.

Replace last sentence, 3rd paragraph with:

Drawings RD-WDC-001, RD-WDC-003, RD-WDC-0005 and RD-WDC-007 show acceptable details of vehicle crossing.

3.3.19.2 Rural

The width of the vehicle crossing shall be defined as the width at the property boundary.

Figure 3.9 Maximum breakover angles for vehicular access to property

Figure 3.10 Standard light duty vehicle crossing detail

Replace this Drawing

See updated drawing at the back of this document in Appendix A.

- 3.3.20 Fencing**
- 3.3.21 Road drainage**
 - 3.3.21.1 Calculations and design**
 - 3.3.21.2 Subsurface drains**
 - 3.3.21.3 Side drains/water tables**

Figure 3.11 Under kerb drainage and rural subsoil drainage

3.3.21.4 Kerbs and channels

Replace the first paragraph with the following:

Where kerbs and channels are to be provided on carriageways they should comply with figure 3.12. Mountable kerb will not be allowed where it will impinge on pedestrians, utility services or safety. Footpaths may need strengthening if mountable kerb is used. See Drawing RD-WDC-020.

3.3.21.5 Sumps

3.3.21.5.1 Sump location

Figure 3.12 Kerbs and dished channels

See supporting Drawing in Appendix A.

See updated drawing at the back of this document for standard and mountable kerb and channel RD-WDC-020.

Figure 3.13 Typical sump to driveway or right of way

Figure 3.14 Flat channel or yard sump

Figure 3.15 Hillside sump

Replace this Drawing

See updated drawing CM-WDC-006 in Appendix A.

Figure 3.16 Add-on back-entry sump for hillside situations

Figure 3.17 An alternative sump for hillside situations

Figure 3.18 Special entry to double sump in hillside channel

Figure 3.19 Double back-entry sump for road low points

3.3.21.5.2 Side-entry sumps

3.3.21.5.3 Sump gratings

3.3.21.5.4 Sump leads

3.3.21.5.5 Secondary flow provisions

Add the following new sentence:

Secondary flow paths to be shown on subdivision drawings.

3.3.22 Add the following new clause:

3.3.22.1 Loading

- a** Loading bays shall be designed and located so as to provide a safe position for loading and unloading of goods and providing access and egress without affecting any road or service lane.
- b** Loading bays shall be designed and located so as to:
 - i.** Promote use of the loading bay rather than the road side for loading and unloading of goods;
 - ii.** Minimise conflicts between traffic entering and leaving the site.
- c** The areas of the loading bay(s) shall be sufficient in size to cater for the largest expected vehicle, plus manoeuvring space around that vehicle.

(Standards (a) to (c) above aim to ensure that the safe and efficient operation of roads is not impeded by the location of stationary service vehicles nor the manoeuvring of such vehicles. It is preferable that vehicle movement, to and from sites be in a forward direction where possible.)

3.3.22.2 Property Access

New vehicle crossings, and existing vehicle crossings serving a new activity, shall meet the design standards in NZTA – Planning Policy Manual when all the following circumstances exist:

- i.** The road is a National route, (State Highway) primary arterial or secondary arterial (as defined on the Planning Maps); and
- ii.** The road has a speed limit of 100km/hr or more at the access location; and
- iii.** The activity concerned is a high traffic generating activity which, for the purpose of this standard, shall be defined as an activity which generates more than 30 car equivalent

movements per day (24 hour period) averaged over a normal week, where:

- 1 car to and from the site = 2 car equivalent movements
- 1 truck to and from the site = 6 car equivalent movements
- 1 truck and trailer to and from the site = 10 car equivalent movements
- 1 single residential dwelling = 8 car equivalent movements

NZTA – Planning Policy Manual – For Integrated Planning and Development of State Highways – Appendix 5B.3; Accessway geometric design should be used in the above circumstances.

Generally, Diagrams D & E will be used depending on Table App 5B/4 – Accessway types.

NZTA standards for State Highway access design aims, to allow most new crossing places to be permitted activities, which requiring specific access design only in relation to high traffic generating activities seeking access to high speed arterial roads. The alternative of not having any controls over access for high traffic generating activities to high speed arterials is not appropriate for traffic safety and efficiency reasons. At the other extreme, the alternative of requiring a resource consent for all new accesses to state highways (regardless of nature and location of activity) is also not considered to be necessary or appropriate).

Note: *That the WDC have rural vehicle crossings drawings which apply for vehicle movements less than 30 on minor rural roads.*

Note: NZTA approval is required for access onto State Highways under section 51 of the Government Roading Powers Act 1989.

3.3.22.3 Separation Distance Between Accesses

Roads where speed limit is less than 70 km/hr:

In relation to any state highway or other national route, primary arterial or secondary arterial (as defined on the Planning Maps), the minimum distance between accesses (either single or combined) on the same side of the road shall be:

- i. not less than 7.5 metres for residential land uses,
- ii. not less than 15 metres for all other land uses.

In relation to any road not covered by the paragraph above, there is no minimum standard for the minimum distance between accesses.

Roads where speed limit is 70 km/hr or more:

In relation to any state highway or other national route, primary arterial or secondary arterial (as defined on the Planning Maps), the minimum distance between successive accesses (regardless of the side of the road on which they are located) shall be not less than:

- i. 40 metres for 70 km/hr roads,
- ii. 100 metres for 80-90 km/hr roads,
- iii. 200 metres for 100 km/hr roads.

In relation to any road not covered by the paragraph above, there is no minimum standard for the minimum distance between accesses.

Separation Distance Between Accesses and Intersections:

Roads where speed limit is less than 70 km/hr:

- k** In relation to any state highway or other national route, primary arterial or secondary arterial (as defined on the Planning Maps), the minimum distance between an access and a road intersection shall be 15 metres.
- l** In relation to any road not covered by (k) above, the minimum distance between an access and a road intersection shall be 10 metres, except that where the road intersects with a national route, primary arterial or secondary arterial, the minimum distance shall be 15 metres.
- m** The measurement of distances shall be taken from the nearest corner junction point of the road reserve boundaries at the intersection (or their projection in respect of "T" intersections) and shall be measured to the nearest edge of the access to the intersection.

Roads where speed limit is 70 km/hr or more:

- n** In relation to any state highway or other national route, primary arterial or secondary arterial (as defined on the Planning Maps), the minimum distance between an access and a road intersection shall be 100 metres.
- o** In relation to any road not covered by (n) above, the minimum distance between an access and a road intersection shall be 30 metres.
- p** The measurement of distances shall be taken from the intersection of the centrelines of the intersecting roads.

(Standards (k) to (p) above aim to ensure that vehicle crossings are not located unduly close to road intersections, for traffic safety and efficiency reasons. The separation distance required increases with the speed environment and the nature of the road concerned.)

3.4 Construction

3.4.1 Introduction

Add the following new sentence:

Construction work in the public road reserve shall comply with WDC's Street Opening Policy.

3.4.2 Materials for flexible pavements

3.4.2.1 Transition layer

3.4.2.2 Sub-base

3.4.2.3 Basecourse

- (a) Shall apply in Wanganui, this precludes the use of shellrock.

3.4.3 Road Surfacing

Clause (d) & (e) subject to specific approval.

3.4.4 Road surfacing materials

3.4.4.1 First and second coat chip seals

Replace first sentence with:

The first coat seal shall consist of a grade 4 and 6 two coat seal.

Two seal coats shall be applied by the developer. The second seal coat shall be applied approximately 1 year after the first seal coat, ideally between 12 and 18 months after the first coat. The type of each seal coat shall be agreed with Council's Infrastructure Group prior to the work commencing.

3.4.4.2 Double wet lock coat

3.4.4.3 Hot laid asphaltic concrete surfacing

3.4.4.4 Other asphaltic mixes

3.4.4.5 Concrete

Replace 1st paragraph, second sentence with:

Concrete of not less than 30MPa 28 day strength shall be used for any road.

Replace last sentence with:

Concrete of not less than 20MPa 28-day strength shall be used for kerbs and channel and crossing slabs.

3.4.4.6 Concrete pavers

3.4.5 Subgrade checking

3.4.6 Spreading and compaction of metal course aggregates

3.4.7 Sub-base

Replace the last sentence of the second paragraph with:

Sub-base shall be constructed in accordance with TNZ B/2 Specification.

3.4.8 Basecourse

3.4.9 Maintenance of basecourse

3.4.10 Basecourse preparation for surfacing

3.4.11 Deflection testing prior to surfacing

3.4.12 Surfacing specification

Replace second sentence with:

Asphaltic concrete construction shall comply with TNZ Specification P/9P.

3.4.13 Bitumen application rate

3.4.14 Footpaths

3.4.14.1 Concrete

Penultimate paragraph. **Delete second sentence.**

3.4.14.2 Asphaltic concrete

3.4.14.3 Concrete pavers

Add the following new sentence:

Block paving shall not be used.

3.4.14.4 Surface finish, tolerances

Add the following new sentence:

Coloured concrete and stamped concrete shall not be used.

3.4.15 Kerb and channel

Add the following new sentence:

Coloured concrete and stamped concrete shall not be used.

3.4.16 Berms and landscaping

3.4.17 Road surface tolerances and texture

3.4.18 Surface finish and tolerances on kerbs, paths and accessways

Add the following new sentence:

Coloured concrete and stamped concrete shall not be used.

3.4.18.1 Kerbs and channel

3.4.18.2 Paths, accessways

3.4.19 Progress inspections

3.4.20 Installation of traffic services, road furniture, benchmarks

3.4.21 As-built and completion documentation

Add the following new paragraph:

On completion of the physical works, and before acceptance of the works by WDC, the developer shall submit a full set of As-Built drawings of the works to Council in accordance with 1.5.2.1.

The As-Built drawings shall include the full detail required by WDC to inventory, locate and maintain the works, along with the manuals necessary to operate plant, signals or other devices.

As-Built drawings may take the form of construction drawings modified to account for amendments or refinements in the field, but shall be clearly labelled as "As-Built" and certified as an accurate post-construction record.

See Appendix J: Schedule 1D As-Built Plans and Documents for WDC requirements.

PART 4: STORMWATER DRAINAGE

4.1 Scope 4.2 General

4.2.1 Objectives

Add the following new sentence after the 2nd paragraph:

Note that the Wanganui District Council promotes the use of 'On-site Stormwater Management Guideline' document for sustainable stormwater design solutions. This document was published by the Ministry for the Environment and NZWERF in October 2004. This document is available for free download from the Water NZ website.

- 4.2.2 Legislation
- 4.2.3 Local authorities' requirements
- 4.2.3.1 Authorization from the regional council
- 4.2.3.2 Exercising permits
- 4.2.4 Catchment management planning
- 4.2.5 Effects of land use on receiving waters
- 4.2.6 System components
- 4.2.7 Alternative stormwater systems
- 4.2.8 Catchments and off-site effects
- 4.2.9 Stormwater pipelines and waterways
- 4.2.9.1 Stormwater pumping
- 4.2.9.2 Materials
- 4.2.9.3 Rural areas

4.3 Design

- 4.3.1 Approval of proposed works
- 4.3.1.1 Approval process for stormwater drainage works
- 4.3.1.2 Information to be provided
- 4.3.2 System Design

- 4.3.2.1(e) The designer
Alteration – Incorrect reference:

Drawing WS-003 should read drawing WW-002

- 4.3.2.2 Separate system
- 4.3.2.3 Primary and secondary systems
- 4.3.2.4 Secondary flow paths
- 4.3.2.5 Minimum protection standards
- 4.3.2.5.1 Design storms

Table 4.1 Recommended AEP for design storms

Function	AEP (%)	Return Period (years)
Primary systems:		
Rural	20	5
Residential and rural residential areas	10	10
Commercial and industrial areas	10	10
All areas where no secondary flow path is available	1	100
Secondary systems	1	100

- 4.3.2.5.2 **Freeboard**
- 4.3.2.5.3 **Tidal areas**
- 4.3.2.5.4 **Bridges and culverts**
- 4.3.3 **Pipelines and culverts**
- 4.3.3.1 **Location and alignment of stormwater mains**

4.3.3.2 **Pipe Materials**

Add the following paragraphs:

Roller Compacted concrete pipes (RCP) shall only be used if it can be shown and verified that each individual pipe has passed the factory hydrostatic test.

PVC pipes and fittings shall be rubber-ring jointed complying with AS/NZS 1260 for foul sewers and AS 1254 for stormwater sewers. Class SN4 is generally acceptable.

PVC-U pipes and fittings shall be used in all areas where sewer connections are required to be made to the constructed pipeline.

Stormboss pipe will be accepted by the WDC.

Slip couplings shall only be used with the approval of the Authorised Officer.

4.3.3.3 **Building over pipelines**

Table 4.2 Acceptable pipe materials

See Table 4.2 in Appendix G.

4.3.3.4 **Pipeline connections**

Paragraph 1 – remove the words:

“and the distance from the connection to the closest inspection point is not greater than 11 m.”

(Note: The second paragraph in NZS 4404 should still apply).

4.3.3.5 **Minimum pipe sizes**

Minimum cover

WDC accepts the minimum cover requirements of AS/NZS 2566 for flexible pipelines.

4.3.3.7 **Gradients and acceptable flow velocities**

4.3.3.8 **Backflow effects**

4.3.3.9 **Culverts**

Add the following new paragraph after the 4th paragraph:

The Council accepts headwalls constructed of concrete filled bags for culverts less than DN375. All culverts DN375 and over will require precast headwalls. See drawing RD-WDC-012 in Appendix A.

4.3.3.10 **Inlets and outlets**

4.3.3.11 Subsoil drains

Add the following paragraph:

The developer needs to check with WDC's approved Product List or apply for a new product to be added at the developers expense.

See drawing CM-WDC-023 & CM-WDC-024 in Appendix A for subsoil details

Note: Wanganui is prone to iron ochre effecting subsoil drains. Where the water table is high and subsoil drains are necessary Council advice should be sought. WDC have specific requirements for subsoil drains to minimise difficulties associated with the presence of the iron ochre. These requirements may include the use of special vitrified clay subsoil pipes. WDC has a supply of these pipes and will sell them to developers for use in the iron ochre prone areas.

4.3.3.12 Seismic design

4.3.3.13 Geotechnical investigations

4.3.3.14 Bulkheads

4.3.4 Manholes

4.3.4.1 Standard manholes

Replace the last paragraph with the following new paragraph:

Refer to drawing CM-WDC-004 and CM-WDC-015 for manhole details.
(Appendix A)

4.3.4.2 Manhole materials

Replace paragraph one with the following new paragraph:

MH may be manufactured in reinforced concrete, or from suitable materials as approved by the Wanganui District Council.

4.3.4.3 Size of manholes

4.3.4.4 Shallow manholes

4.3.4.5 Manhole connections

4.3.4.6 Access

4.3.5 Waterways

4.3.5.1 Constructed waterways

4.3.5.2 Natural waterways

4.3.6 Water quantity and quality control

4.3.7 Connection to the public system

4.3.7.1(a) Individual lots and developments

Add the following to the clause:

In a Greenfield site, all lot connections shall be to a main or swale

4.3.7.1(e) Individual lots and developments

Replace clause with the following:

- (i) 90mm for internal lots

4.3.7.1(h) Individual lots and developments

Replace clause with the following:

Connection to an alternative stormwater disposal system such as vegetated swales, soakpits, or soakage basins is acceptable provided the system is authorised by the WDC and adverse effects and potential nuisances are addressed;

4.3.7.1(k) Individual lots and developments

Add the following new clause:

The principle of the ownership and responsibility for stormwater drains apply similarly to the sanitary sewer drawings prepared in Appendix A.

See drawings CM-WDC-018, CM-WDC-019, CM-WDC-020, CM-WDC-021 and CM-WDC-022 in Appendix A.

Note: For stormwater application ignore the rodding eye notes on the sanitary sewer drawings.

4.3.7.2 Connection of lateral pipelines to mains

4.3.8 Stormwater disposal

4.3.8.1 Approved outfall

4.3.8.2 Soak pits

Add the following new paragraph:

Guidance on soak pits is also contained within WDC's Stormwater Separation Guide.

4.3.9 Easements

4.3.10 Fencing and safety

4.3.10.1 Fencing

4.3.10.2 Health and Safety

4.3.11 Developer contributions

4.3.12 Means of compliance

4.3.12.1 Surface water

4.3.12.2 Estimation of surface water run-off

4.3.12.2.1 Large catchments

Replace clause with the following:

For catchment areas greater than 100 ha or smaller catchments with significant storage elements (eg ponds, wetlands, and basins) surface water run-off shall be determined by unsteady flow modelling or an alternative method agreed to by WDC for each specific case.

4.3.12.2.2 Rainfall intensity and time of concentration

Replace clause with the following:

Estimated depth-duration-frequency table for Wanganui at 2050

Rainfall Depths (mm)										
ARI (yr)	Duration									
	10m	20m	30m	1 hr	2 hr	6 hr	12 hr	24 hr	48 hr	72 hr
2	8.0	11.6	13.8	18.2	23.0	34.6	44.0	55.0	64.5	70.5
5	11.2	16.2	19.4	24.9	29.9	44.0	55.6	71.8	82.0	88.4
10	13.3	19.3	23.2	29.4	34.5	50.2	63.1	82.8	93.8	100.3
20	15.3	22.2	26.7	33.8	38.9	56.2	70.5	93.5	104.9	111.7
30	16.5	23.9	28.7	36.2	41.4	59.6	74.7	99.6	111.4	118.3
50	18.0	25.9	31.2	39.3	44.6	63.8	80.0	107.2	119.4	126.5
60	18.6	26.7	32.2	40.5	45.7	65.4	81.9	110.0	122.4	129.4
70	19.0	27.3	33.0	41.4	46.6	66.7	83.5	112.3	124.8	131.9
80	19.3	27.9	33.6	42.2	47.5	67.7	84.9	114.2	126.9	134.0
90	19.7	28.3	34.1	43.0	48.2	68.8	86.1	116.0	128.7	135.9
100	20.0	28.7	34.7	43.6	48.9	69.6	87.2	117.6	130.4	137.6

4.3.12.3 Sizing of the stormwater drainage system

4.3.12.3.1 Pipe flow

4.3.12.3.2 Energy loss through structures

4.3.12.3.3 Determination of water surface profiles

Figure 4.1 Part full pipe flow data

Table 4.3 Loss coefficients for bends

Figure 4.2 Typical stormwater catchment

Figure 4.3 Sump to manhole connection

Table 4.4 Backwater calculation for surcharged stormwater systems

4.3.12.3.4 Outfall water levels

4.3.12.4 Manholes

4.3.12.4.1 Hydraulic flow in manholes

4.3.12.4.2 Angle of connection

4.3.12.5 Waterways

4.3.12.5.1 Manning's 'n'

4.3.12.6 Outlets

4.3.12.7 Stormwater quality control

4.3.12.8 Subsoil drains

4.4 Construction

4.4.1 Construction standard specifications

Replace the clause with the following:

Construction shall be carried out in accordance with the WDC standard construction specifications.

Low Impact Design

Low impact design aims to use natural processes such as vegetation and soil media to provide stormwater management solutions as well as adding value to urban environments. The main principles of low impact design are reducing

stormwater generation by reducing impervious areas, minimising site disturbance, and avoiding discharge of contaminants. Stormwater should be managed as close to the point of origin as possible to minimise collection and conveyance. Benefits include limiting discharges of silt, suspended solids, and other pollutants into receiving waters, and protecting and enhancing natural waterways.

Effective implementation of LID principles typically requires more planning and design input than pipes stormwater systems. Aspects in the design process requiring specific consideration include provision of secondary flow paths, land requirements, and provision for effective operation and maintenance.

Useful guidance on low impact design practices can be found in the following Auckland Regional Council (ARC) publications: "Low impact design manual for the Auckland region, Technical Publication 124; 'Application of low impact design to brownfield sites, Technical Report 2008-20'; and 'Integration of low impact design, urban design and urban form principles, Technical Report 2009-83'.

Low impact design stormwater system

Low impact design is a type of stormwater system that aims to minimise environmental impacts by:

- (a) Reducing peak flow discharges by flow attenuation;
- (b) Eliminating or reducing discharges by infiltration or soakage;
- (c) Improving water quality by filtration;
- (d) Installing detention devices for beneficial reuse.

Low impact design process

Key design considerations include:

- (a) Design objective. The need to be clear about what is being designed for is important to informing decisions on the type of device and maintenance approach that is appropriate in a given context. Low impact devices offer many opportunities to deliver multiple outcomes in addition to their stormwater functionality;
- (b) Device selection. The proper design and position of a product or device within the stormwater treatment train is important. It is critical to select a device or product that is fit for purpose, robust, and effective for delivering the design objective over its design life. Problems with the operation and maintenance of a device can occur when it is inappropriate for a given location or is undersized for its purpose. The respective position of the various components in the treatment train is an important consideration in ensuring the sustained effectiveness of the system;
- (c) Integrated approach. Ensure that those who will become responsible for the ongoing operation and maintenance of low impact devices are involved in the design process. This is critical to informing the development of a practical design that will enable ease of maintenance and develop ownership for ensuring the device performs as it was intended;
- (d) Design for maintenance. Maintenance of devices shall be considered early in the design process. This will assist in the identification of features that will facilitate the ease and efficiency of ongoing operation and maintenance devices. Elements to consider in the design for the maintenance and operation of the systems include:
 - i) Access
 - ii) Vegetation
 - iii) Mulch

- iv) Sediment
- v) Mechanical components
- vi) Vandalism and safety

Low impact design devices

The types of low impact design devices that could be considered for use include:

- (a) Detention ponds;
- (b) Wetlands;
- (c) Vegetated swales;
- (d) Rain gardens;
- (e) Rainwater tanks;
- (f) Soakage pits;
- (g) Filter strips;
- (h) Infiltration trenches/ basins;
- (i) Permeable paving;
- (j) Green roofs;
- (k) Tree pits

Detention ponds

Stormwater ponds are an accepted method of improving stormwater quality and reducing peak downstream flow rates to replicate the pre-development hydrological regime.

Detention ponds can be of the 'dry' or 'wet' type and can be 'on-line' or 'off-line'. The type of pond required should be discussed with the LA at an early stage.

Specific matters to be considered in the pond design include:

- (a) Side slope stability;
- (b) Shallow ledges or batters for safety;
- (c) Ease of access and maintenance including mowing and silt clean out;
- (d) Shape and contour for amenity and habitat value;
- (e) Effectiveness of inlet and outlet structures;
- (f) Overflow design and scour protection;
- (g) Fish passage;
- (h) Pest control (for example mosquitoes and blue-green algae);
- (i) Potential effect on downstream aquatic ecology and habitat;
- (k) Maintenance requirements.

If the TA is to be responsible for pond maintenance it shall be located on land owned by, or to be vested in, the TA or protected by an appropriate easement.

Wetlands

Constructed wetlands can be designed to provide flood protection, flow attenuation, water quality improvement, recreational and landscape amenity, and provision for wildlife habitat.

Specific matters to be considered in wetland design include:

- (a) Catchment area greater than 1 ha;
- (b) Size calculated to achieve water quality volume;
- (c) Forebay to capture coarse sediments;
- (d) Depth not to exceed 1m;
- (e) Sufficient hydraulic capacity for flood flows;
- (f) Sufficient detention time for sediment retention;
- (g) Species to be planted.

If the TA is to be responsible for wetlands maintenance it shall be located on land owned by, or to be vested in, the TA or protected by an appropriate easement.

Vegetated swales

Vegetated swales are stormwater channels that are often located alongside roads or in reserves. While their primary function is conveyance, filtration through the vegetation provides some water quality treatment.

Specific matters to be considered in swale design include:

- (a) Catchment area not greater than 4 ha;
- (b) Longitudinal slope 1% - 5%;
- (c) Slopes flatter than 1% may require underdrains;
- (d) Slopes greater than 5% may require check dams to reduce effective gradient to less than 5%.
- (e) Capacity for a 10% AEP event;
- (f) Velocity not greater than 1.5m/s in a 10% AEP event unless erosion protection is provided;
- (g) Grass length 5-mm-100mm;
- (h) Species to be planted.

An option for swales with very flat longitudinal slopes and high water tables is a wetland swale.

Typical details that may be used in swale design are shown in figures 3.6(A); 3.6(B) and 3.6(C).

Rain gardens

Rain gardens are engineered bioretention systems designed to use the natural ability of flora and soils to reduce stormwater volumes, peak flows and contamination loads. Rain gardens also provide value through attractive design and planning. Specific matters to be considered in rain garden design include:

- (a) System designed to manage a 10% AEP event without significant scour or erosion;
- (b) Overland flow paths to accommodate flows in excess of the design storm;
- (c) Entry and overflow positions to restrict short circuiting;
- (d) Geotextile on side walls;
- (e) An underdrain with a minimum of 50mm gravel cover;
- (f) Pavement design in vicinity of device;

- (g) Soil composition;
- (h) A ponding area;
- (i) Species to be planted;
- (j) Access for maintenance.

Rainwater tanks

Rainwater tanks can be designed to harvest water for non-potable uses such as toilet flushing and watering the garden. This can significantly reduce the demand on the potable water supply from the TA. Where required by the TA rainwater tanks can be configured to provide peak flow attenuation, to reduce stream channel erosion and the load on the stormwater system, with or without reuse.

Specific matters to be considered in rainwater tank design include:

- (a) Capacity; typical 2,000L – 5,000L for domestic re-use and 6,000L -9,000L for dual re-use and attenuation;
- (b) Primary screening to keep out leaves and other coarse debris;
- (c) First-flush diverters to collect first 0.4mm for slow release to ground through a small chamber;
- (d) Backflow prevention;
- (e) Low level mains top-up valve;
- (f) Overflow outlet;

- (g) Gravity or pumped;
- (h) Tight-fitting cover;
- (i) Cool location;
- (j) Aesthetics and convenience.

Soakage devices

Soakage devices such as soak pits and soak holes, filter strips, infiltration trenches/ basins, permeable paving, green roofs, and tree pits can also be considered for managing stormwater from roofs, parking areas, and roads.

Specific matters to be considered in a soakage system include:

- (a) Capacity adequate for a 10% AEP event;
- (b) Rate of soakage determined through a soakage test with an appropriate reduction factor (at least 0.5) applied to accommodate loss of performance over time;
- (c) Capacity to accommodate the maximum potential impermeable area;
- (d) Overland flow paths to accommodate flows in excess of the design storm;
- (e) Confirmation that the soakage system will not have an adverse effect on surrounding land and properties from land stability, seepage, or overland flow issues;
- (f) Soakage system to be located above static groundwater level;
- (g) Pre-treatment device to minimise silt ingress may be required;
- (h) Interception of hydrocarbons;
- (i) Access for maintenance.

For guidance on disposal using soakage on individual lots refer to NZBC clause E1/VM1.

The TA may require a geotechnical assessment to be carried out by an appropriately qualified geo-professional to determine the suitability of soil and groundwater characteristics for any proposed soakage system.

A discharge permit may be required from the regional council for discharge to soakage.

National and international references that may be able to be used in the design and maintenance of such systems are listed in Reference Documents and Related Documents.

Subject to peer review and TA.

4.4.2 Pipeline construction

The construction of pipelines shall be carried out in accordance with the requirements of AS/NZS 2566 Part 1 and Part 2, AS/NZS 2032 (PVC pipes), AS/NZS3725 (concrete pipes) and AS/NZS 2033 (PE Pipes).

4.4.3 Trenching

4.4.4 Reinstatement

4.4.5 Earthworks, erosion and sediment control

4.4.6 Testing

Refer Section 4.8, Tech Specs, Appendix 1.

PART 5: WASTEWATER

5.1 Scope

5.2 General

5.2.1 Objectives

5.2.2 Referenced documents and relevant guidelines

5.3 Design

5.3.1 Design responsibilities

5.3.1.1 High level structure plan

5.3.1.2 Catchment design

5.3.1.3 Extent of works

5.3.1.4 Topographical considerations

5.3.1.5 Geotechnical investigations

5.3.2 Design of the wastewater system

5.3.2.1 Prime considerations

5.3.2.2 Scheme layout

5.3.2.3 Pipes in road and drainage reserves and public open space

5.3.2.4 Pipes in private property

5.3.2.5 Horizontal curves

5.3.2.6 Vertical curves

5.3.2.7 Maintenance structure location

5.3.2.8 Underground services

5.3.3 Clearances

5.3.3.1 Clearance from underground services

5.3.3.2 Clearance from structures

5.3.4 Easements

Table 5.1 Clearances between wastewater pipes and other underground services

5.3.5 Pipe size and gradient

5.3.5.1 Design flow

5.3.5.2 Hydraulic design of pipelines

5.3.5.3 Minimum pipe sizes

Add the following paragraph:

WDC may consider the use of a DN100 property connection for more than one dwelling unit in the case of infill development on an existing lot.

Table 5.2 Industrial/commercial flows

Table 5.3 Coefficients for gravity lines

Table 5.4 Minimum pipe sizes for wastewater reticulation and property connections

5.3.5.4 Limitation on pipe size reduction

5.3.5.5 Minimum grades for self-cleaning

Table 5.5 Minimum grades for wastewater pipes

Table 5.6 Minimum grades for property connections and permanent ends

5.3.5.6 Maximum velocity

5.3.5.7 Minimum cover

5.3.6 Maintenance structures

5.3.6.1 General

5.3.6.2 Location of maintenance structures

Table 5.7 Acceptable MH, MS and TMS options for wastewater reticulation

Add the following note:

(4) The Developer is to refer to WDC if MS or TMS is used.

5.3.6.3 Maintenance structure spacing

5.3.6.4 Manholes

Add the following note to the beginning of the clause:

Refer to Wanganui District Council Supplement Drawings in Appendix A for manhole details.

Note: NZS 4404 drawings do not apply.

Table 5.9 Minimum internal fall through MH joining pipes of same diameter

5.3.6.4.1 Base layout

Figure 5.1 Multiple MSs between MH and “last” MH/TMS

Figure 5.2 Multiple MSs between consecutive MHs

5.3.6.4.2 Allowable deflection through MHs

5.3.6.4.3 Internal falls through MHs

Add the following:

The invert level of a property connection to a terminal manhole shall be a minimum of 150mm above the outlet pipe invert level.

Table 5.8 Maximum allowable deflections through MHs

**Table 5.9 Minimum internal fall through MH joining pipes of same diameter–
*Moved under 5.3.6.4***

5.3.6.4.4 Effect of steep grades on MHs

5.3.6.4.5 Flotation

5.3.6.4.6 Access

5.3.6.4.7 Covers

Replace the first sentence with the following:

MH covers complying with AS3996 shall be used, unless WDC has an alternative standard.

5.3.6.4.8 Bolt-down covers

5.3.6.5 Maintenance shafts (MSs)

5.3.6.5.1 Limiting conditions

5.3.6.5.2 Design parameters

5.3.6.6 Terminal maintenance shafts (TMSs)

5.3.6.6.1 Design parameters

5.3.6.6.2 Property connections into a permanent end

5.3.6.6.3 Dead ends

5.3.7 Venting

5.3.8 Structural design

5.3.8.1 Pipeline materials

5.3.8.2 Structural computations

5.3.8.3 Foundation design and groundwater control

5.3.8.4 Near-horizontal bores

5.3.8.5 Bulkheads

5.3.9. Connections

Add the following note at the end of paragraph:

See drawings CM-WDC-018 to CM-WDC-022 in Appendix A, which show Council and private owners' responsibility for drains.

5.3.9.1 General considerations

5.3.9.2 Requirements of design

5.3.9.3 Number of connections

5.3.9.4 Location of connection

Add the following new clause:

(e) See example drawing CM-WDC-017 in Appendix A.

5.3.9.5 Connection depth

5.3.9.6 New clause:

All connections to have a rodding point constructed approximately 300mm inside the property boundary. See Drawing CM-WDC-017.

5.3.10 Pumping stations and pressure mains

See WDC pump station specification in Appendix M – **Note:** Not currently available.

5.5 Add the following new clause

On-Site Wastewater Disposal System

5.5.1 Process

If on-site treatment and disposal of sewage is necessary in areas where there is no available connection to the WDC sewerage system, then design shall be undertaken as follows, based on an actual assessment of conditions on the site.

The design of an on-site wastewater treatment and disposal system shall be carried out by a suitably qualified and experienced professional, based on a specific assessment of the site conditions. An assessment report and design must be submitted to the format set out in the accompanying guideline (to be developed). The guide sets out the following:

- factors to be addressed in the site assessment
- information to be provided in support of any building consent application
- example site plan showing proposed building location, levels, and location of treatment and disposal system including any reserve area
- high level information on soils and other site specific constraints for on-site wastewater treatment and disposal in the Wanganui District

For any subdivision for which on-site disposal is proposed, proof of the ability to provide a suitable system compatible with building consent requirements for each lot shall be submitted. This will be a preliminary design based on field assessment and design to the standards outlined in clause 5.5.2. The preliminary design shall provide the following information as part of an overall subdivision plan:

- preliminary design based on household occupancy of 5 persons
- location and extent of the wastewater treatment system and disposal area
- location and extent of the required reserve area
- location of any water or drainage courses, water bodies, water sources and fixtures

Prior to approval under section 224 of the Resource Management Act 1991 the Developer shall submit to, and have approved by WDC, a report by a suitably qualified person acceptable to WDC.

If this assessment determines that secondary treatment of effluent is required for any lots, a Consent Notice shall be placed on the title for that Lot which provides the following:

‘The owner of the Lot, prior to the occupation of any dwelling on the Lot, shall install an on-site secondary treated septic tank system approved by the Council and certified by a suitably qualified professional person engaged by the owner’.

A final on-site system design must be carried out for the Building Consent once the house and site development is known. This will be the responsibility of the Building Consent applicant, and is to be noted in the design documentation submitted to the WDC.

5.5.2 Requirements for Design Compliance

The design must comply with the following:

- All systems shall comply with the requirements of Horizons Regional Council Land and Water Regional Plan and the rules contained there-in.
- AS/NZS 1546 On-site domestic wastewater treatment units
- AS/NZS 1547 On-site domestic wastewater management

In addition WDC require the following and these requirements shall have precedence over NZS provisions:

- all dwellings shall install a minimum 4500 l capacity septic tank
- all septic tanks shall be fitted with a proprietary outlet filter to prevent solids carryover to the disposal system
- all sites assessed to have category 1 soils (AS/NZS 1547:2000 - Table 4.2A1 - gravels and sands - free draining) shall be required to provide a pumped dosing system to distribute effluent evenly over the entire disposal system. Traditional gravity trench and beds systems shall not be acceptable.
- all sites assessed as having category 5 or 6 low permeability soils, shall be required to provide an alternative design (to be defined) for disposal of wastewater, as traditional gravity trench or bed disposal systems shall not be acceptable.
- all sites with high or fluctuating water tables, or where there is potential for environmental contamination and/or the sites do not meet the conditions set out in Rule DL 2, shall be required to install an advanced on-site wastewater treatment and disposal system.
- A passive reserve area shall be provided on the lot, either adjacent to the disposal area or located downstream of it. Reserve area requirements shall be as follows¹:
 - 100% of the disposal area for septic tank and trenches
 - 50% of the disposal area for septic tank and pumped dosed systems
 - 33% of the disposal area for advanced wastewater treatment systems

¹ Reference : On-site Wastewater System Guidelines for Manawatu – Wanganui Region; Horizons Regional Council November 2000
: AS/NZS1547:2000 On Site Domestic Wastewater Management.

5.5.3 Maintenance and Ownership

On-site systems shall be designated on the plan. Systems are to remain the maintenance responsibility of, and in the ownership of, the property owner/developer.

Note: See wording in HRC One Plan regarding ongoing Council compliance certification for onsite wastewater disposal systems.

PART 6: WATER SUPPLY

6.1 Scope

6.2 General requirements

6.2.1 Objectives

6.2.2 Referenced documents and relevant guidelines

6.3 Design

6.3.1 Design life

6.3.2 Design tolerance

6.3.3 Impact of consequential damage

6.3.4 Future system expansion

6.3.5 Electrical earthing of water services

6.3.6 Design responsibilities

6.3.6.1 Territorial authority

6.3.6.2 The designer

6.3.7 Pipe selection

6.3.7.1 Sizing of mains

6.3.7.2 Pipe class

6.3.7.2.1 Design pressure (head) - maximum

6.3.7.2.2 Minimum pipe class

6.3.7.2.3 Nominated pipe class

6.3.7.2.4 Pumped mains

6.3.7.3 Pipe material

6.3.8 Fire flow

6.3.8.1 Fire protection services

6.3.8.2 Allowable operating pressures (heads)

6.3.9 Hydraulic design

6.3.9.1 General

6.3.9.2 Network analysis

Add the following paragraph:

Within the area of Wanganui the developer will provide key design information to allow the Wanganui network model to be analysed, if necessary, at the developers expense.

6.3.9.3 Peak flows

Add the following sentence to the end of the clause:

Cross check the results from 6.3.9.3 with 6.11.4 (as modified).

6.3.9.4 Head losses

6.3.9.4.1 Hydraulic roughness values

Table 6.1 Hydraulic roughness values

6.3.9.5 Pressure zones

6.3.9.6 Design (head) requirements

Figure 6.1 Conceptual hydraulic operation of a gravity main

6.3.9.6.1 Design pressure

6.3.9.6.2 Operating pressure/working pressure

6.3.9.6.3 Service pressure

6.3.9.7 Flow velocities

6.3.9.8 Surge analysis

- 6.3.9.8.1 Maximum allowable operating pressure – trunk mains**
- 6.3.9.8.2 Minimum allowable operating pressure**

6.3.9.9 System test pressure

Replace paragraph with the following new paragraph:

The system test pressure is the pressure of hydrostatic testing (static), applied to test the integrity of a pipeline system. The system test pressure generally exceeds the actual design pressure of the system. The excess pressure is accommodated by the inherent design safety factor.

- 6.3.9.10 Temperature rerating of plastic pipes**
- 6.3.10 Layout of water mains**
 - 6.3.10.1 General**
 - 6.3.10.2 Mains layout**
 - 6.3.10.3 Water mains in easements**
 - 6.3.10.4 Types of system configuration**
 - 6.3.10.5 Water mains near trees**
 - 6.3.10.6 Shared trenching**

6.3.10.7(g) Rider mains and duplicate mains

Delete clause.

- 6.3.10.8 Contaminated sites**
- 6.3.10.9 Crossings**
- 6.3.10.10 Crossings of creeks or drainage reserves**
- 6.3.10.11 Location marking of valves and hydrants**
- 6.3.11 Structural design**
 - 6.3.11.1 General**
 - 6.3.11.2 Structural consideration**
 - 6.3.11.2.1 Internal forces**
 - 6.3.11.2.2 External forces**
 - 6.3.11.3 Geotechnical investigations**
 - 6.3.11.4 Pipe selection for special conditions**
 - 6.3.11.5 Above-ground water mains**
 - 6.3.11.6 Trenchless technology**
 - 6.3.11.7 Embedment**

6.3.11.7.1 Pipe cover

Add the following paragraph:

Pipe laying depths:

- 900mm min cover for service mains
- 600mm min cover for rider mains in technical specs
- 900mm min cover for road crossings

6.3.11.7.2 Trench width

Replace clause with the following:

Pipe trench width design considerations shall be based on the minimum side clearances detailed in Appendix A Drawing CM-WDC-016.

- 6.3.11.8 Pipeline restraint**
 - 6.3.11.8.1 Thrust blocks**
 - 6.3.11.8.2 Anchor blocks**

- 6.3.11.8.3 **Restrained joint water mains**
- 6.3.11.9 **Bulkheads**
- 6.3.12 **Reservoirs and pumping stations**
- 6.3.13 **Obstructions and clearances**
- 6.3.13.1 **Underground services**
- 6.3.13.2 **Clearance from underground services**

Table 6.2 Clearances between water mains and underground services

- 6.3.13.3 **Clearance from structures**

Table 6.3 Minimum clearance from structures

- 6.3.13.4 **Clearance from high voltage transmission facilities**
- 6.3.13.5 **Deviation of mains around structures**
- 6.3.14 **Water quality**
- 6.3.14.1 **Materials**
- 6.3.14.2 **Prevention of back siphonage**
- 6.3.14.3 **Water age**

6.4 Valves

6.4.1 General

Replace the last paragraph with the following new paragraph:

Typical valve installation and chamber details are shown in the standard drawings in Appendix A.

6.4.2 Valve types

- 6.4.2.1 **Gate valves**
- 6.4.2.2 **Butterfly valves**
- 6.4.2.3 **Stop valves for reticulation mains**
- 6.4.2.3.1 **Stop valves – location and arrangements**
- 6.4.2.3.1.1 **General**

6.4.2.3.1.2 Branch mains

Replace paragraph 1 with the following new paragraph:

Stop valves shall be located on branch mains adjacent to the through water main. The type of joint to be used (Soc-Soc, FI-Soc or FI-FI) shall be based on the required security of the water mains. For supply mains or reticulation mains <DN250, a tee with a flanged branch and flanged valve shall be used (see Appendix A Drawings WS-WDC-001 and WS-WDC-002).

6.4.2.3.1.3 Pressure zone dividing valves

6.4.2.3.1.4 Secure service connections

Figure 6.2 Branch valve adjacent to main

Figure 6.3 Valve and hydrant combinations for pressure zone dividing valves

Figure 6.4 Secure connection

6.4.2.4 Pressure reducing valves (PRV)

6.4.2.5 Air valves (AV)

6.4.2.5.1 Installation design criteria

Replace paragraph 5 with the following:

The normal size of the large orifice of air valves shall be DN50 for installation on mains.

6.4.2.5.2 Air valves location

6.4.2.6 Scours and pump-out branches

6.4.2.6.1 Scour sizes

Table 6.4 Minimum scour size

6.4.2.6.2 Scour locations

6.4.2.6.3 Flushing points

Replace paragraph with the following new paragraph:

Flushing points should be installed at dead ends on any main or ridermain. (see Appendix A drawing WS-WDC-002). Flushing point can be a fire hydrant.

6.4.3 Add the following new clause

Toby

Tobies to be positioned outside the vehicle crossing, in order to facilitate maintenance.

6.5 Hydrants

6.5.1 General

6.5.2 Hydrants for fire fighting

6.5.3 Hydrant installation

6.5.4 Hydrants for reticulation system operational requirements

6.5.5 Hydrants at ends of mains

6.6 Connections

6.6.1 Connection of new mains to existing mains

6.6.2 Property service connections

Add the following clause:

See Appendix H for property connection sizes. Where there is a water supply in a Right of Way, WDC ownership is to the boundary of the Right of Way

Add the following clause:

High risk connection

Specify RPZ Backflow Preventer at road reserve boundary in accordance with Council's Standard detail. See drawing WS-WDC-010 in Appendix A.

6.7 Termination

Figure 6.5 Elimination of termination points

Figure 6.6 Looped and link principal mains

6.7.1 Permanent ends of water mains

6.7.2 Temporary ends of water mains

6.8 Bends and tees

6.9 System review

6.10 Construction of pipelines

Add the following new paragraphs before 6.10.1:

Construction shall be in accordance with WDC's specifications.

Water mains shall only be installed by persons who have had the requisite inoculations.

6.10.1 Excavation

6.10.2 Bedding

6.10.3 Backfilling and reinstatement

6.10.3.1 Carriageways

6.10.3.2 Berms

Replace paragraph with the following new paragraph:

Pipe trenches under grass berms and footpaths shall be backfilled in accordance with the requirements of Appendix A Drawing CM-WDC-010 & CM-WDC-012.

6.10.3.3 Detector tape

Delete clause:

Detector tape not used by WDC.

6.10.3.4 Tracer wire

Add the following new paragraph:

Tracer wire to be used for all pipe installations.

6.10.4 Pressure testing of water mains

Replace paragraph with the following new paragraph:

Before a new water main is connected to the existing reticulation, a successful pressure test shall be completed. The test shall be carried out as specified in Appendix B, in the presence of the authorised officer.

The reticulation shall withstand a pressure of 1400kpa measured at the lowest point of the section under test or 1.5 times the working pressure at any point in the system, whichever is greater.

The pressure shall be maintained for a period of 15 minutes. After 15 minutes the pressure drop shall not exceed 10% of test pressure.

Pressure test shall be carried out in the presence of an authorised representative of Council.

6.10.5 Discharge of testing water from pipelines

6.10.6 Disinfection of water mains

6.10.7 Discharge of water containing chlorine from pipelines

6.11 Means of compliance with this Standard

6.11.1 Standard pipe sizes

6.11.2 Minimum pipe sizes

6.11.3 Allowable operating pressures (heads)

Table 6.5 Operating pressure limits

6.11.4(a) Minimum flows

Replace clause (a) with the following new clause:

(a) 15L/min for normal residential sites;

6.11.5 Minimum water demand

Add the following at the end of the clause:

Refer 6.3.9.3.

6.11.6 Sizing of mains

Table 6.6 Empirical guide for principal main sizing

Add the following Note to the table:

Note: The "Rural Residential" column does not apply to Wanganui.

Table 6.7 Empirical guide for sizing rider mains

6.11.7 Reticulation layout

6.11.8 Stop valve spacing criteria

Table 6.8 Stop valve spacing criteria

6.12 Add the following new clause

Rural settlements and areas on restricted water supply

All of the above users are advised to have 24 hours on site storage.

These supplies generally do not have fire fighting capability. The flows to the properties are restricted based on land area and land use.

Testable double check backflows are to be installed on each connection and generally supplies are metered.

Each Scheme has its own Rules, Capital Contributions and connection costs.

Connection manifolds and fittings inside the manifolds are the property of Council.

6.13 Add the following new clause

Storage

Where storage is required for domestic purposes, a days storage based on 500 litres/head/day shall be provided.

For industry it is recommended that a days water usage be provided as storage.

6.14 Add the following new clause

Pump stations

Requires specific approval with regard to design, operation, maintenance, safety and compatibility.

Pumps shall be Variable Speed Drive controlled.

Each pump station shall have a standby pump in addition to the duty pump/s.

Pumps, control and telemetry system shall be compatible with other pump stations operated by WDC.

PART 7: LANDSCAPE DESIGN AND PRACTICE

7.1 Scope

Add the following new paragraph at the end of the clause:

WDC has the following policy documents:

- The Street Tree Policy
- Landscape Corridor Plan

7.2 General

7.2.1 Concept stage

7.2.2 Compatibility with engineering design

7.2.3 Long-term public benefit

7.2.4 Recreation reserves

7.2.5 Functional and aesthetic opportunities

7.2.6 Street landscaping

Add the following:

One tree per two properties to be planted in road reserve. Trees to be planted outside alternative properties to create a zig zag tree pattern along a road.

Landscaping, including tree species selection and planting layout to have approval from WDC.

7.3 Design

7.3.1 Location

7.3.1.1 Add the following new paragraph at the end of the clause

Refer to WDC's identified Landscape Corridor Plan.

Figure 7.1 Street tree planting clearances

Figure 7.2 Intersection sight distances for clear sight lines for landscaping

7.3.2 Tree/plant size

7.3.3 Species selection

7.3.3.1 Add the following new paragraph at the end of the clause

Refer to Street Tree Policy for guide to species selection by area.

7.3.4 Quality control

7.3.5 Landscaping structures

7.3.6 Irrigation

7.3.7 Grassing of berms

7.4 Construction

7.4.1 Introduction

7.4.1.2 Replace paragraph with the following new paragraph

The developer is responsible and shall be bonded for the routine maintenance and replacement planting including dead wooding, weed control, mulching, replacing dead trees, shrubs and plants and watering for a period of 24 months from the time of acceptance of as-built landscape plans by WDC or issue of a certificate under the Resource Management Act 1991, whichever is later.

7.4.2 Soil and fertility

7.4.3 Weeds

7.4.4 Mulch

7.4.5 Juvenile tree planting

7.4.5.3 Replace paragraph with the following new paragraph

Juvenile trees shall be of uniform size when planted out, and be a minimum grade of PB40 up to PB95. Trees shall be established in planter bags at the time of planting. Open ground and bare rooted trees shall not be used.

7.4.6 General planting

Figure 7.3 Juvenile tree planting

Figure 7.4 Recommended tree tie configurations

7.4.7 Pruning

7.4.7.3 Replace paragraph with the following new paragraph

Pruning should be carried out at a time appropriate to the species.

7.4.8 Restoration and tidy up

PART 8: RESERVES

8.1 Scope

8.2 General

8.2.2 Add the following new paragraph to the end of the clause

Reserves gazetted under the Reserves Act 1977 may have Reserve Management Plans. Reference shall be made to these plans as part of the initial design process.

8.2.3 Replace the clause with the following new clause

Fencing may be required to the surveyed and pegged boundaries of the reserve.

8.2.4

8.3 Design and construction

8.3.6 Pedestrian accessways

Replace paragraphs 2 and 3 with the following new paragraphs:

All walkways less than 2.5m wide shall be fenced on both sides to the minimum of the Standard shown in figures 8.1 and 8.2 (NZS 4404 : 2004) with a fence constructed within the reserve. Fences over 1.2m high must be able to be seen through with a minimum of 40% transparency.

WDC may also require walkways over 2.5m wide to be fenced on both sides to the minimum of the Standard shown in Figures 8.1 and 8.2 (NZS 4404:2004), with a fence constructed within the reserve subject to individual requirements.

8.3.7 Presentation of reserves

8.3.8 Fencing of reserves

Replace the clause with the following new clause:

An acceptable fencing style is to be agreed upon with WDC at the time of the design process. Consideration needs to be given to:

- consistency of fencing style and materials
- maintaining a visual connection between the reserve and private property
- gateways with access to the reserve.
- CPTED factors (Crime Prevention through Environmental Design).

Suggested fencing types are given in figure 8.1 (urban) and figure 8.2 (rural).

8.3.9 Add the following new clause

Fencing of reserves – road frontage

Wanganui District Council Policy 159: Rural Roads Fencing and Gates Across Roads, 7.4.2003, refers –

The WDC may require a landowner to fence their roadside frontage where it is considered public safety or convenience renders it expedient.

PART 9: POWER, TELECOMMUNICATIONS, GAS

9.1 Scope

This section sets out requirements for the provision of stormwater, wastewater and water supply systems, power, telecommunications and gas, and their locations in the road. The scope of these provisions applies to both future and existing roads and applies equally to all network services.

Note – Network utility services in roads are subject to the Utilities Access Act 2010 and the Infrastructure (Amendments Relating to Utilities Access) Act 2010.

9.2 General

9.2.1 Legislation

References legislation and documents are listed in the Referenced Documents section of this Standard.

9.2.2 Definitions

For the purpose of section 9, the following definitions shall apply:

Code Means the national code of practice approved in accordance with the Utilities Access Act 2010.

Corridor Manager Has the same meaning given to it by the Utilities Access Act 2010.

9.2.3 Context

The developer is required to make all arrangement with the appropriate network utility operators for the supply and installation of stormwater, wastewater, water supply and electric power and to the extent applicable for the provision of telecommunication and gas reticulation.

The developer shall provide satisfactory evidence to the TA corridor manager that the network utility operators are prepared to reticulate the subdivision and that agreement on the financial arrangements for the installation of each supply has been reached. The following applies to each utility:

- (a) Stormwater, wastewater and water supply. Where water supply and wastewater pipes, and stormwater systems are in the road reserve, they shall be installed at the time of road construction to the requirements of the TA corridor manager and the water supply authority for water pipes, or the TA for wastewater pipes and stormwater systems;
- (b) Electric power. The supply of electric power will generally be by means of an underground system. Ducts shall be installed at the time of the road construction to the requirements of the electrical supply authority and TA corridor manager. Where the developer is intending to provide electric power other than by underground system; the developer shall provide alternative supply arrangements for approval of the TA;
- (c) Telecommunications. Arrangements shall be made with the telecommunication supplier for the reticulation of telecommunication facilities. Where only part of this reticulation is being supplied initially the arrangements shall include the requisite space being maintained for the installation of the remainder of the reticulation at a later date. Ducts will be supplied to the subdividing developer at the time of road construction for installation in the carriageway formation to the requirements of the telecommunication supplier and the TA corridor manager.

Developers to supply Telecom Completion Certificate prior to applying for the 224 Certificate from Council. This is required where Telecommunications are required as part of Resource Consent Conditions.

- (d) Gas. Where an existing gas supply is available or likely to be available to serve a subdivision, the developer may make appropriate arrangements with the gas supply authority and the TA corridor manager, and at the time of road construction, install such ducts/ pipes as may be required.

The developer should consult with gas utility as early as possible in the subdivision process. Experience in Wanganui District has indicated that gas has often been an “after thought” which inhibits an efficient trenching and pipe laying process.

The developer shall follow the requirements of the Code to the extent that they apply to the utility installation for the development.

9.3 Design

9.3.1 Plans

Copies of the plans of the development/ subdivision shall be forwarded by the developer to all the affected network utility operators at an early date to facilitate the design of the reticulation.

C9.3.1

It is important that all of the affected network utility operators are advised by the developer of any amendments to the development plan. Information when available on the type of dwellings and likelihood of more than one dwelling on any lot, will be valuable for design purposes.

- 9.3.1.1 In preparing the engineering plans consideration shall be given to the requirements of the network utility operators and the TA corridor manager for:

- (a) Minimum cover to cables and pipes;
- (b) The network utility operator’s desired position for the cable and piping within the road berm as agreed with the TA corridor manager;
- (c) The minimum separation distances between power or telecommunication cables, and gas or water mains.
- (d) The width of berm which shall be clear of other services and obstructions to enable efficient cable-laying operations.
- (e) Gas trench specifications are as specified in NZS 5258:2003, Gas Distribution.

C9.3.1.1

Reference should be made to each network utility operator and the TA corridor manager for their specific requirements. Refer to the Code for further information.

9.3.2 Utilities above ground

Utilities should preferably be sited within the road berm or on land which will legally become part of the road but which is set back outside the normal road line. Alternatively separate lots (public utility reserves) or easements over private property may be used. If there are any concerns raised about the safety of above ground structures, the risk should be assessed in accordance with the requirements of the Code and any significant risks mitigated.

9.4 Construction

9.4.1 Underground cabling

Underground cable laying shall be achieved by the most appropriate method considering the nature of subsoil and potential damage to the infrastructure and shall be to the approval of the TA corridor manager.

C9.4.1

The trenchless method is preferred in existing urban areas for underground cabling. Refer to the Code for further information.

9.4.2 Materials

Materials and sizes of ducts and pipes shall comply with the requirements of the network utility operators and the colours should be in accordance with the Department of Labour's *Guide for safety with underground services*.

9.4.3 Conversion to underground on existing roads

Where a proposed subdivision fronts on to an existing road, the conversion of overhead reticulation to underground will in some instances be desirable. Agreement on the feasibility and benefit shall be first agreed between the network utility operator and the TA.

9.4.4 Industrial and commercial subdivisions

The servicing requirements for commercial and industrial areas are often indeterminate. Close liaison between the developer and the network utility operator is advisable, particularly immediately before cabling is installed so that changes can be incorporated to accommodate extra sites or the requirements of a particular industry.

Telecom ducts always installed in industrial/ commercial areas so future customers only require Telecom to pull-in and joint cables.

Note: WDC will be requesting the utility provider to certify that the developer has installed the service to the utility's satisfaction.

9.4.5 Location of services

9.4.5.1 Position in the road

Position and depth shall be agreed with the appropriate network utility operator and the TA corridor manager in accordance with the provisions of the Code.

9.4.5.2 Recording of underground services

TAs shall maintain a procedure for recording the location of their underground services on plans which are readily available to the public at the TA office. It is unlikely that the TA will be able to provide a service for utility services other than those for which it is immediately responsible. These will usually be stormwater, wastewater, and water supply. Other authorities or network utility operators are required to maintain similar records of the existence and detailed location of their services for ready reference.

9.4.5.3 Accuracy and tolerance

It is essential that all services be laid to predictable lines if there is to be a reasonable opportunity of laying new services in existing systems. In addition to specifying the location of any service in the road berm, there should also be a tolerance which shall on no account be exceeded without proper measurement and recording on the detailed record plan. Tolerance of $\pm 300\text{mm}$ in the horizontal and $\pm 100\text{mm}$ in the vertical is a practicable requirement.

9.4.6 Trenches

9.4.6.1 When new subdivision construction is undertaken the backfilling and compaction of trenches to a state of stability consistent with the future of the surface shall be carried out in accordance with the Code and to the satisfaction of the TA corridor manager.

9.4.6.2 Where underground services are laid after the initial construction of the subdivision or where they are extended from an existing area into a new one, special attention shall be given to the opening and reinstatement of trenches in accordance with the Code and to the satisfaction of the TA corridor manager.

C9.4.6

TAs are recommended to prepare standard specifications for the opening of trenches and the restoration of surfaces. Network utility operators are in turn recommended to comply with the requirements of such specifications.

Refer to the Code for further guidance.

Appendices

Appendix A	Drawings
Appendix B	Water Main Pressure Testing Criteria
Appendix C	Water Supply Disinfection Specification
Appendix D	Related Documents
Appendix E	Basic Steps of a Subdivision
Appendix F	Traffic Effects Assessment
Appendix G	Approved materials
Appendix H	Supporting Materials
Appendix I	Technical Specifications
Appendix J	Schedule 1D As-Built Plans and Documents
Appendix K	Copy of "Guidance on use of producer statements"
Appendix L	WDC updated Table 3.1 – Road Design Standards – Urban (speed limit \leq 70km/h)
Appendix M	WDC Pump Station Specification
Appendix N	Testing Schedule
Appendix O	Alternative Design Procedure

Appendix A: Drawings

Roading

RD-WDC-001	Urban Residential Concrete Path
RD-WDC-002	Urban Residential Sealed Path
RD-WDC-003	Right of Way Crossing Concrete Path
RD-WDC-004	Right of Way Sealed Footpath
RD-WDC-005	Right of Way Concrete Path (4-6 Dwellings)
RD-WDC-006	Right of Way Sealed (4-6 Dwellings)
RD-WDC-007	Commercial Concrete Path
RD-WDC-008	Commercial Sealed Footpath
RD-WDC-009	Maximum Change of Grade (Urban Vehicles)
RD-WDC-010	Maximum Breakover Angles
RD-WDC-011	Rural Heavy
RD-WDC-012	Rural Residential
RD-WDC-013	Typical Cross Section – Cul De Sac
RD-WDC-014	Typical Cross Section – Section
RD-WDC-015	Typical Cross Section – Right of Way
RD-WDC-016	Typical Cross Section – Services
RD-WDC-017	Transformer Location (Preferred)
RD-WDC-018	Footpath Construction
RD-WDC-019	Mobility Crossing Ramps
RD-WDC-020	Kerb and Channel Details

Common Details

CM-WDC-001	Linetypes and Symbols
CM-WDC-002	Depth Contours Cut/Fill Areas
CM-WDC-003	Typical MH As Built Level Requirements
CM-WDC-004	Typical Sewer Manhole
CM-WDC-005	Open Back Sump
CM-WDC-006	Max Pit
CM-WDC-007	Catch Pit
CM-WDC-008	Stormwater Connection to Kerb & Channel (standard)
CM-WDC-009	Stormwater Connection to Kerb & Channel (sealed system)
CM-WDC-010	Stormwater Connection to Existing System
CM-WDC-011	Stormwater Connection to Kerb (well up sump)
CM-WDC-012	Sanitary Sewer Connection Upgrade of Existing Lateral
CM-WDC-013	Sanitary Sewer Lateral Connection Detail
CM-WDC-014	Carriageway Restoration
CM-WDC-015	Manhole Haunching
CM-WDC-016	Pipe Installation
CM-WDC-017	Rodding Point
CM-WDC-018	Sanitary Sewer Discharge Lot with Street Frontage
CM-WDC-019	Sanitary Sewer Discharge Rear Lots on ROW (2)
CM-WDC-020	Sanitary Sewer Discharge Rear Lots on ROW (3+)
CM-WDC-021	Sanitary Sewer Discharge Public Sewer on Private Land
CM-WDC-022	Sanitary Sewer Discharge Common Private Sewer
CM-WDC-023	Alternative Subsoil Drain
CM-WDC-024	Subsoil Details
CM-WDC-025	Installation of Lead-ins for Telecommunications (new subdivisions)

Water Supply

WS-WDC-001	Valve Installation
WS-WDC-002	Hydrant Installation

WS-WDC-003	Box-Frame Details
WS-WDC-004	Connections – Service Marking
WS-WDC-005	Connections – Two Riders off Fire Main
WS-WDC-006	Connections – Half Way Rider Link to Main
WS-WDC-007	Connections – Mains to Main
WS-WDC-008	Connections – Combie Tee (PVC Main)
WS-WDC-009	Connections – Combie Cross (PVC Main)
WS-WDC-010	Reduced Pressure Valves
WS-WDC-011	Service Connection Main or Rider to Boundary
WS-WDC-012	Principal Main to Boundary

LEGEND		LT THICKNESS
	EXISTING STORM SEWER	0.25mm
	EXISTING SANITARY SEWER	0.25mm
	EXISTING WATER	0.25mm
	EXISTING GAS	0.25mm
	EXISTING POWER CABLES	0.25mm
	EXISTING TELECOM CABLES	0.25mm
	NEW STORM SEWER	0.70mm
	NEW SANITARY SEWER	0.70mm
	NEW WATER	0.70mm

STANDARD SYMBOLS	
	POWER POLE
	STREET LIGHT
	EXISTING MANHOLE
	NEW MANHOLE
	FIRE HYDRANT
	SUMP
	ISOLATION VALVE
	TOBY VALVE
	NON RETURN VALVE

DRAWN BY MWH

SCALES :	INIT	DATE
DESIGNED		
DRAWN	LGS	7/09
CHECKED		
APPROVED		

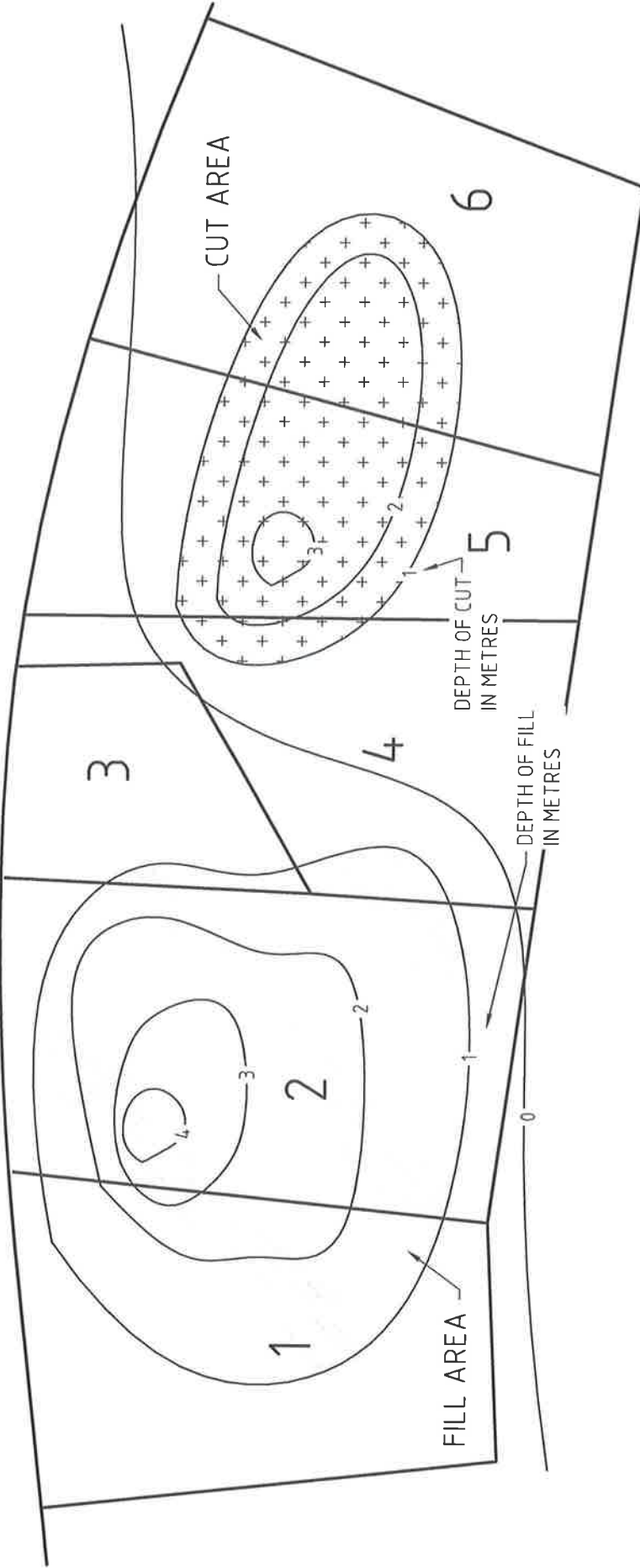
WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 LINE TYPES AND SYMBOLS



Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
	Sheet No	Rev
	CM-WDC-001	2



SMITH STREET



NOTE
 CONTOURS ARE TO DEPICT THE LEVEL OF CUT AND FILL ON SECTIONS.
 THE CUT AND FILL AREAS NEED TO BE OF CONTRASTING HATCH / COLOUR

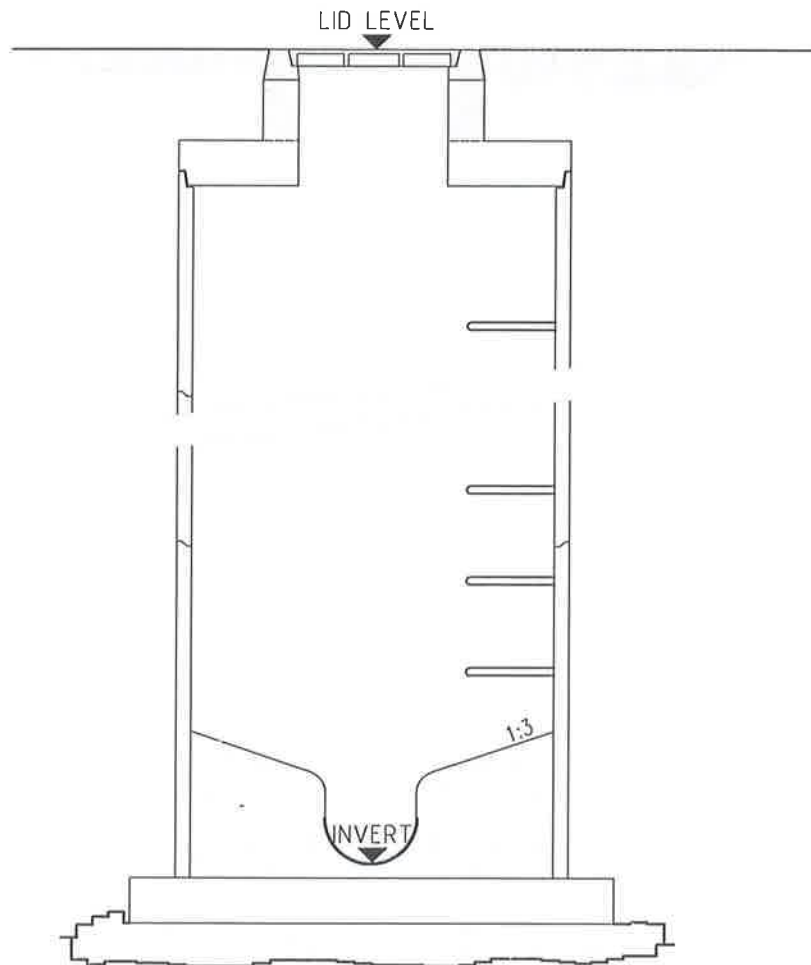
WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS



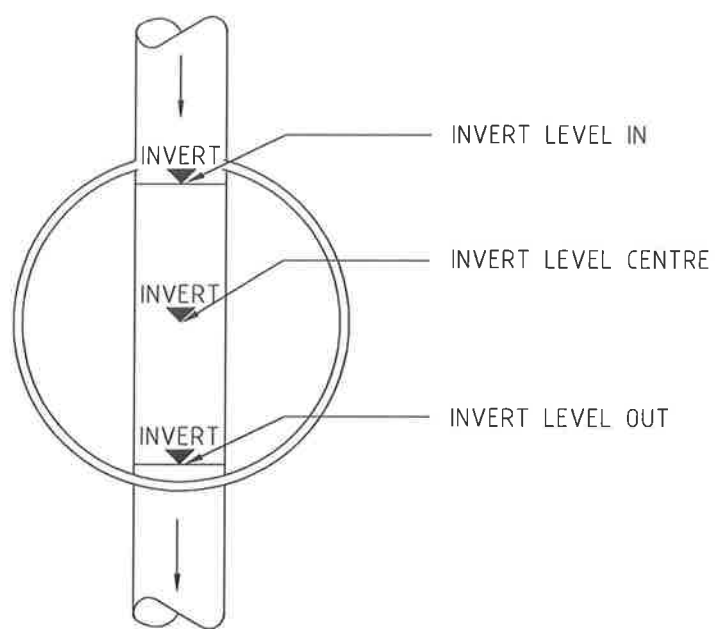
Status Stamp	CONSTRUCTION
Date Stamp	8/06/12
Sheet No	CM-WDC-002
Rev	1

SCALES : NTS		INIT	DATE
DESIGNED		LGS	7/09
DRAWN			
CHECKED			
APPROVED			

REV	AMENDMENTS	DATE	INITIAL	APPROVED



SECTION
NTS



PLAN
NTS

DRAWN BY MWH

SCALES :	1:25		
	INIT	DATE	
DESIGNED			
DRAWN	LGS	6/12	
CHECKED			
APPROVED			

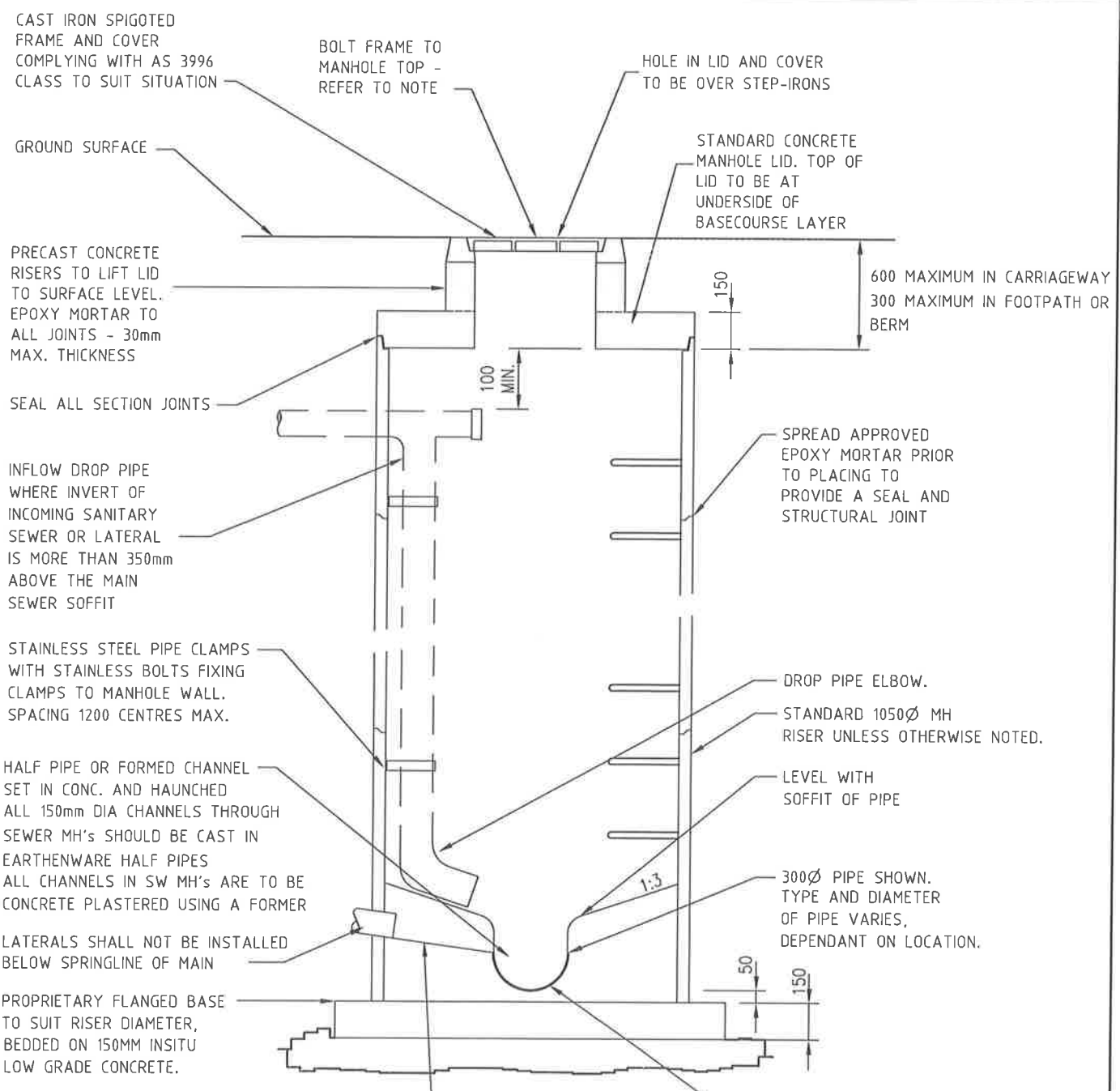
WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
TYPICAL MANHOLE AS BUILT
LEVEL REQUIREMENTS



Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-003	Rev.
		1

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK

SERVER: WANGANUI (NZWANTS01) TAB/DWG: TAB-DWG



NOTES

- ALL MANHOLES OVER 1.0m DEEP SHALL BE PROVIDED WITH STEP IRONS EVENLY SPACED AT 300mm NOMINAL VERTICAL INTERVALS. THE LOWEST IRON SHALL NOT BE MORE THAN 450mm ABOVE THE HAUNCHING AND THE HIGHEST NOT MORE THAN 600mm BELOW THE TOP SURFACE OF THE MANHOLE COVER. ALL STEP IRONS SHALL BE 225mm 'AYMROO' STEP IRONS OR APPROVED EQUIVALENT COMPLYING WITH NZS/AS 1657-1992
- ALL JOINTS AND/OR CONNECTIONS TO THE MANHOLE SHALL BE SEALED WITH EPOXY MORTAR. IN HIGH TRAFFICKED AREAS OR AS DIRECTED BY THE ENGINEER CAST IRON FRAMES ARE TO BE BOLTED TO THE CONCRETE MANHOLE TOP WITH 3x12mm DIA. BOLTS, EQUALLY SPACED

SEWER LINE PASSING THROUGH TYPICAL MANHOLE. THIS DETAIL IS NOT TYPICAL OF ALL SITUATIONS. A FLEXIBLE JOINT SHALL BE PROVIDED AT A DISTANCE FROM THE OUTSIDE FACE OF THE MANHOLE STRUCTURE AS DETAILED ON THE CONSTRUCTION DRAWINGS AND IN THE SPECIFICATION.

DRAWN BY MWH

SCALES :	1:25
DESIGNED	INIT DATE
DRAWN	LGS 11/05
CHECKED	
APPROVED	

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 TYPICAL SEWER MANHOLE



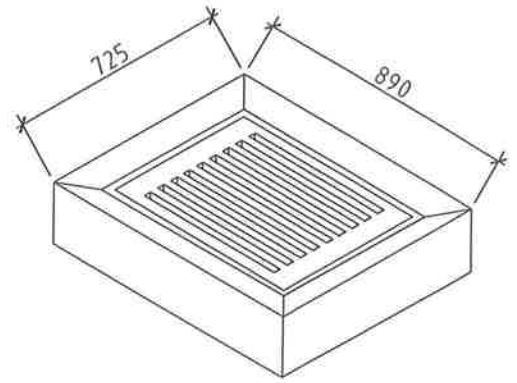
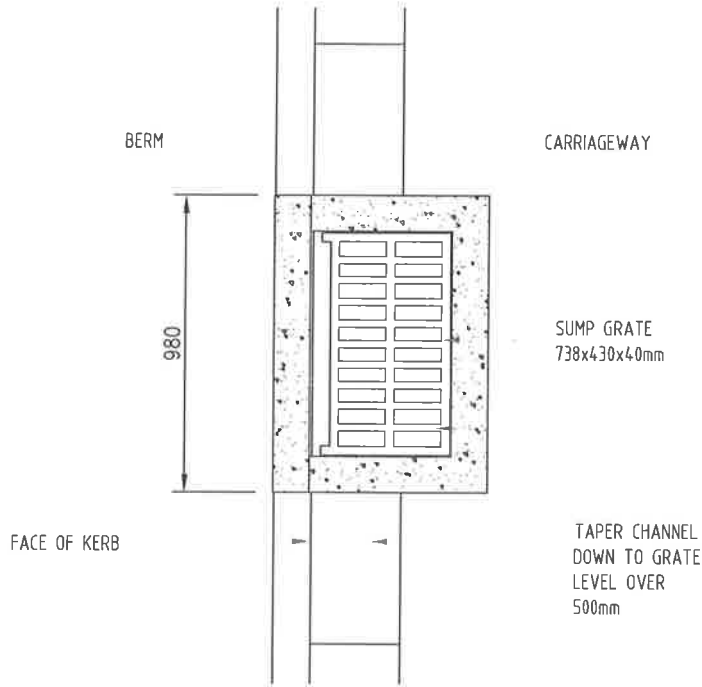
Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-004	Rev.
		2

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK

TAB/DWG : TAB-DWG

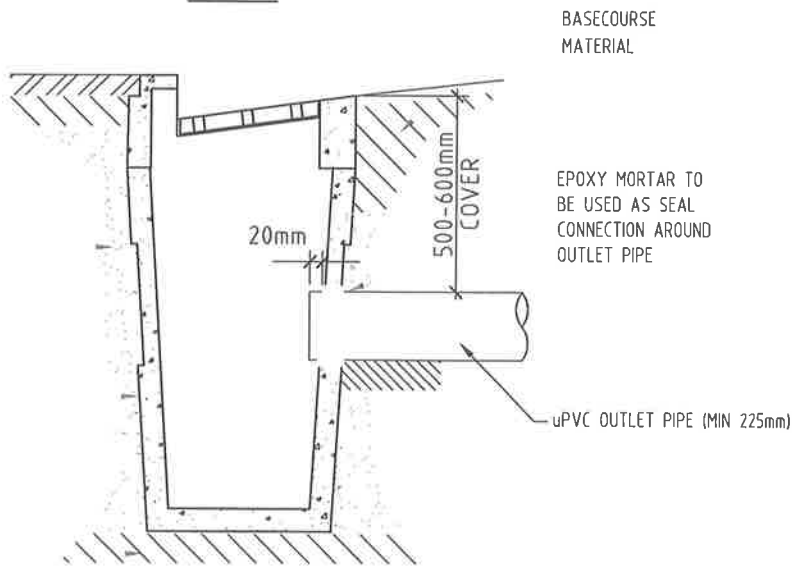
SERVER: WANGANUI (NZWAN1501) TAB/DWG : TAB-DWG

TO BE INSTALLED WITH
STANDARD CATCHPIT



ALTERNATIVE YARD
SUMP TOP

PLAN



SECTION

ALTERNATIVE SUMP ARRANGEMENTS
NEED PRIOR APPROVAL FROM
WANGANUI DISTRICT COUNCIL

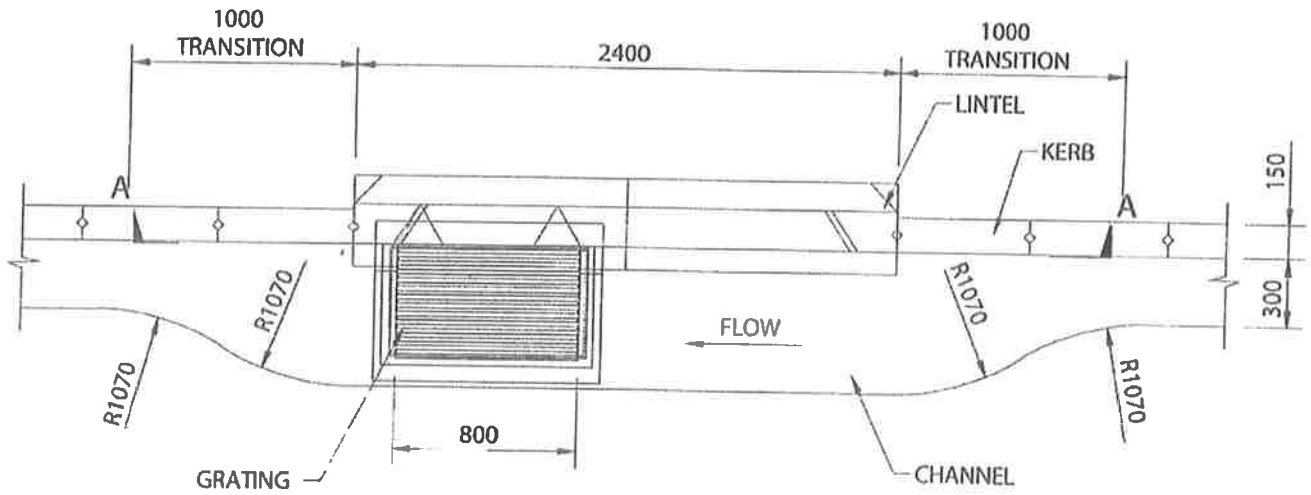
DRAWN BY MWH

SCALES :	1:25		
	INIT	DATE	
DESIGNED			
DRAWN	LGS	11/05	
CHECKED			
APPROVED			

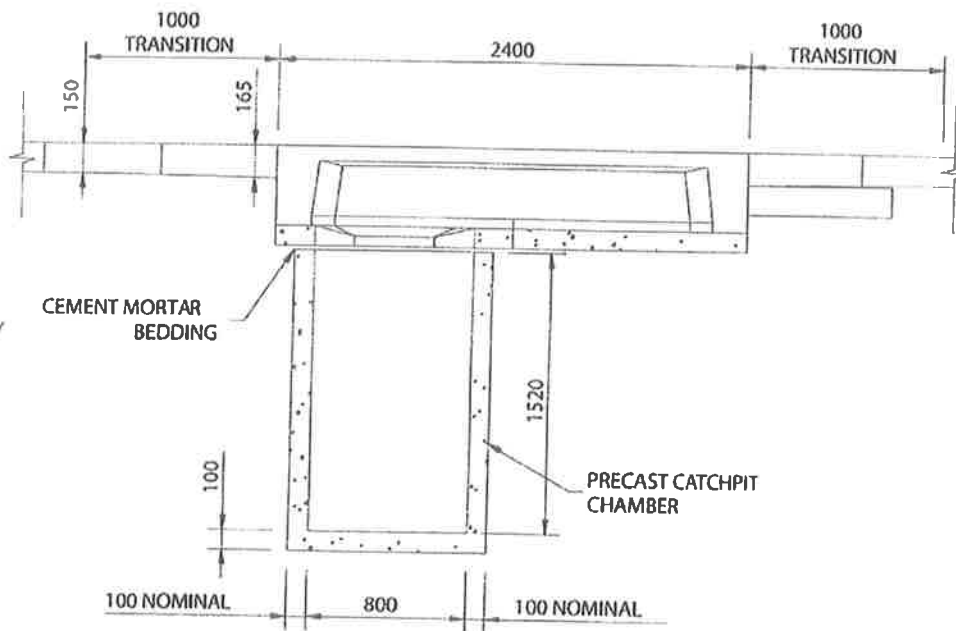
WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
OPEN-BACK SUMP



Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-005	Rev.
		2



Plan



Section A-A

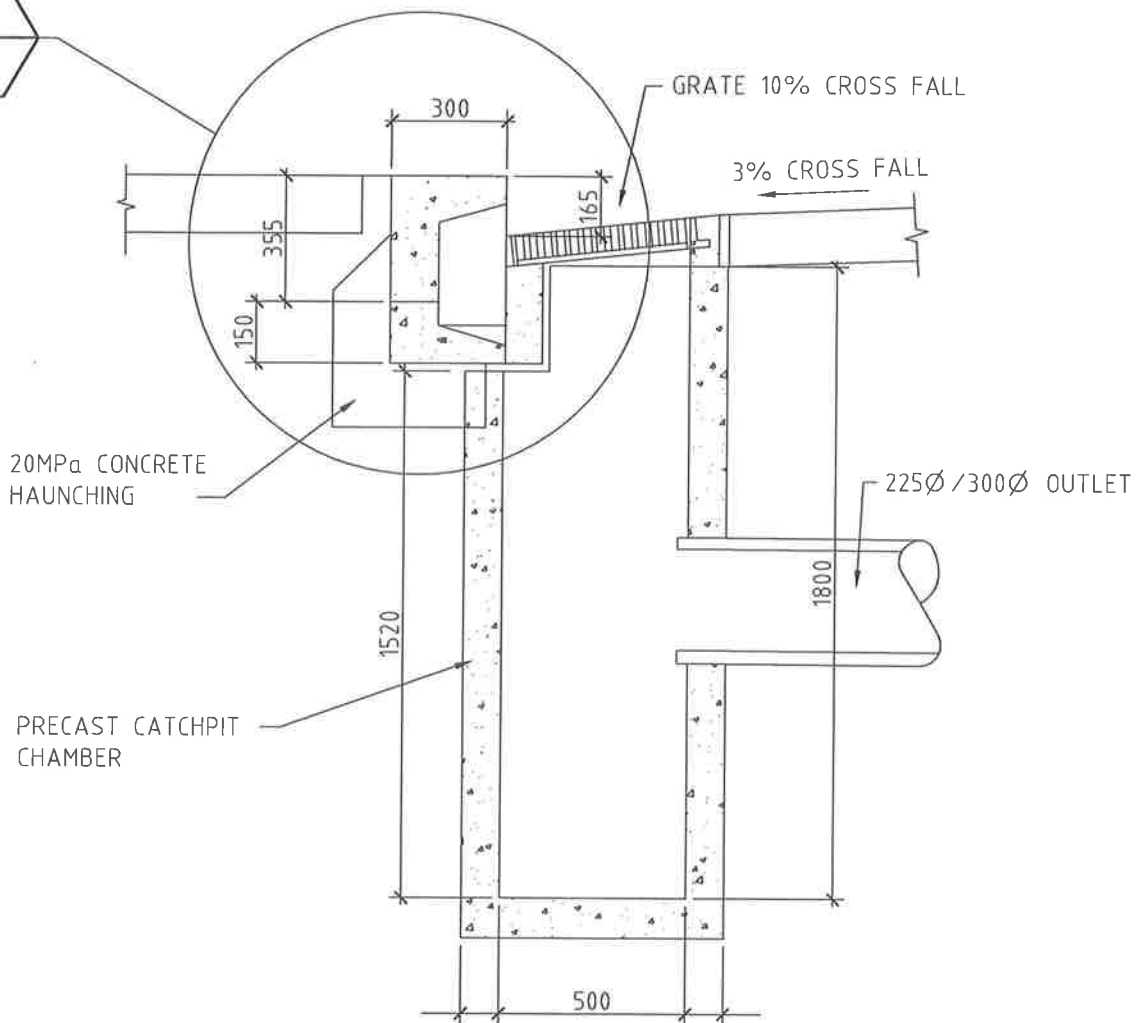
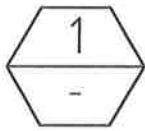
DRAWN BY MWH

SCALES :	1:25	
DESIGNED	INIT	DATE
DRAWN	LGS	6/12
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 HYNDS TYPE MAX PIT

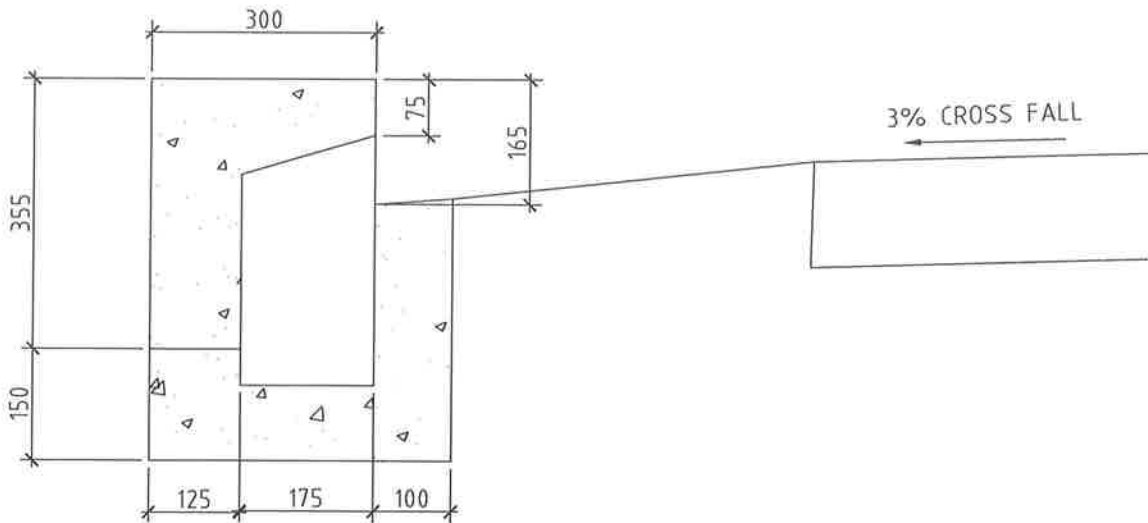


Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-006	Rev.
		2



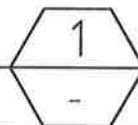
SECTION THROUGH CATCHPIT

SCALE NTS:



DETAIL

SCALE NTS:



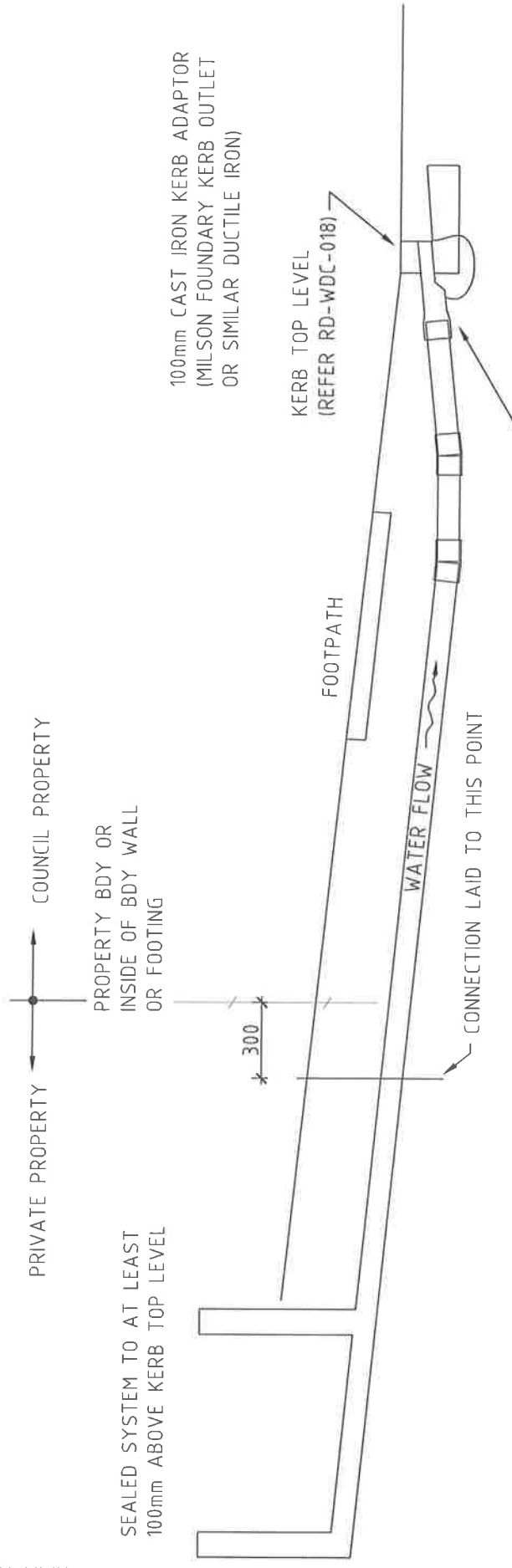
DRAWN BY MWH

SCALES :	1:25		
DESIGNED	INIT	DATE	
DRAWN	LGS	6/12	
CHECKED			
APPROVED			

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
CATCHPIT



Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-007	Rev.
		1



- * DN80 OR DN100 PN12 PRESSURE PIPE - PIPE TO BE LAID WITH MANUFACTURERS BRAND ON TOP
 - * PROVIDE FALL BETWEEN PROPERTY BOUNDARY AND KERB
 - * PREFERABLY PIPE TO BE LAID AT RIGHT ANGLE TO KERB FACE (NOTE: CONNECTION SHALL NOT BE LAID FACING UPSTREAM INTO THE CHANNEL FLOW)
 - * TRENCH BASE AND FINAL BACKFILL SHALL BE COMPACTED TO A HARD SURFACE
 - * TRENCH BASE WIDTH NOT TO EXCEED 200mm
- BREAK OUT REAR OF KERB 100mm FROM OUTLET, CLEAR AWAY LOOSE CONCRETE AND PROVIDE KEY FOR NEW CONCRETE

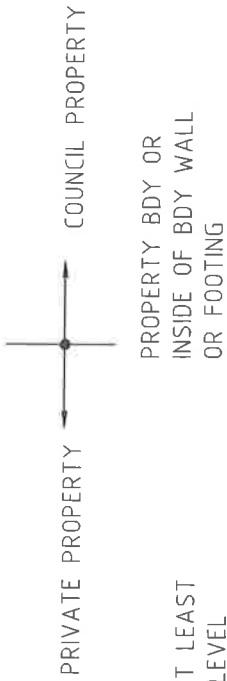
DRAWN BY MWH

SCALES :	1:25
DESIGNED	INIT
DRAWN	LGS
CHECKED	11/05
APPROVED	

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 STORMWATER CONNECTION TO K & C (STANDARD)

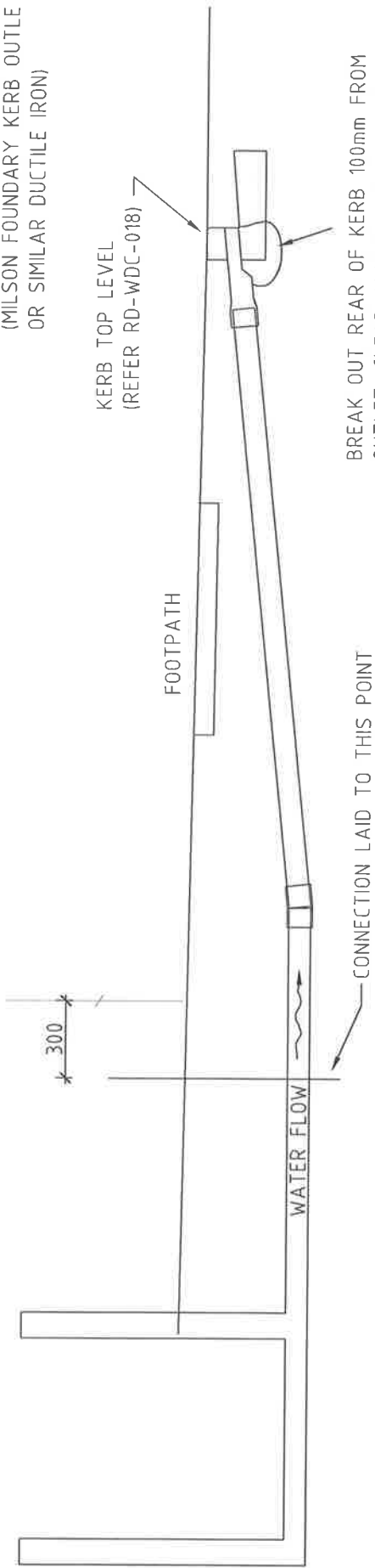


Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-008	Rev.
		2



SEALING SYSTEM TO BE AT LEAST 100mm ABOVE KERB TOP LEVEL

100mm CAST IRON KERB ADAPTC (MILSON FOUNDARY KERB OUTLE OR SIMILAR DUCTILE IRON)



BREAK OUT REAR OF KERB 100mm FROM OUTLET, CLEAR AWAY LOOSE CONCRETE AND PROVIDE KEY FOR NEW CONCRETE

- * DN80 OR DN100 PN12 PRESSURE PIPE - PIPE TO BE LAID WITH MANUFACTURERS BRAND ON TOP
- * PREFERABLY PIPE TO BE LAID AT RIGHT ANGLE TO KERB FACE (NOTE: CONNECTION SHALL NOT BE LAID FACING UPSTREAM INTO THE CHANNEL FLOW)
- * TRENCH BASE AND FINAL BACKFILL SHALL BE COMPACTED TO A HARD SURFACE
- * TRENCH BASE WIDTH NOT TO EXCEED 200mm

DRAWN BY MWH

SCALES :	1:25	
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

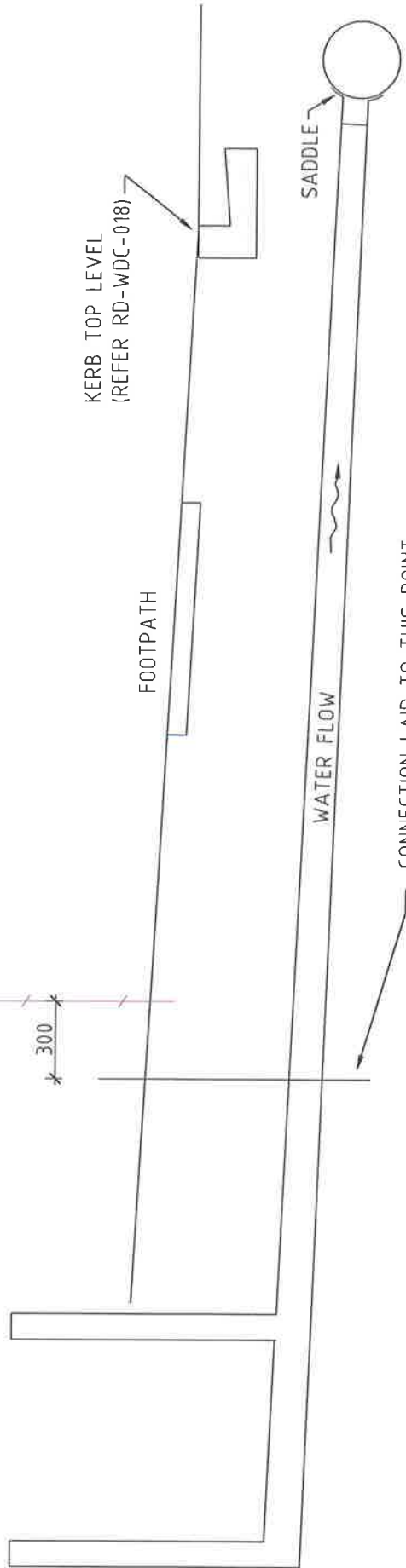
WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 SW CONNECTION TO K & C (SEALED SYSTEM)



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	CM-WDC-009	Rev.
		2

PRIVATE PROPERTY COUNCIL PROPERTY
 PROPERTY BDY OR
 INSIDE OF BDY WALL
 OR FOOTING

SEALED SYSTEM TO BE AT LEAST
 100mm ABOVE KERB TOP LEVEL



- * DN80 OR DN100 PN12 PRESSURE PIPE - PIPE TO BE LAID WITH MANUFACTURERS BRAND ON TOP
- * PREFERABLY PIPE TO BE LAID AT RIGHT ANGLE TO KERB FACE (NOTE: CONNECTION SHALL NOT BE LAID FACING UPSTREAM INTO THE CHANNEL FLOW)
- * TRENCH BASE AND FINAL BACKFILL SHALL BE COMPACTED TO A HARD SURFACE
- * TRENCH BASE WIDTH NOT TO EXCEED 200mm
- * IDEAL MINIMUM GRADIENTS 80mm DIA - 1 IN 90 , 100mm DIA - 1 IN 120
- * RISER SHAFT TO BE USED WHERE THE DEPTH OF THE MAIN IS GREATER THAN 1.5m (REFER CM-WDC-012)

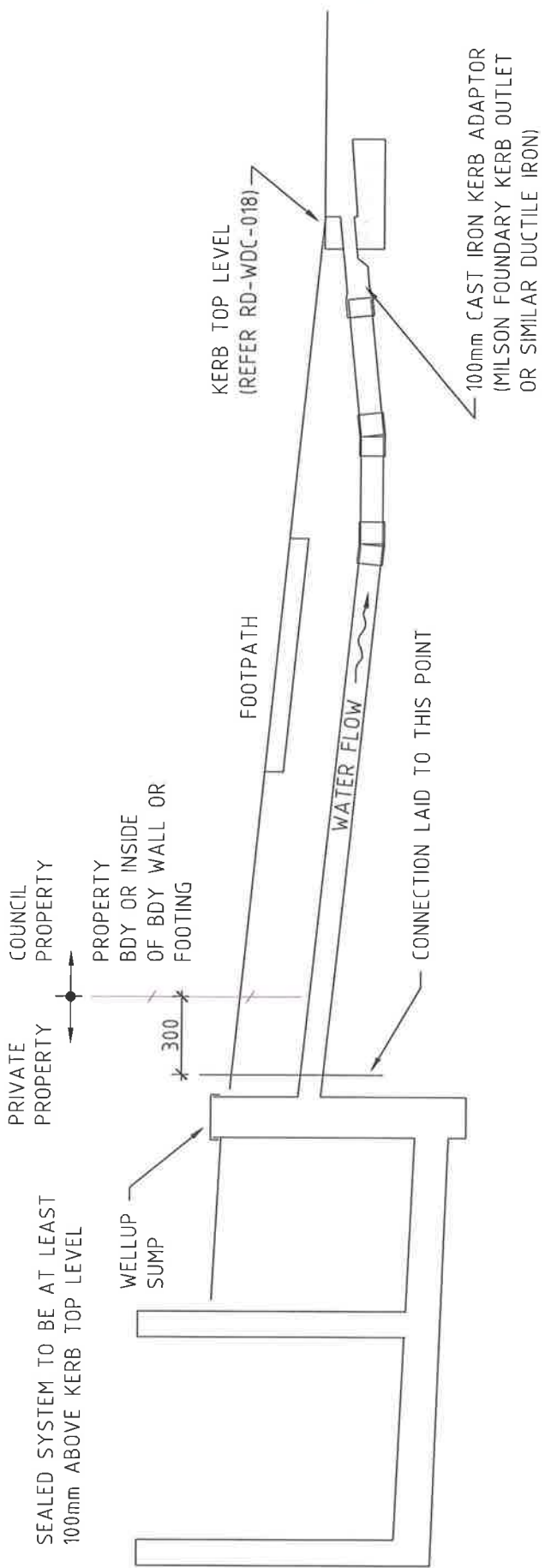
DRAWN BY MWH

SCALES :	1:25	
DESIGNED	INIT	DATE
DRAWN	LGS	3/06
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 SW CONNECTION TO EXISTING SYSTEM



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	CM-WDC-010	Rev.
		2



- * DN80 OR DN100 PN12 PRESSURE PIPE - PIPE TO BE LAID WITH MANUFACTURERS BRAND ON TOP
- * PREFERABLY PIPE TO BE LAID AT RIGHT ANGLE TO KERB FACE (NOTE: CONNECTION SHALL NOT BE LAID FACING UPSTREAM INTO THE CHANNEL FLOW)
- * TRENCH BASE AND FINAL BACKFILL SHALL BE COMPACTED TO A HARD SURFACE
- * TRENCH BASE WIDTH NOT TO EXCEED 200mm
- * IDEAL MINIMUM GRADIENTS DN 80 - 1 IN 90 , DN 100 - 1 IN 120

DRAWN BY MWH

SCALES :	1:25
DESIGNED	INIT DATE
DRAWN	LGS 6/06
CHECKED	
APPROVED	

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 SW CONNECTION TO KERB (WELLUP SUMP)

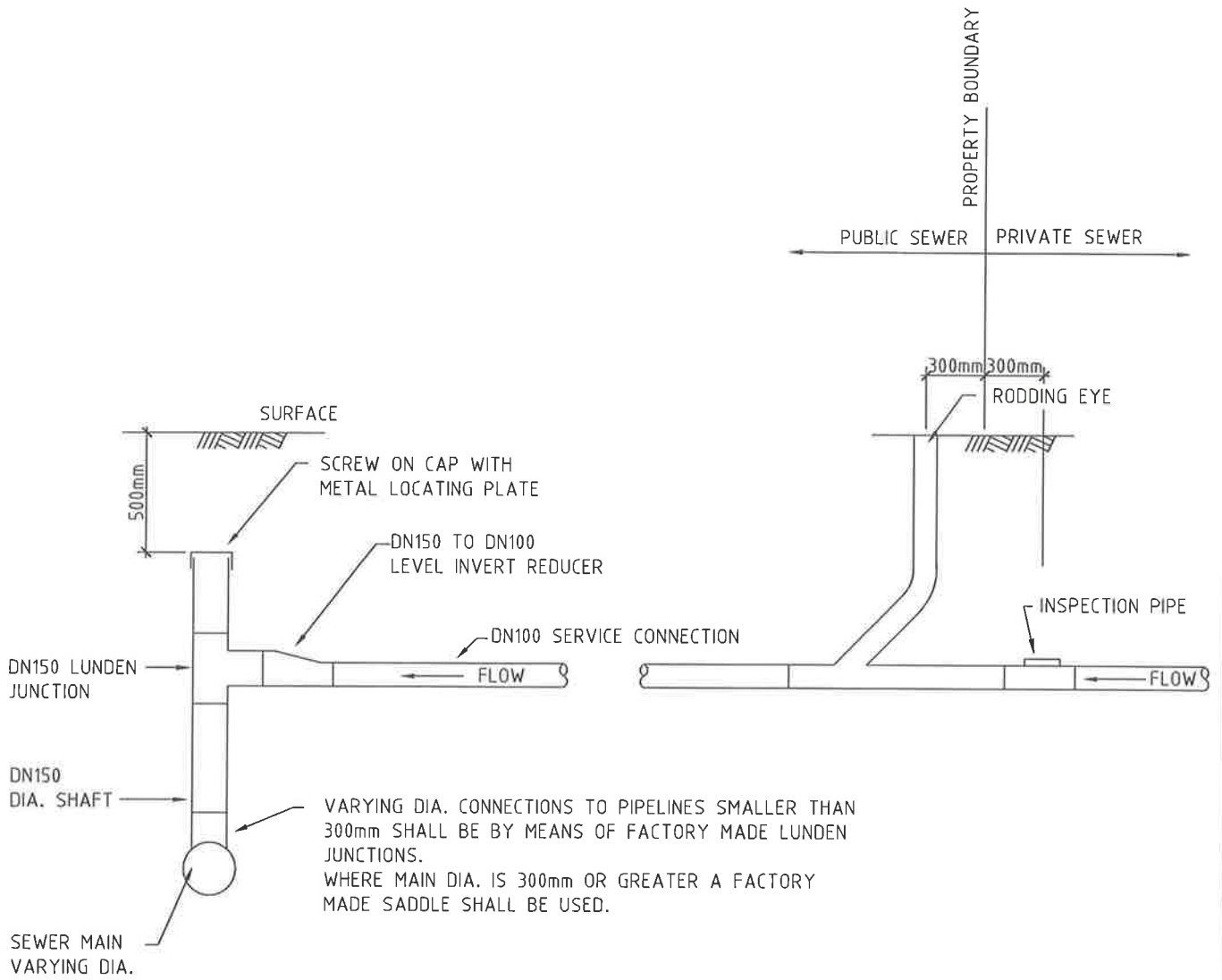


Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-011	Rev.
		2

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK

TAB/DWG : TAB-DWG

SERVER: WANGANUI (NZWAN1501)



A MAXIMUM OF 2 SERVICE CONNECTIONS TO ANY ONE SHAFT

DEPTH TO INVERT OF MAIN IS GREATER THAN 1.5m

DRAWN BY MWH

SCALES :	1:25
DESIGNED	INIT DATE
DRAWN	LGS 11/05
CHECKED	
APPROVED	

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
SANITARY SEWER CONNECTION DETAIL
UPGRADE OF EXISTING LATERAL

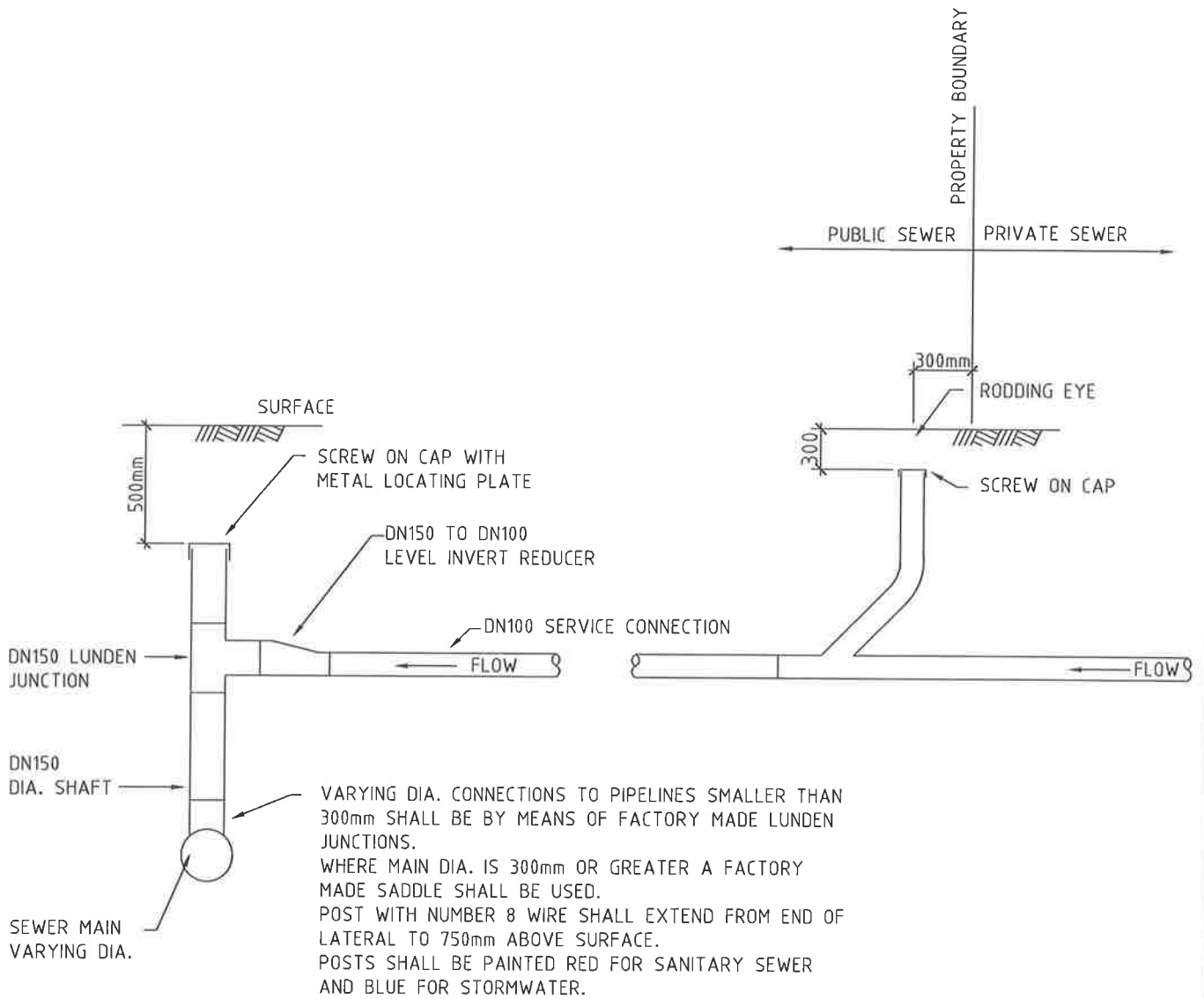


Status Stamp	CONSTRUCTION
Date Stamp	8/06/12
Sheet No.	CM-WDC-012
Rev.	2

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK

TAB/DWG : TAB-DWG

SERVER: WANGANUI (NZWANT501)



A MAXIMUM OF 2 SERVICE CONNECTIONS TO ANY ONE SHAFT

APPLICABLE WHERE DEPTH TO INVERT OF MAIN IS GREATER THAN 1.5m

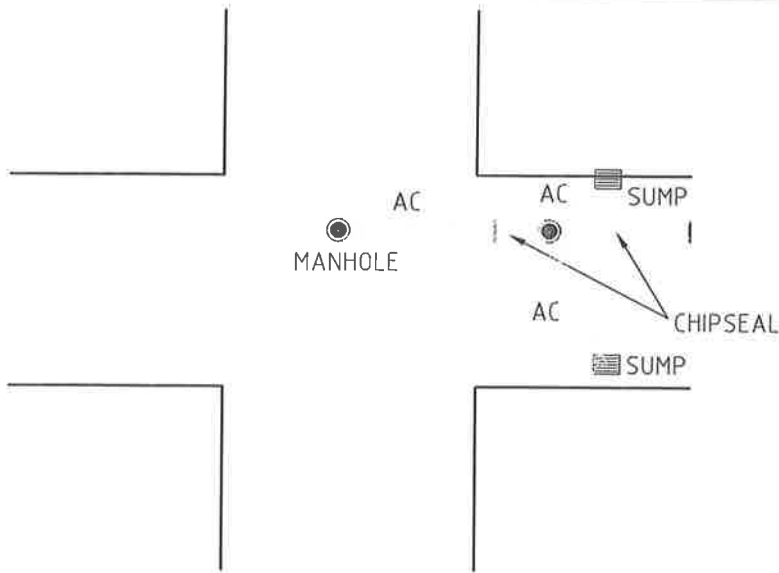
DRAWN BY MWH

SCALES :	1:25
DESIGNED	INIT DATE
DRAWN	LGS 11/05
CHECKED	
APPROVED	

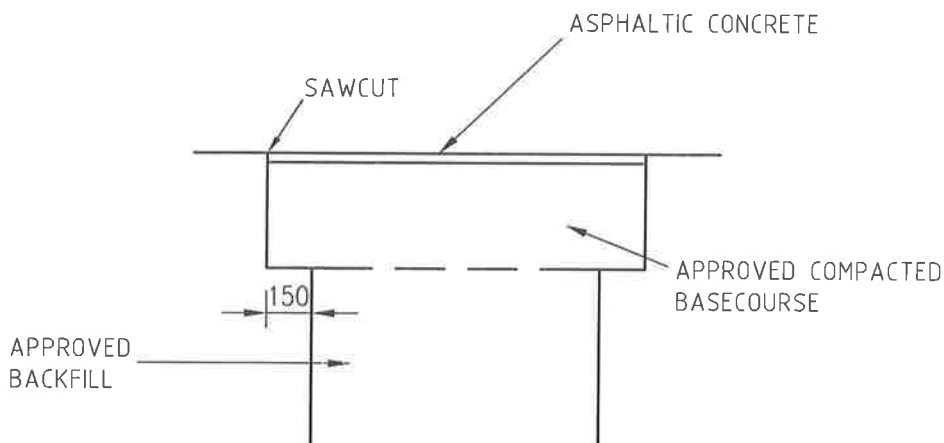
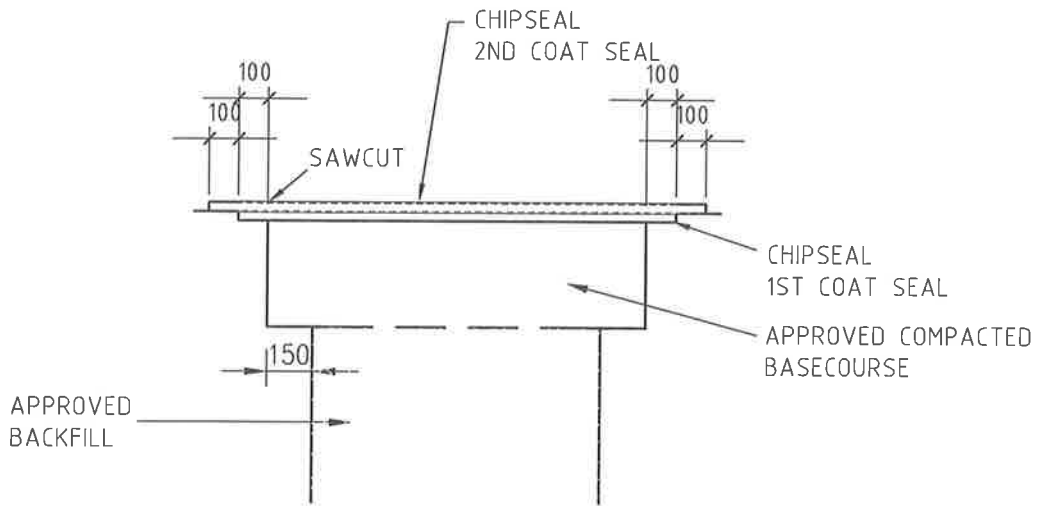
WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 LATERAL CONNECTION DETAIL



Status Stamp	CONSTRUCTION
Date Stamp	8/06/12
Sheet No.	CM-WDC-013
Rev.	2



TYPICAL INTERSECTION
SHOWING SURFACE TREATMENT



CARRIAGEWAY RESTORATION DETAIL

SCALE 1:25

DRAWN BY MWH

SCALES :	AS NOTED	
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
CARRIAGEWAY RESTORATION

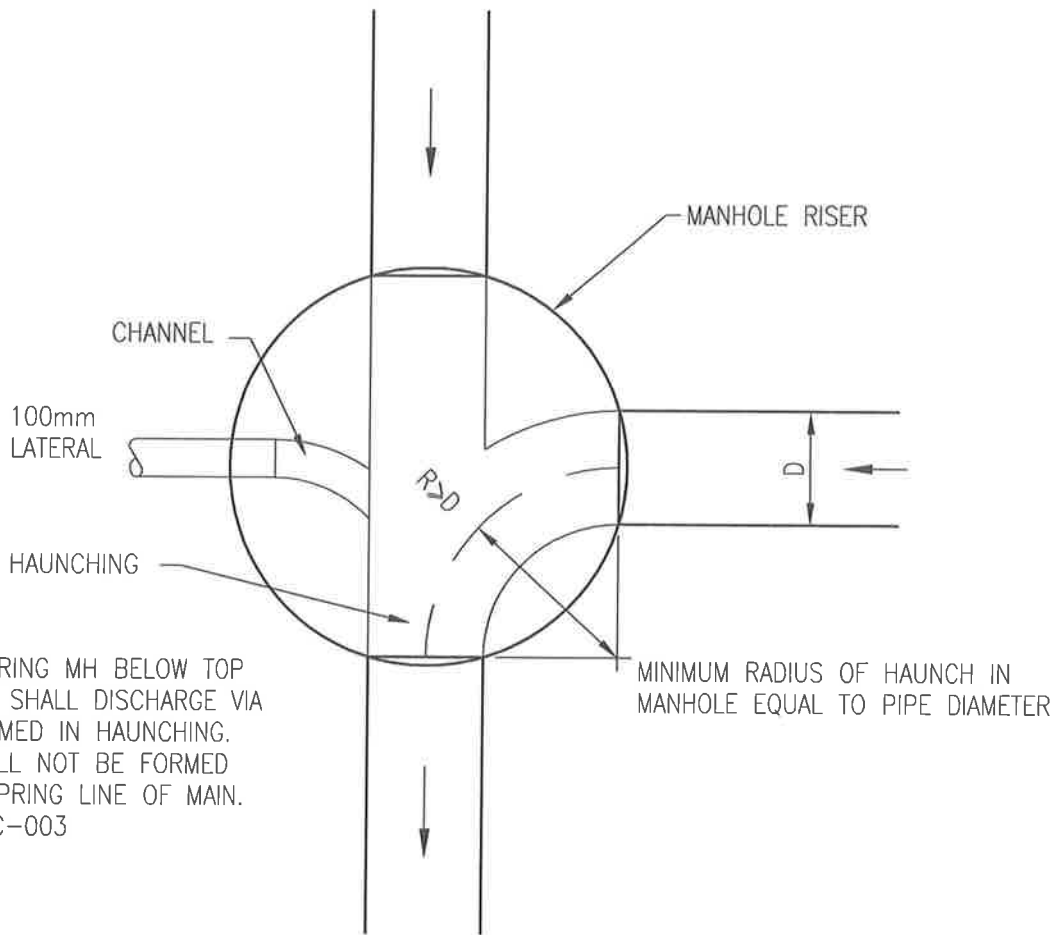


Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-014	Rev.
		2

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK

TAB/DWG : TAB-DWG

SERVER : WANGANUI \NZWANT501



LATERALS ENTERING MH BELOW TOP OF HAUNCHING SHALL DISCHARGE VIA CHANNELS FORMED IN HAUNCHING. CHANNELS SHALL NOT BE FORMED LOWER THAN SPRING LINE OF MAIN. REFER CM-WDC-003

MANHOLE HAUNCHING

SCALE 1:20

DRAWN BY MWH

SCALES :	AS NOTED	
	INIT	DATE
DESIGNED		
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 MANHOLE HAUNCHING



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	CM-WDC-015	Rev.
		2

APPROVED
BACKFILL

OVERLAY ZONE
SEE TABLE

SIDE SUPPORT ZONE

BEDDING ZONE

SEE
TABLE

COMPACTED EMBEDMENT
MATERIAL

NEW PIPE
LOCATED CENTRALLY

PVC PIPELINE INSTALLATION

SCALE 1:25

MINIMUM EMBEDMENT ZONE DIMENSIONS			
NOMINAL DIAMETER (mm)	BEDDING DEPTH	HORIZONTAL CLEARANCE	OVERLAY DEPTH
100	75	100	100
150, 175, 225	100	150	150
300, 375	100	200	150
475-575	150	300	150

APPROVED
BACKFILL

150 MIN

0.1D < DN 1200
0.3D > DN 1200

SEE
TABLE

D
PIPE
OUTSIDE
DIAMETER
(NOT DN)

OVERLAY ZONE
COMPACTED ORDINARY FILL

NEW PIPE
LOCATED CENTRALLY

HAUNCH ZONE
COMPACTED SELECT FILL

BED ZONE
COMPACTED SELECT FILL
SEE TABLE FOR DEPTH

CONCRETE PIPELINE INSTALLATION TYPE H2 SUPPORT

SCALE 1:25

NOMINAL DIAMETER mm	BED ZONE DEPTH	SIDE CLEARANCE
UP TO DN1200	100	D/6 OR 150
> DN1200	150	WHICHEVER IS THE GREATER

DRAWN BY MWH

SCALES :	AS NOTED	
	INIT	DATE
DESIGNED		
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARDS - DETAILS
PIPELINE INSTALLATION



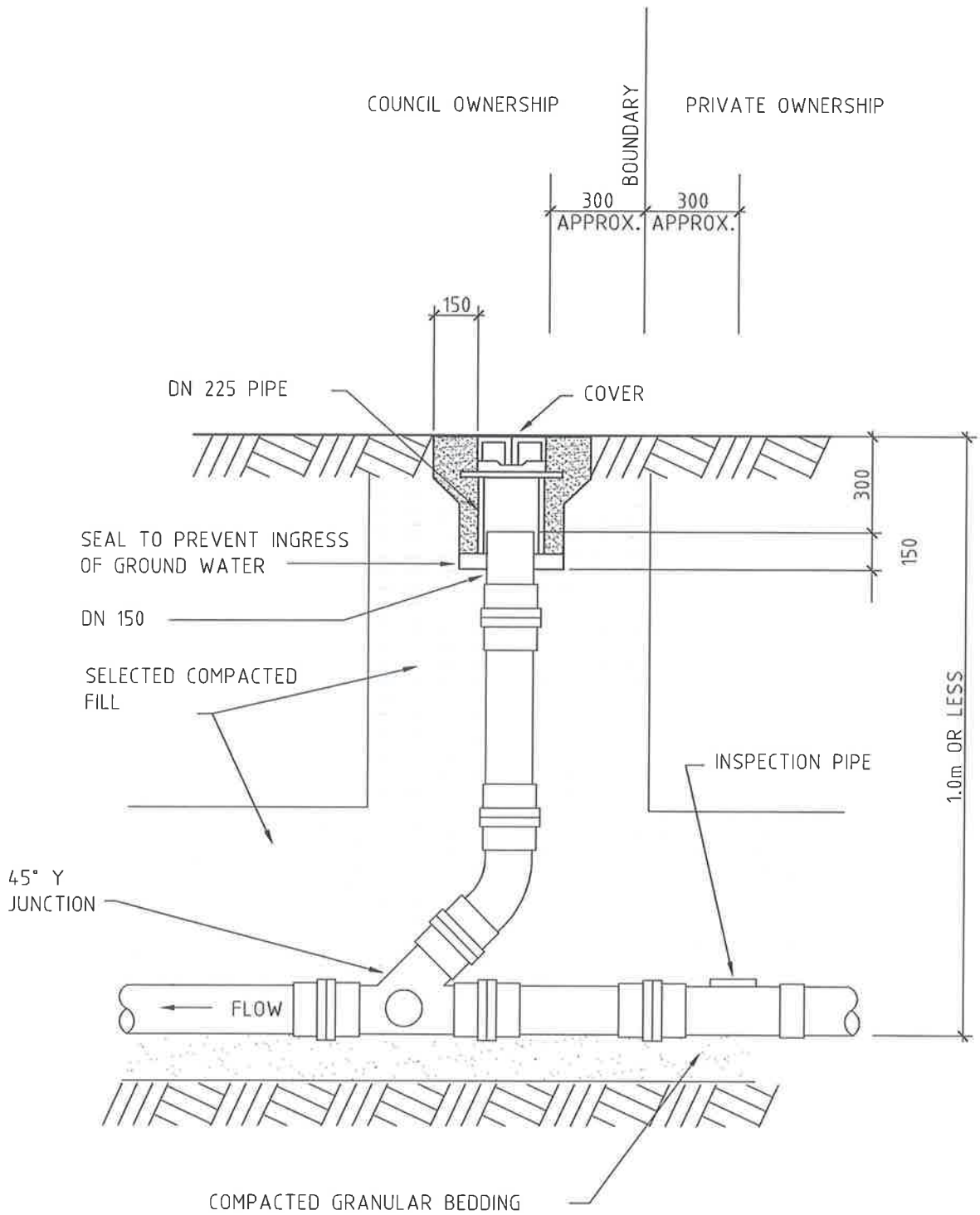
Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-016	Rev.
		1

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK SERVER: WANGANUI (NZWANTS01) TAB/DWG : TAB-DWG

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK

TAB/DWG : TAB-DWG

SERVER: WANGANUI (NZWAN1501)



NOTE:

1. CAST IRON COVER REQUIRED IN SEALED CARRIAGEWAY
2. RODDING RISER TUBE INSTALLED OUTSIDE BOUNDARY AT EVERY CONNECTION

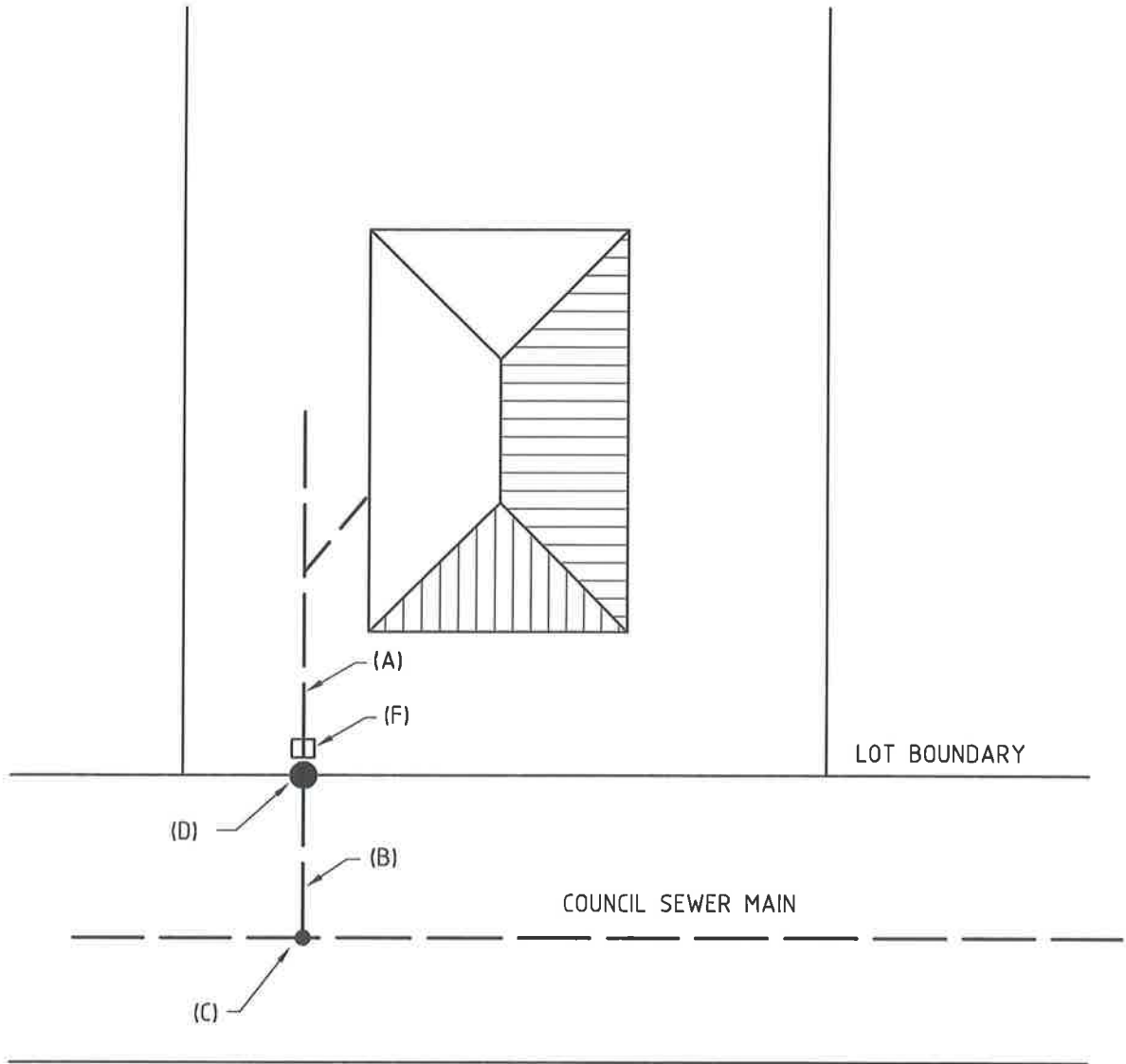
DRAWN BY MWH

SCALES :	AS NOTED	
	INIT	DATE
DESIGNED		
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 RODDING POINT FOR PIPELINES
 150mm DIA OR LARGER



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	CM-WDC-017	Rev.
		2



(A)	PRIVATE DRAIN HOUSE OWNERS RESPONSIBILITY
(B)	CONNECTION - COUNCIL OWNED COUNCIL RESPONSIBILITY (LIMITED LIABILITY)
(C)	POINT OF CONNECTION TO COUNCIL MAIN
(D)	POINT OF DISCHARGE
(F)	INSPECTION POINT

LOT WITH STREET FRONTAGE

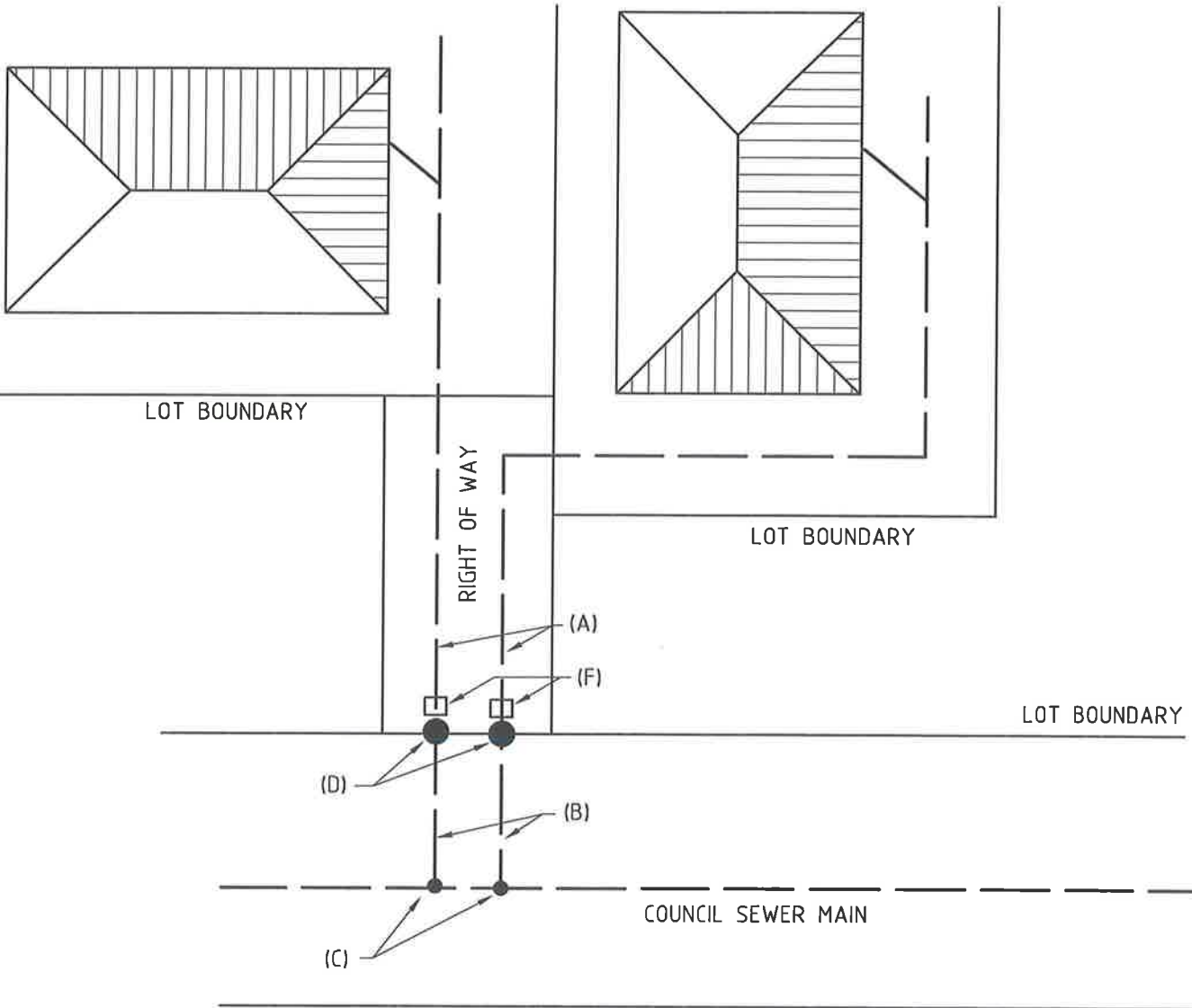
DRAWN BY MWH

SCALES :	1:25	
	INIT	DATE
DESIGNED		
DRAWN	LGS	6/09
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
SANITARY SEWER
POINT OF DISCHARGE AND CONNECTION



Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-018	Rev.
		1



(A)	PRIVATE DRAIN HOUSE OWNERS RESPONSIBILITY
(B)	CONNECTION- COUNCIL OWNED OWNERS RESPONSIBILITY (LIMITED LIABILITY)
(C)	POINT OF CONNECTION TO COUNCIL MAIN
(D)	POINT OF DISCHARGE
(F)	INSPECTION POINT

REAR LOTS ON RIGHT OF WAY
UP TO 2 CUSTOMERS

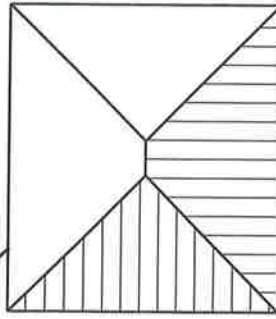
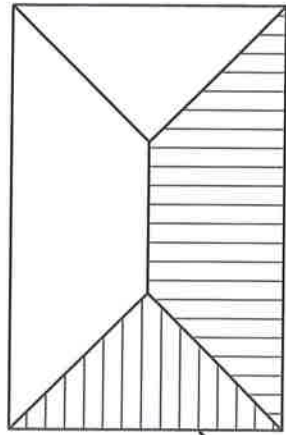
DRAWN BY MWH

SCALES :	1:25	
	INIT	DATE
DESIGNED		
DRAWN	LGS	6/09
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
SANITARY SEWER
POINT OF DISCHARGE AND CONNECTION



Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-019	Rev.
		1



LOT BOUNDARY

LOT BOUNDARY

RIGHT OF WAY

LOT BOUNDARY

(D)

(B)

COUNCIL SEWER MAIN

(C)

(A)

(A)

(A)

(F)

(E)

(A)	PRIVATE DRAIN HOUSE OWNERS RESPONSIBILITY
(B)	CONNECTION - COUNCIL OWNED COUNCIL RESPONSIBILITY (LIMITED LIABILITY)
(C)	POINT OF CONNECTION TO COUNCIL MAIN
(D)	POINT OF DISCHARGE
(E)	SHARED RESPONSIBILITY OF ALL SERVED OR UPSTREAM USERS UNLESS PREVIOUS AGREEMENT FOR TAKEOVER AS COUNCIL DRAIN HAS BEEN MADE WITH THE COUNCIL.
(F)	INSPECTION POINT

REAR LOTS ON RIGHT OF WAY

3 OR MORE CUSTOMERS

DRAWN BY MWH

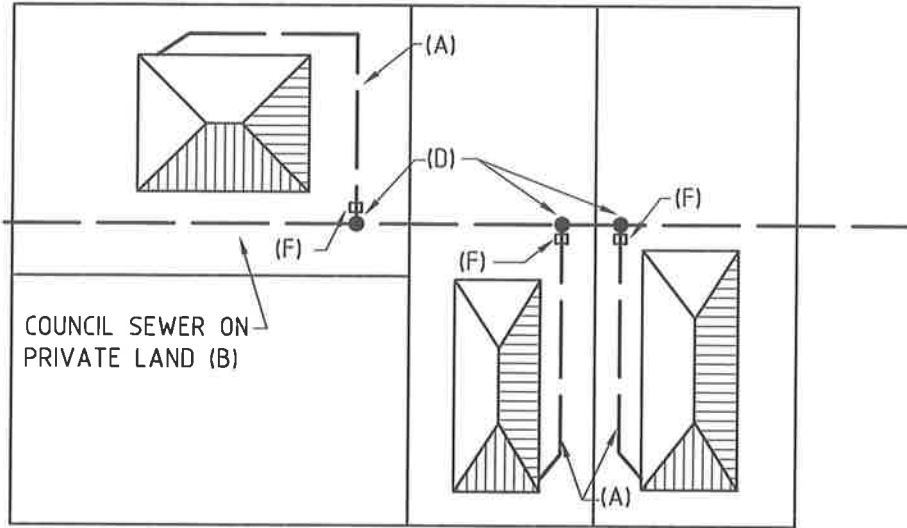
SCALES :	1:25
DESIGNED	INIT DATE
DRAWN	LGS 6/09
CHECKED	
APPROVED	

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
SANITARY SEWER
POINT OF DISCHARGE AND CONNECTION



Status Stamp	CONSTRUCTION
Date Stamp	8/06/12
Sheet No.	1
Rev.	
CM-WDC-020	

COUNCIL SEWER MAIN



(A)	PRIVATE DRAIN - HOUSE OWNERS RESPONSIBILITY
(B)	MAIN - COUNCIL OWNED COUNCIL RESPONSIBILITY (LIMITED LIABILITY)
(D)	POINT OF DISCHARGE AND POINT OF CONNECTION TO COUNCIL MAIN
(F)	INSPECTION POINT

PUBLIC SEWER ON PRIVATE LAND

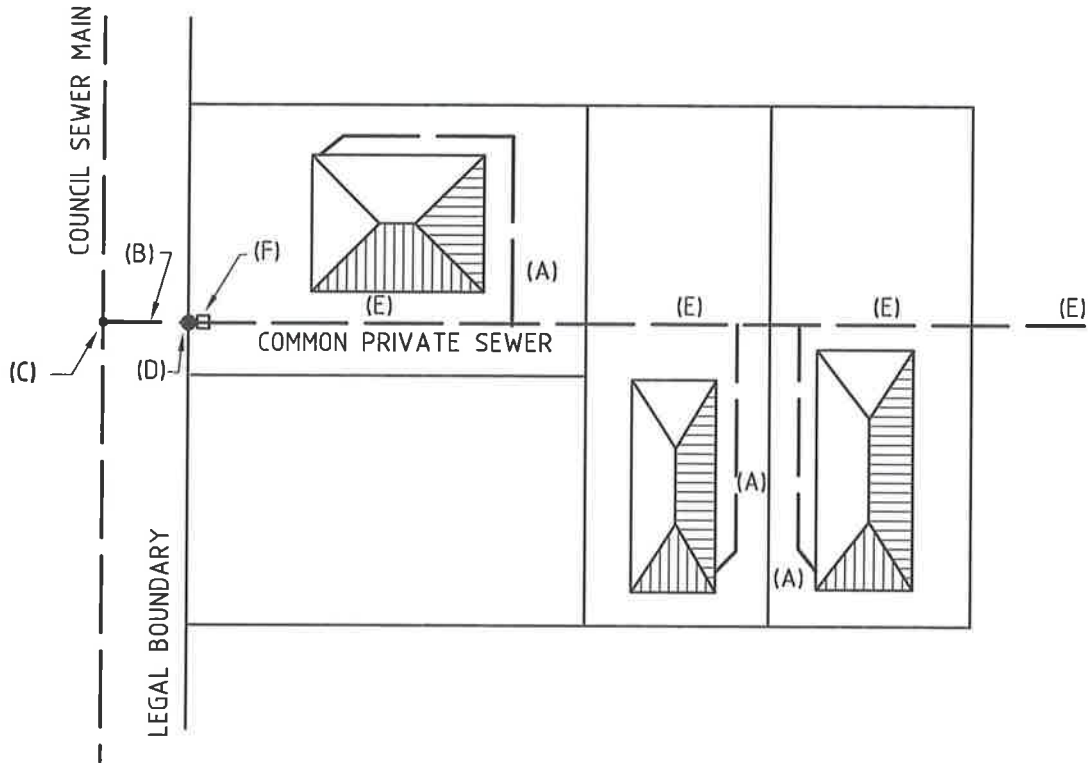
DRAWN BY MWH

SCALES :	1:25	
	INIT	DATE
DESIGNED		
DRAWN	LGS	6/09
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
SANITARY SEWER
POINT OF DISCHARGE AND CONNECTION



Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	Rev.	
CM-WDC-021	1	



(A)	PRIVATE DRAIN - HOUSE OWNERS RESPONSIBLY
(B)	CONNECTION - COUNCIL OWNED COUNCIL RESPONSIBLY (LIMITED LIABILITY)
(C)	POINT OF CONNECTION TO COUNCIL MAIN
(D)	POINT OF DISCHARGE
(E)	SHARED RESPONSIBILITY OF ALL SERVED OR UPSTREAM USERS UNLESS PREVIOUS AGREEMENT FOR TAKEOVER AS COUNCIL DRAIN HAS BEEN MADE WITH THE COUNCIL.
(F)	INSPECTION POINT

COMMON PRIVATE SEWER

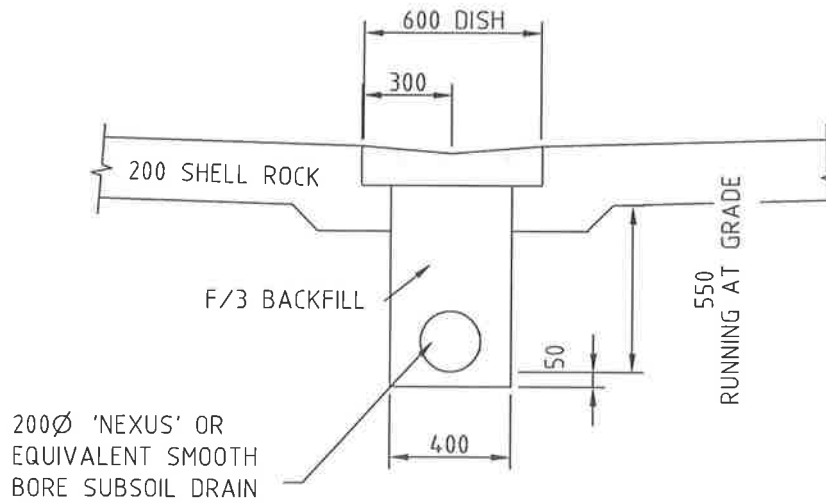
DRAWN BY MWH

SCALES :	1:25
	INIT DATE
DESIGNED	
DRAWN	LGS 6/09
CHECKED	
APPROVED	

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 SANITARY SEWER
 POINT OF DISCHARGE AND CONNECTION

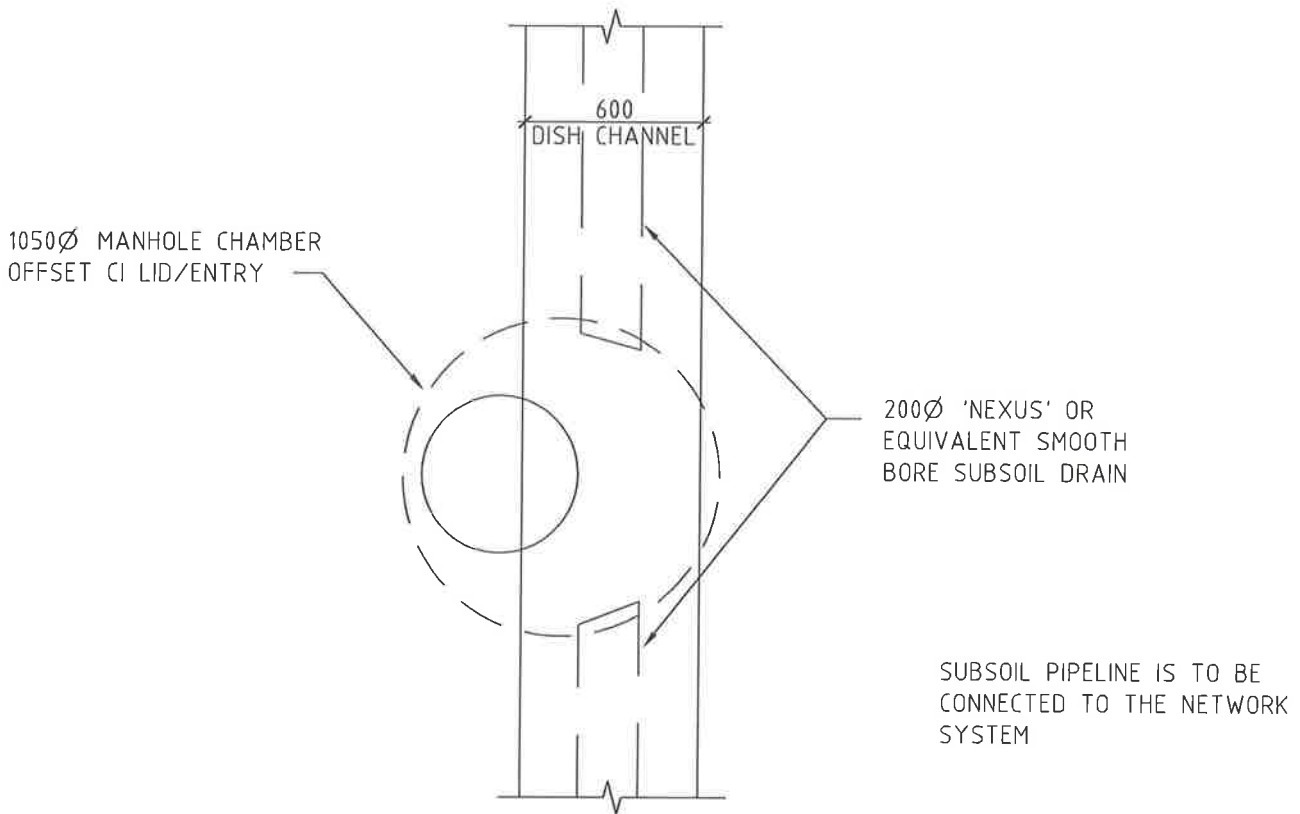


Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-022	Rev.
		1



SUBSOIL DRAIN

NTS



MAINTENANCE CHAMBER

NTS

DRAWN BY MWH

SCALES :	1:25
DESIGNED	INIT DATE
DRAWN	LGS 6/12
CHECKED	
APPROVED	

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 ALTERNATIVE SUBSOIL DRAIN DETAIL



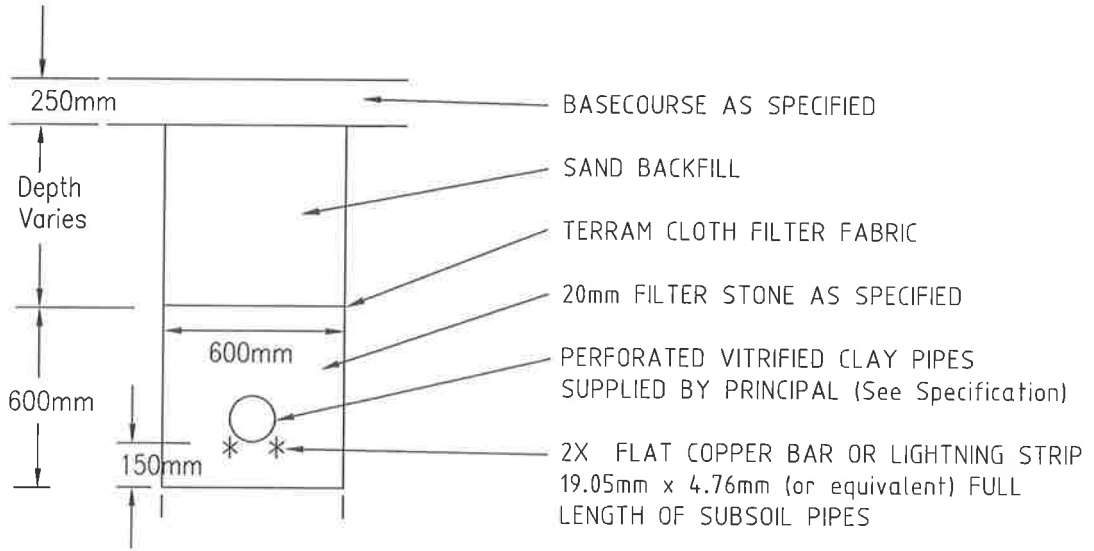
Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	CM-WDC-023	Rev.
		1

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK

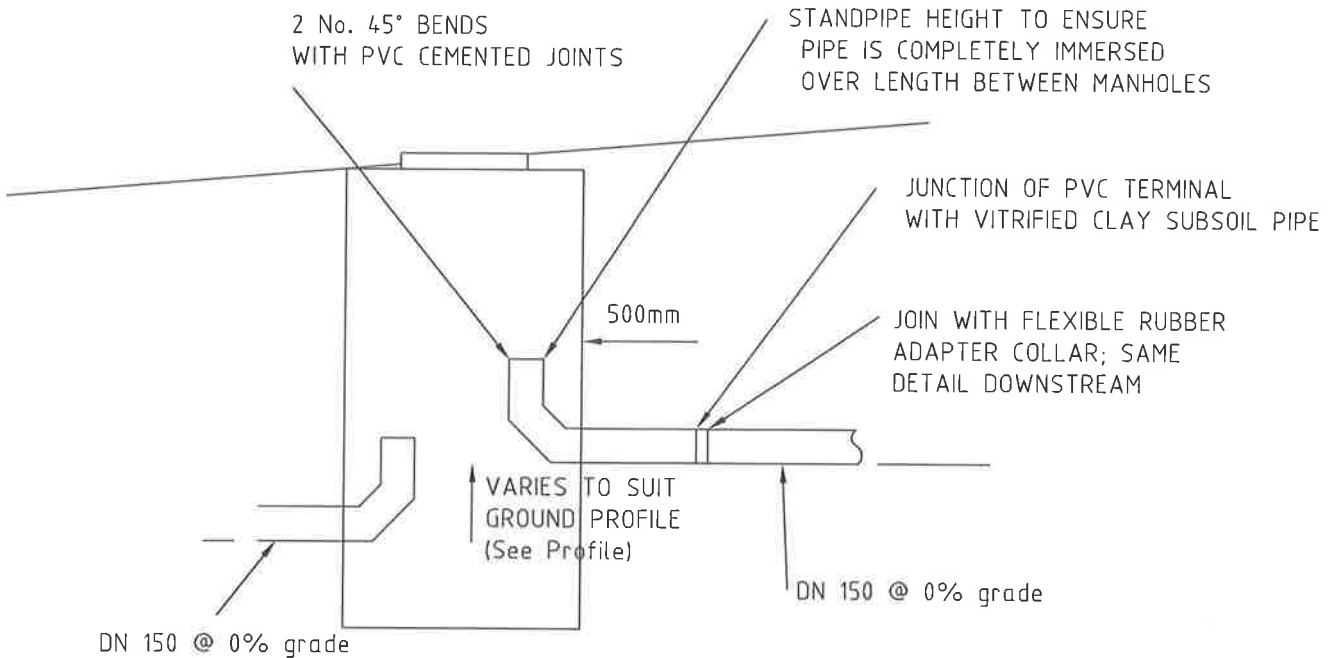
TAB-DWG

TAB/DWG

SERVER: WANGANUI (NZWANTSD01)



TRENCH DETAIL
NTS



TYPICAL MANHOLE DETAIL
NTS

DRAWN BY MWH

SCALES :	1:25
DESIGNED	INIT DATE
DRAWN	LGS 7/09
CHECKED	
APPROVED	

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
SUBSOIL DETAILS



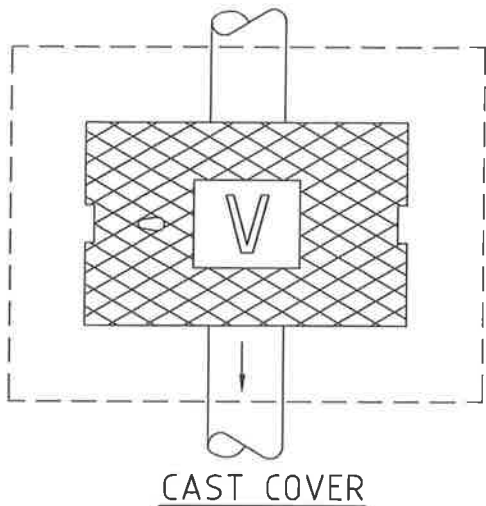
Status Stamp	CONSTRUCTION
Date Stamp	8/06/12
Sheet No.	1
Rev.	1

CM-WDC-024

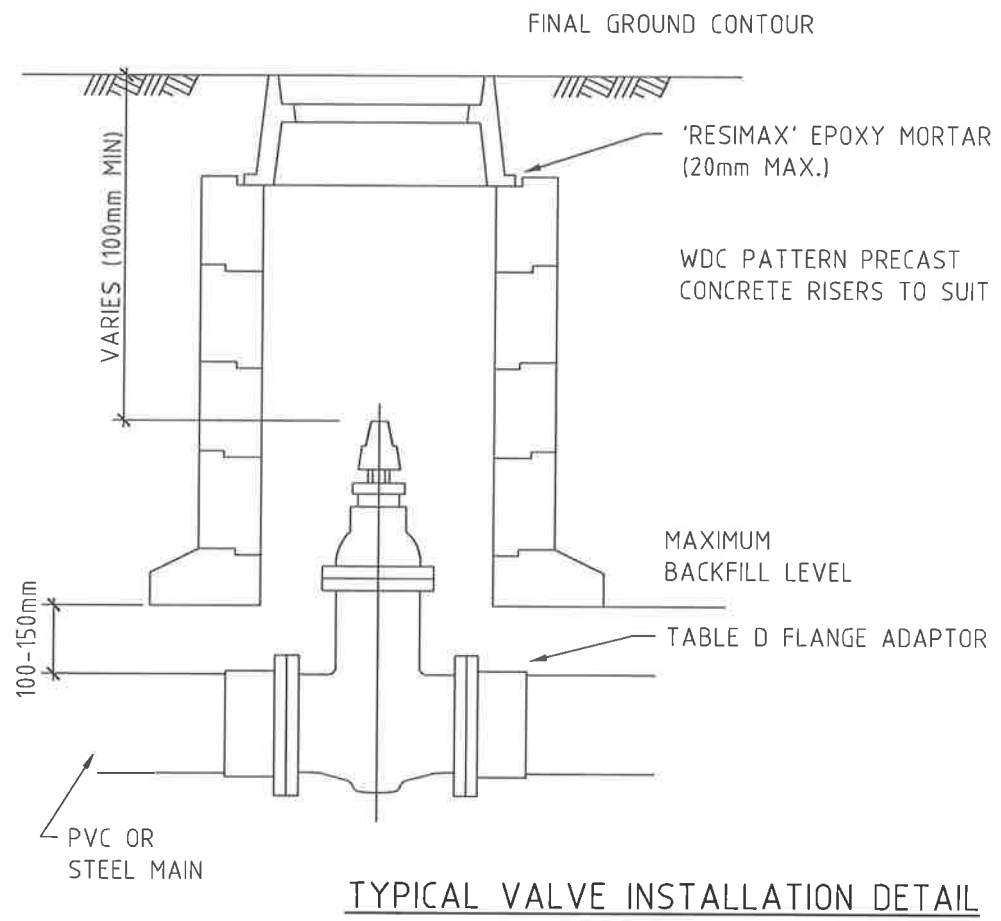
NOTES :

1. VALVES -ANTICLOCKWISE CLOSING
- 'SF'
 2. NZS TABLE D FLANGED VALVE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER
 3. GIBAULTS TO BE DI FROM APPROVED MANUFACTURER.
 4. BOLT SETS

BOLT	}	316 SS
FLAT WASHER (2)		
SPRING WASHER		
NUT		316 SS
- 'ROCOL' GREASE



CAST COVER



TYPICAL VALVE INSTALLATION DETAIL

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK
TAB/DWG : TAB-DWG
SERVER : WANGANUI (NZWANTS01)

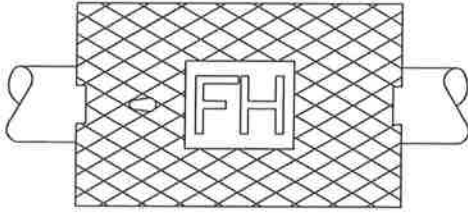
DRAWN BY MWH

SCALES :	1:25
DESIGNED	INIT DATE
DRAWN	LGS 11/05
CHECKED	
APPROVED	

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL PLANS
STANDARD DETAILS
VALVE INSTALLATION



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	WS-WDC-001	Rev.
		1

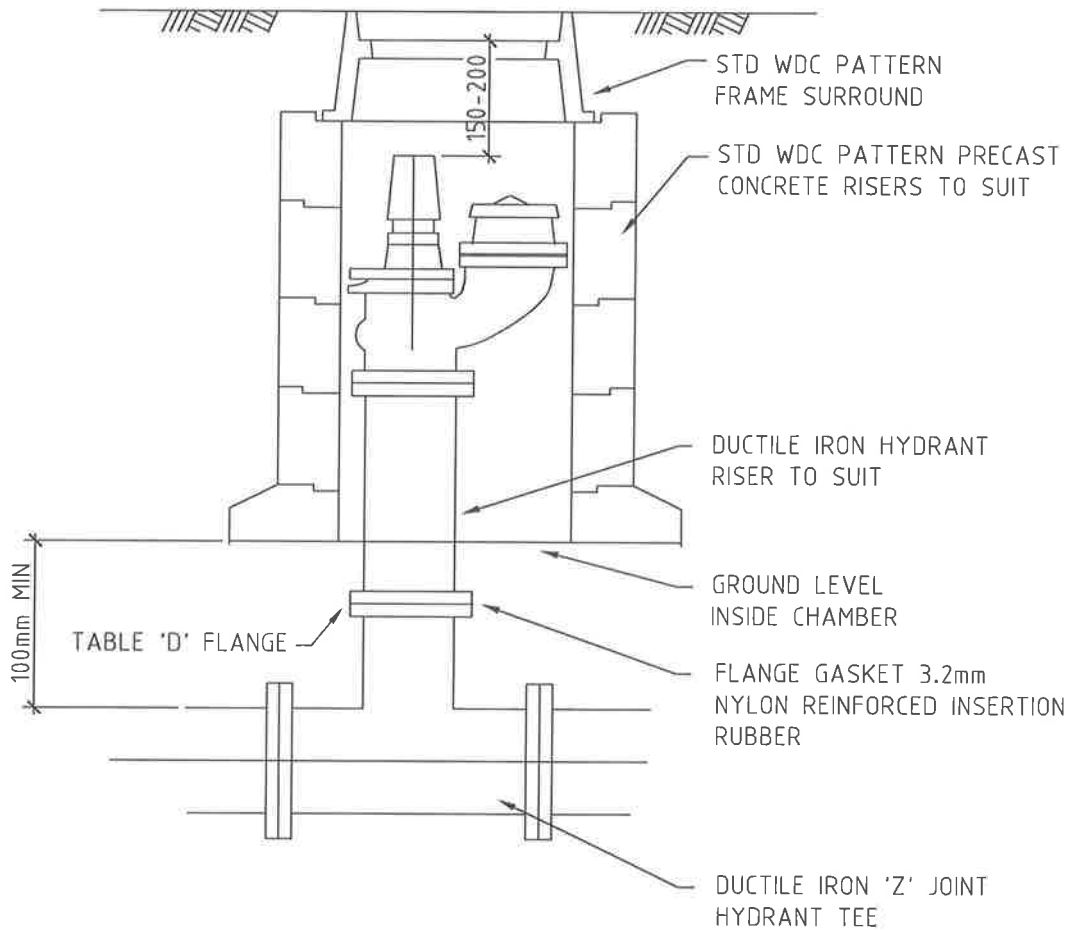


CAST IRON
WDC PATTERN LID

NOTES :

1. HYDRANT TO BE TALL
2. HYDRANT TO CONFORM TO BS 750:1984 'SPECIFICATION FOR FIRE HYDRANTS & SERVICE BOX FRAMES AND COVERS.
3. HYDRANT LID AND LOCATION TO BE MARKED IN ACCORDANCE WITH NZS4501 : CURRENT EDITION
4. NZS 8 TABLE D FLANGE TO BE USED EXCEPT WHERE OTHERWISE SPECIFIED BY THE ENGINEER. TEE JOINT TO BE DUCTILE IRON Z-JOINT FLANGED HYDRANT TEE.

FINAL GROUND CONTOUR



TYPICAL HYDRANT INSTALLATION DETAIL

DRAWN BY MWH

SCALES :	1:25	
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

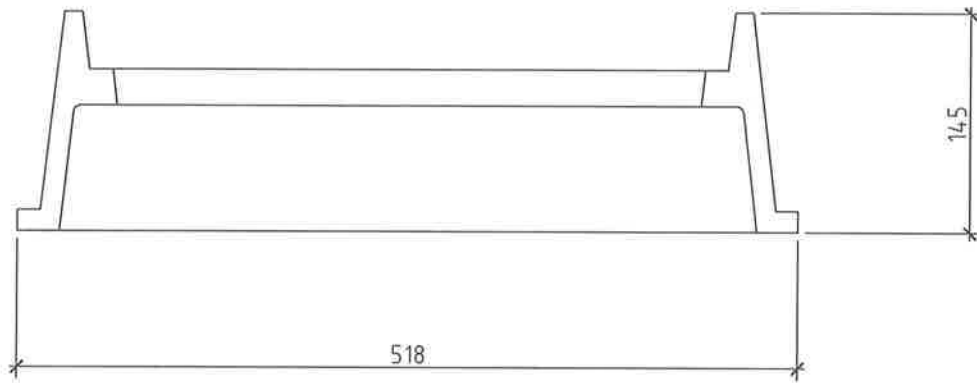
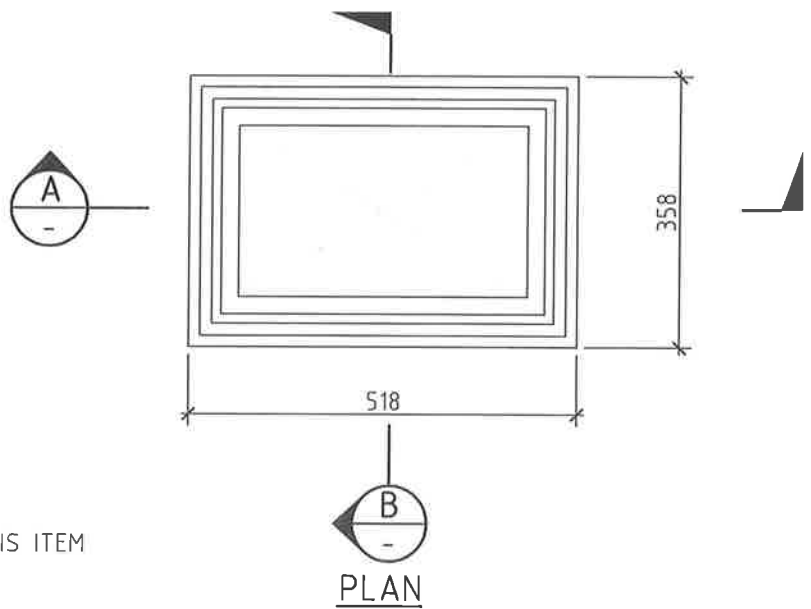
WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL PLANS
STANDARD DETAILS
HYDRANT INSTALLATION



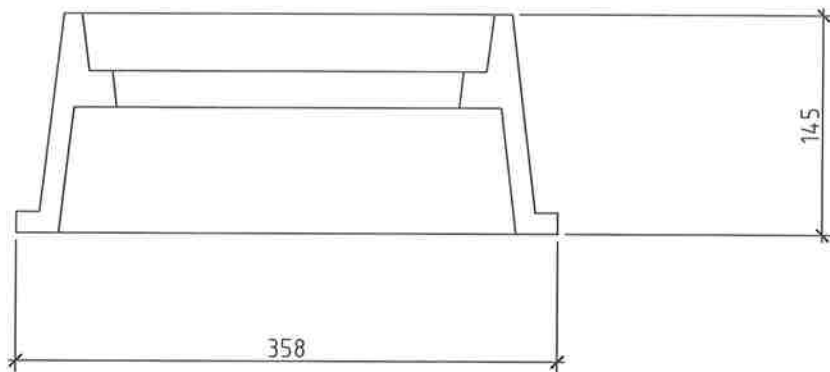
Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	WS-WDC-002	Rev.
		1

NOTES :

1. MATERIAL: CAST IRON
2. WEIGHT : 35 kg APPROX.
3. RADIUS ALL CORNERS R2 UNLESS OTHERWISE STATED
4. MANUFACTURER TO ENSURE LID FITS FRAME CORRECTLY
5. WDC STANDARD FRAME AND LID
6. SEE WDC FOR STANDARD SUPPLIERS
7. DEVELOPER NOT TO MANUFACTURE THIS ITEM
8. REFER APPROVED PRODUCT LIST.



SECTION A



SECTION B

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK SERVER: WANGANUI (NZWAN1501) TAB/DWG : TAB-DWG

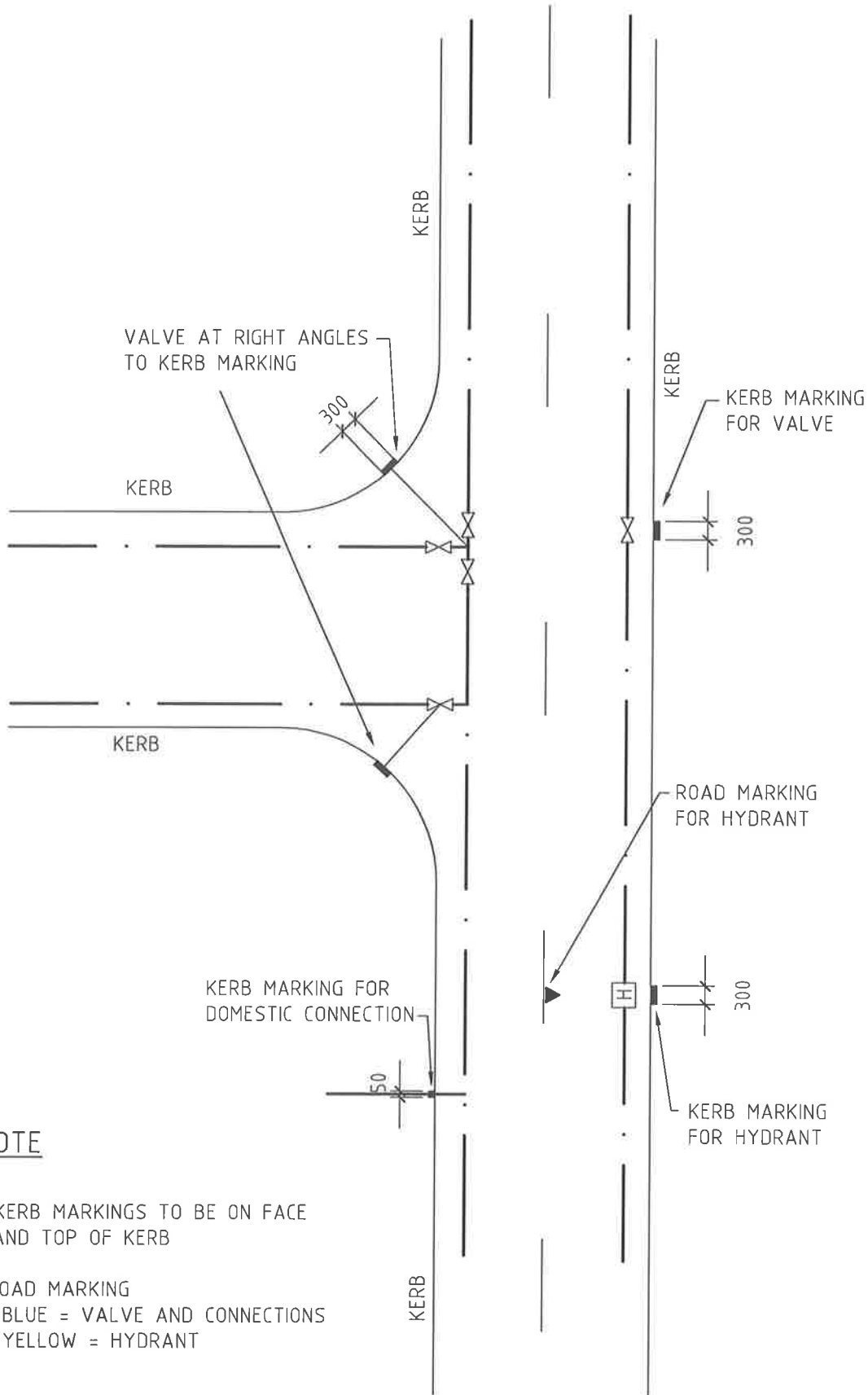
DRAWN BY MWH

SCALES :	1:25	
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL PLANS
STANDARD DETAILS
BOX - FRAME DETAILS



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	WS-WDC-003	Rev.
		1



NOTE

1. KERB MARKINGS TO BE ON FACE AND TOP OF KERB
2. ROAD MARKING
 - BLUE = VALVE AND CONNECTIONS
 - YELLOW = HYDRANT

DRAWN BY MWH

SCALES :	1:25	
	INIT	DATE
DESIGNED		
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL PLANS
 STANDARD DETAILS
 MARKING



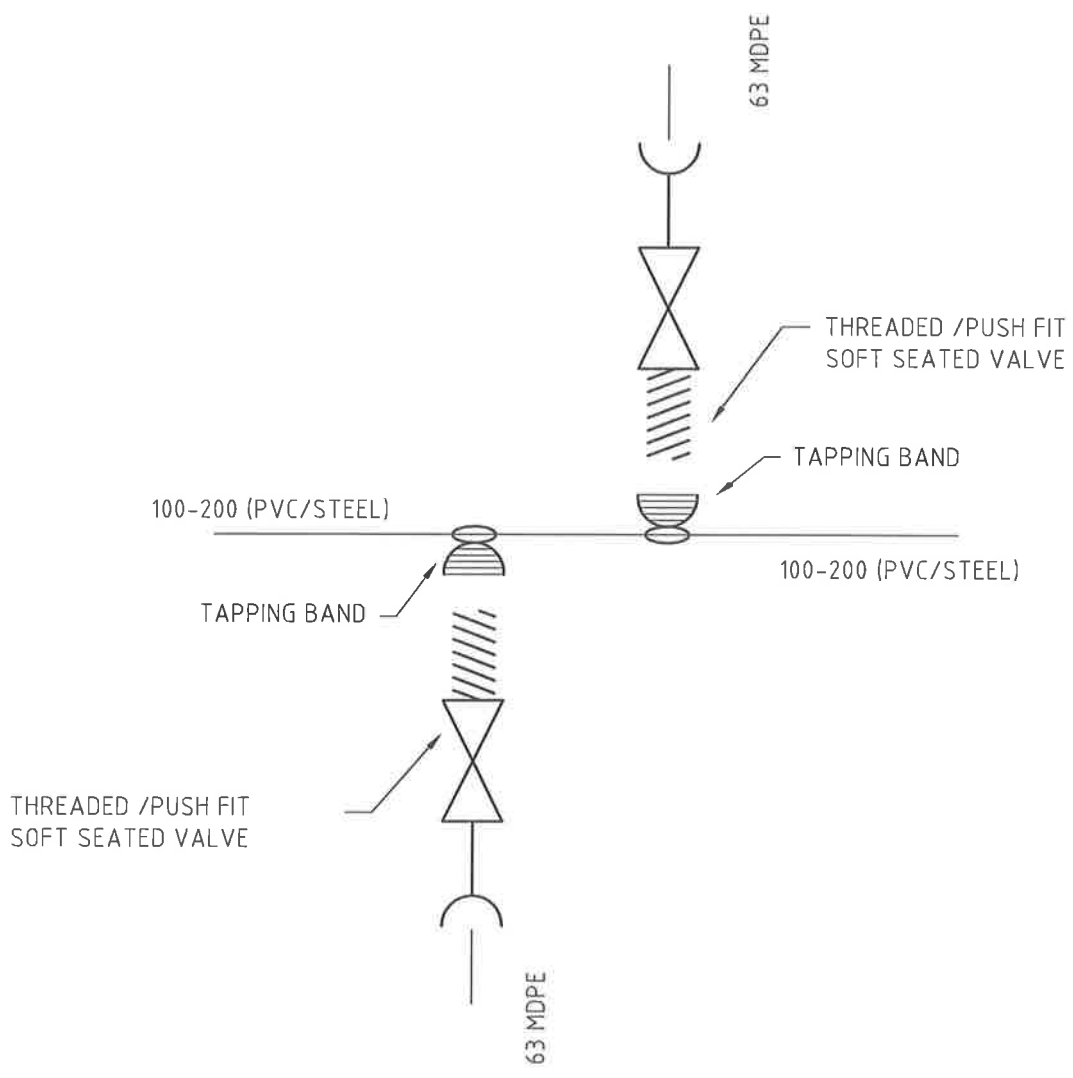
Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	WS-WDC-004	Rev.
		2

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A4

TAB/DWG : TAB-DWG

SERVER : WANGANUI INZWANIS01



DRAWN BY MWH

SCALES :	1:25	
	INIT	DATE
DESIGNED		
DRAWN	LGS	12/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL PLANS
 STANDARD DETAILS
 CONNECTIONS - TWO RIDERS OFF MAIN



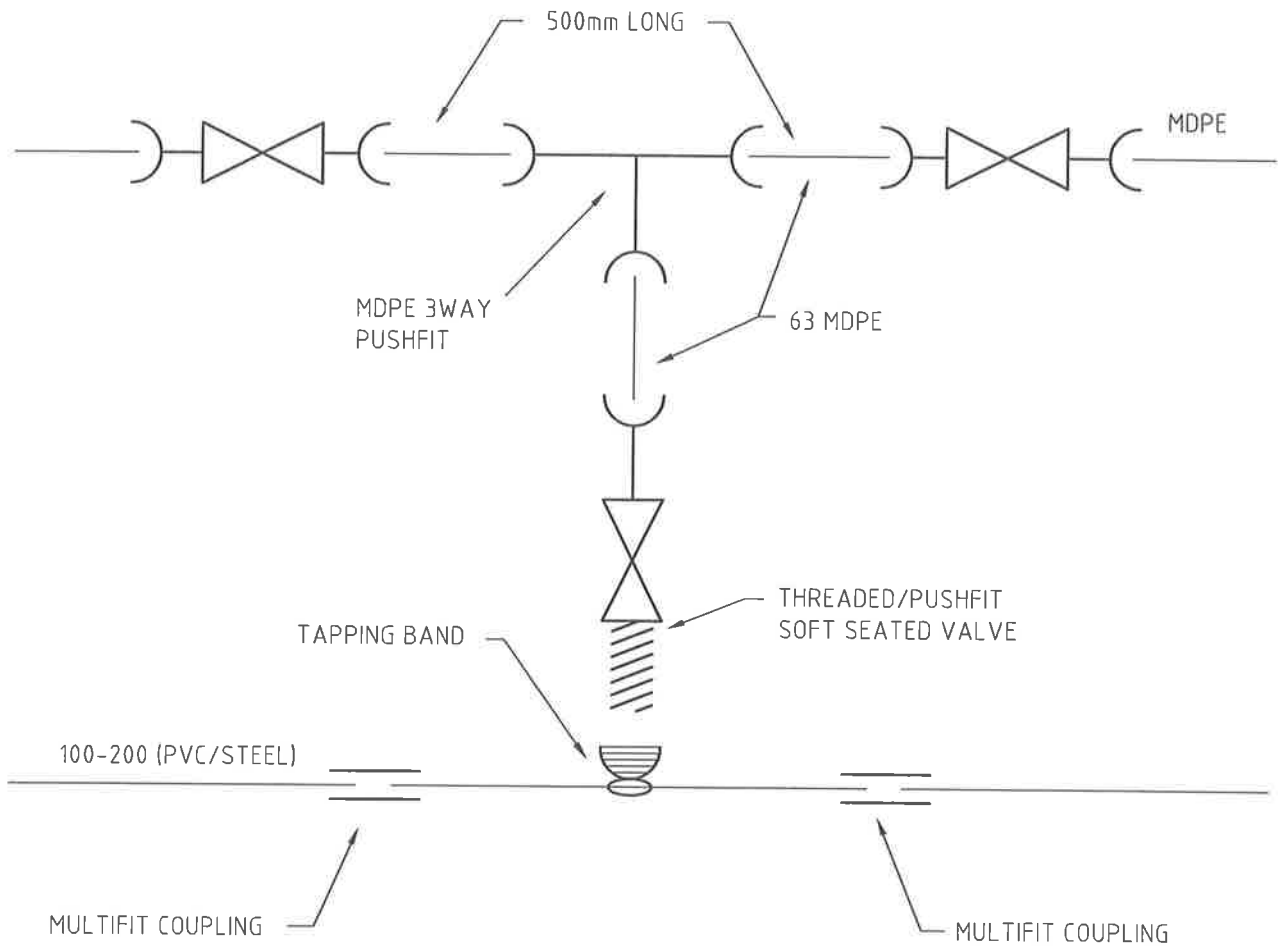
Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
	Sheet No	Rev
	WS-WDC-005	2

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A4

TAB/DWG: TAB-DWG

SERVER: WANGANUI (NZWANTIS01)



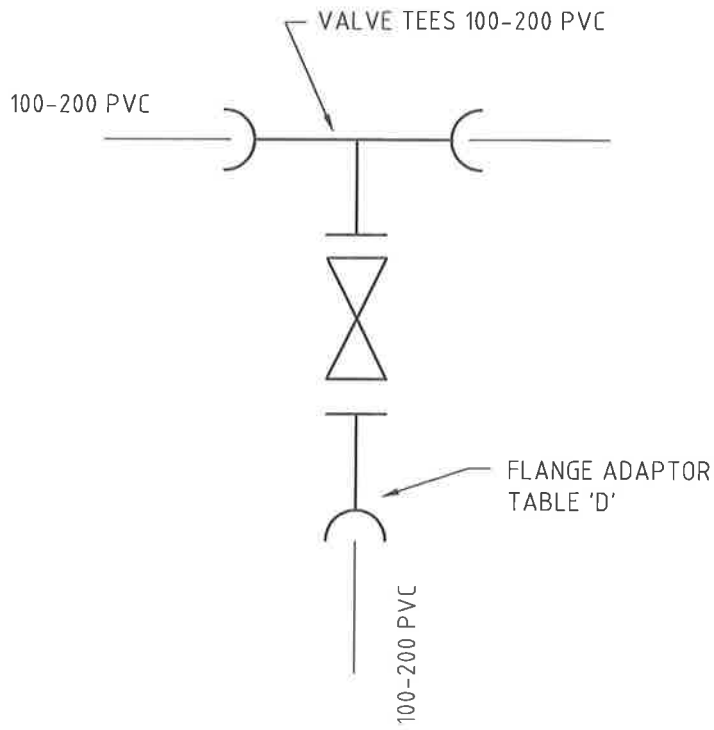
DRAWN BY MWH

SCALES :	1:25	
DESIGNED	INIT	DATE
DRAWN	LGS	12/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL PLANS
 STANDARD DETAILS
 HALF WAY RIDER LINK TO MAIN



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	WS-WDC-006	Rev.
		2



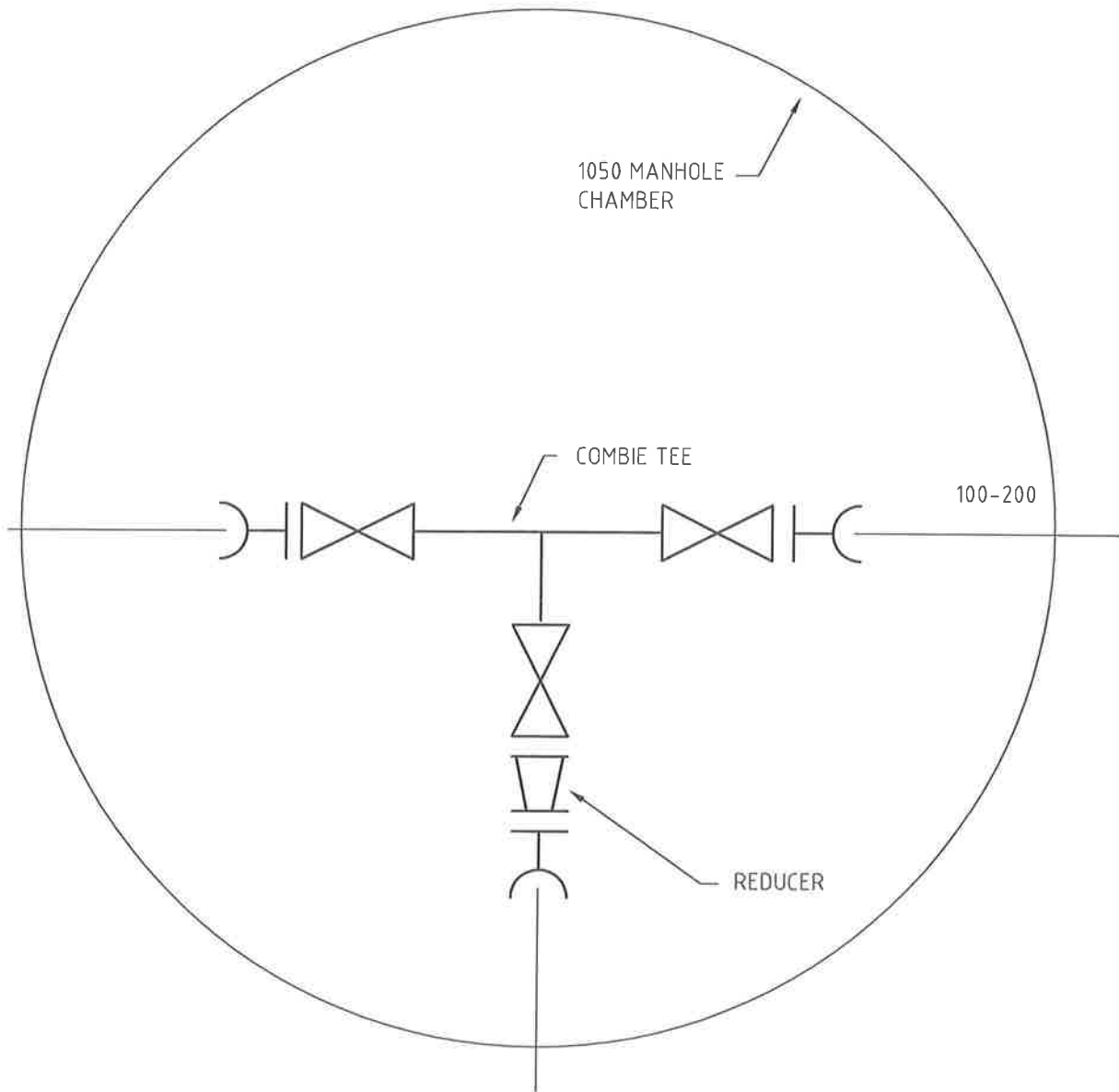
DRAWN BY MWH

SCALES :	1:25	
	INIT	DATE
DESIGNED		
DRAWN	LGS	12/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL PLANS
 STANDARD DETAILS
 MAIN TO MAIN CONNECTION



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No	WS-WDC-007	Rev
		2



DO NOT SCALE - IF IN DOUBT, ASK ORIGINAL SIZE A4

TAB/DWG : TAB-DWG

SERVER: WANGANUI\NZWANTS01

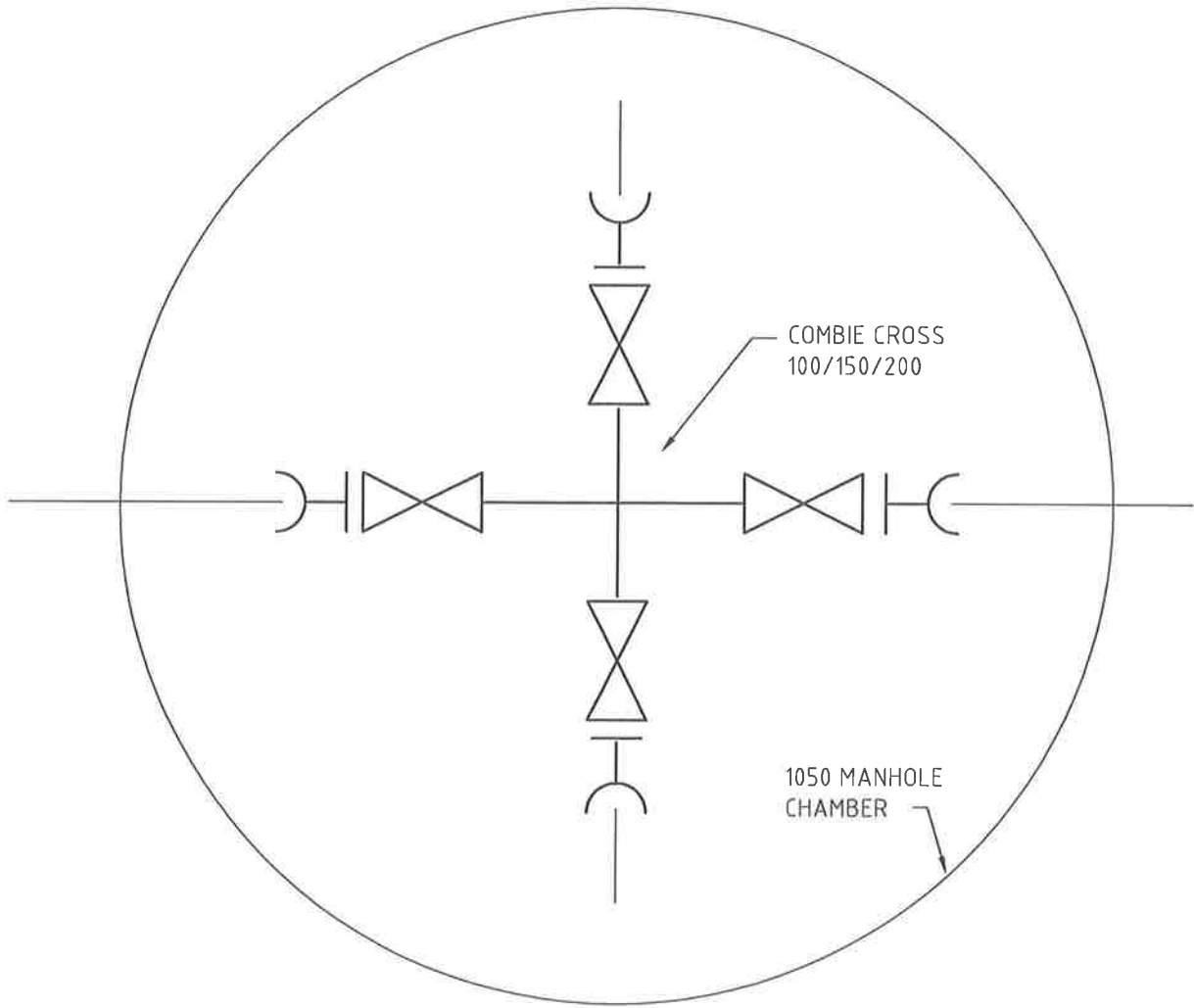
DRAWN BY MWH

SCALES :	1:25	
	INIT	DATE
DESIGNED		
DRAWN	LGS	12/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL PLANS
 STANDARD DETAILS
 COMBIE TEE



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No	WS-WDC-008	Rev.
		2



ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK

SERVER: WANGANUI [NZWAN1S01] TAB/DWG: TAB-DWG

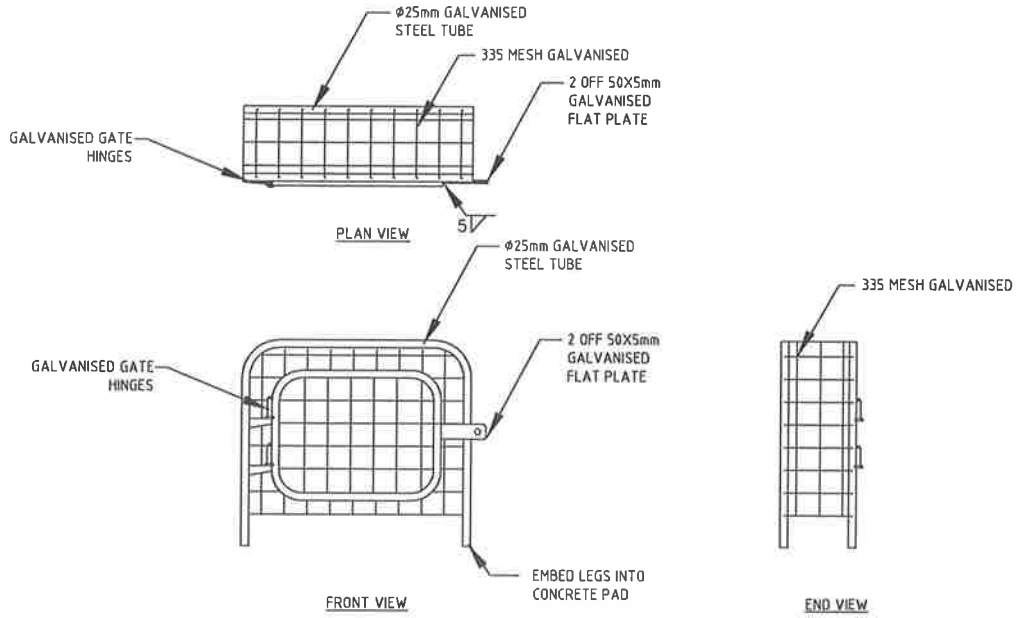
DRAWN BY MWH

SCALES :	1:25	
	INIT	DATE
DESIGNED		
DRAWN	LGS	12/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL PLANS
 STANDARD DETAILS
 COMBIE CROSS

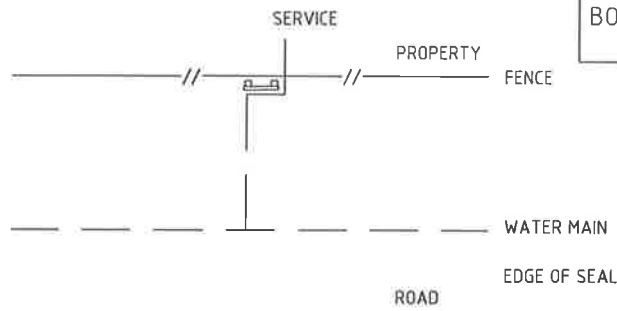


Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No	WS-WDC-009	Rev
		2

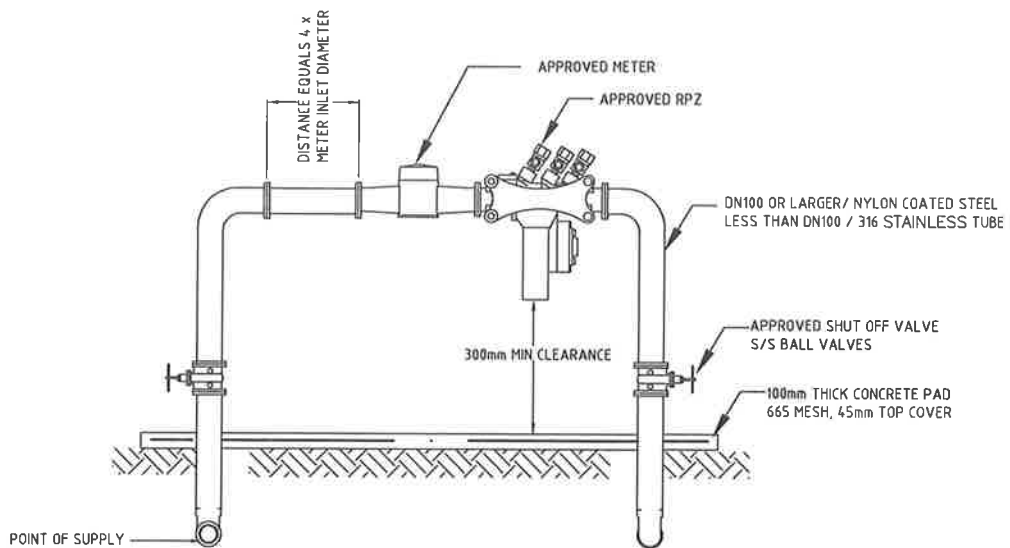


RPZ CAGE

ALL BACKFLOW TO BE DETERMINED AND COMPLY WITH THE RISK TABLE AS DEFINED IN THE BUILDING CODE G12. ALL HIGH LISTED CLASSIFICATIONS ARE TO HAVE A RPZ FITTED AT THE BOUNDARY AT OWNERS COST.



LAYOUT PLAN



ELEVATION

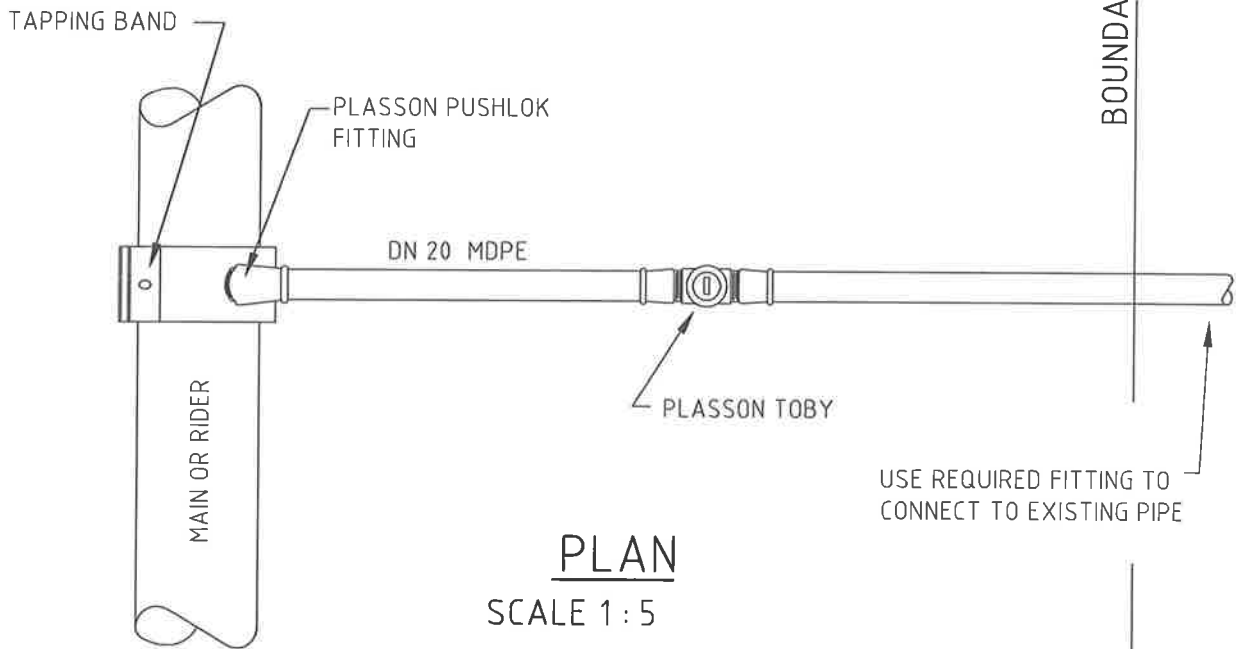
DRAWN BY MWH

SCALES :	1:25	
	INIT	DATE
DESIGNED		
DRAWN	LGS	8/09
CHECKED		
APPROVED		

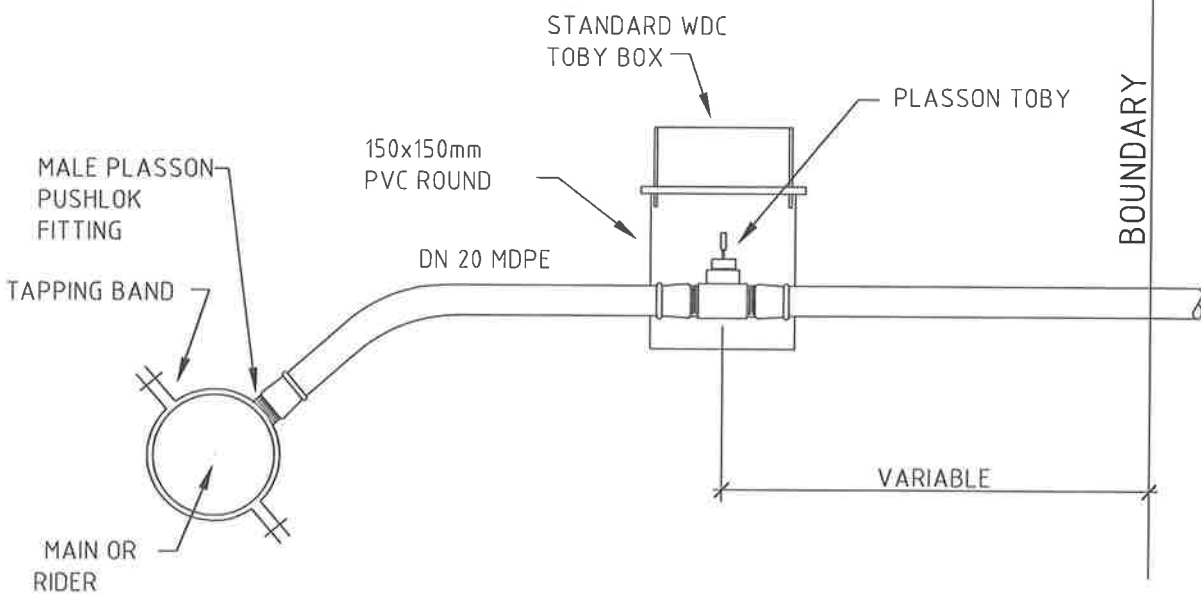
WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 REDUCED PRESSURE VALVES
 CAGE SURROUND



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No	WS-WDC-010	Rev
		1



PLAN
SCALE 1:5



ELEVATION
SCALE 1:5

NOTE:

1. DEPTH TO SERVICE AS PER SPECIFICATION
2. TRACING WIRE TO BE PLACED WITH PIPE AS PER SPECIFICATION

DRAWN BY MWH

SCALES :	1:25		
	INIT	DATE	
DESIGNED			
DRAWN	LGS	9/09	
CHECKED			
APPROVED			

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS

SERVICE CONNECTION
FROM MAIN OR RIDER TO BOUNDARY



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	WS-WDC-011	Rev.
		2



MWH

DRAWING REGISTER

Date of Issue

Project No

z1136700

 Client : WANGANUI DISTRICT COUNCIL
 Project : SUBDIVISIONAL PLANS
ROADING

Day	23	25	5
Month	7	11	6
Year	9	9	12

Date of receipt

Day			
Month			
Year			

Size	Drawing title	CAD Ref	Dwg No	Amendments		
	VEHICLE CROSSINGS					
A4	Urban Res. Conc path	RD-WDC-001	001	6	7	
A4	Urban Res. Sealed path	RD-WDC-002	002	6	6	
A4	ROW crossing conc. Path	RD-WDC-003	003	5	6	
A4	ROW sealed footpath	RD-WDC-004	004	5	6	
A4	ROW conc. Path (4-6 Dwellings)	RD-WDC-005	005	5	4	5
A4	ROW sealed (4-6 Dwellings)	RD-WDC-006	006	4	5	
A4	Commercial conc path	RD-WDC-007	007	6	7	8
A4	Commercial sealed footpath	RD-WDC-008	008	6	7	
A4	max change of grade (urban vehicle0	RD-WDC-009	009			5
A4	max. breakover angles	RD-WDC-010	010	4	4	
A4	Rural Heavy	RD-WDC-011	011	2	3	3
A4	Rural Residential	RD-WDC-012	012	2	3	
	MISCELLANEOUS					
A4	Typical Cross section -Cul De Sac	RD-WDC-013	013	F	1	2
	Typical Road Cross Section	RD-WDC-014	014			2
A4	Typical Cross section -R.O.W.	RD-WDC-015	015	A	1	2
A4	Typical Cross section -Services	RD-WDC-016	016	E	1	2
A4	Transformer Location (Preferred)	RD-WDC-017	017	C	1	2
A4	Footpath Construction	RD-WDC-018	018	D	1	5
A4	Mobility Crossing Ramps	RD-WDC-019	019	C	1	1
A4	Kerb and Channel Details	RD-WDC-020	020	2	3	1

This Issue Approved By :

Signature here or Document approval in boxes on right

Issued by (Initials)

SGT
SGT
SGT

 Name: David Boothway

Date

18/06/2012

Originals Sighted

Originals Signed

E-mail

Fax

Phone

Distribution

WANGANUI DISTRICT COUNCIL

Number of copies

Amendments Key :

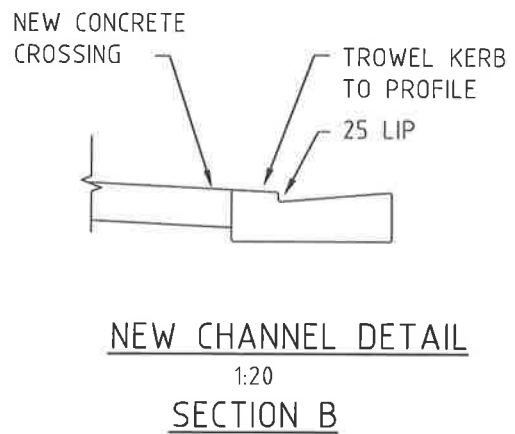
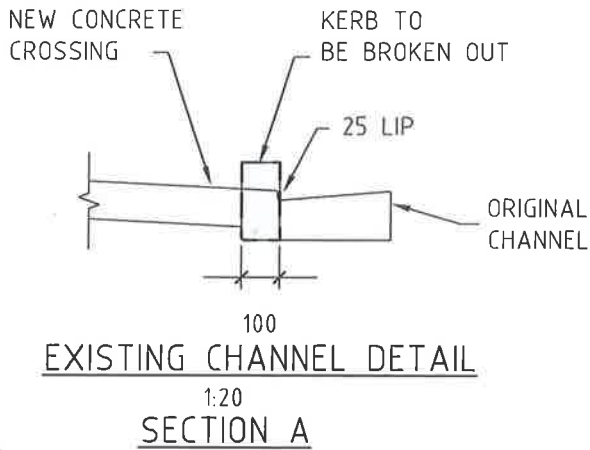
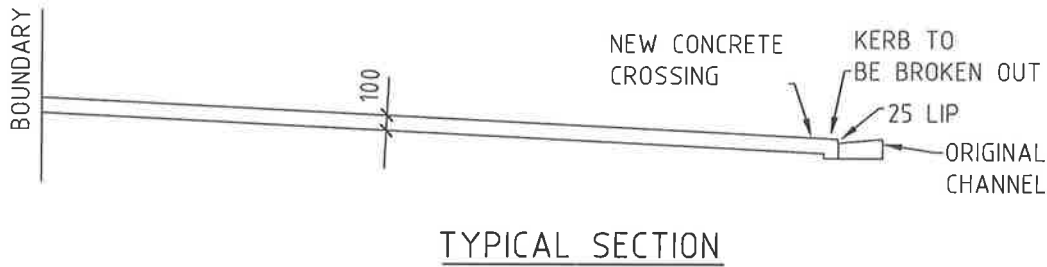
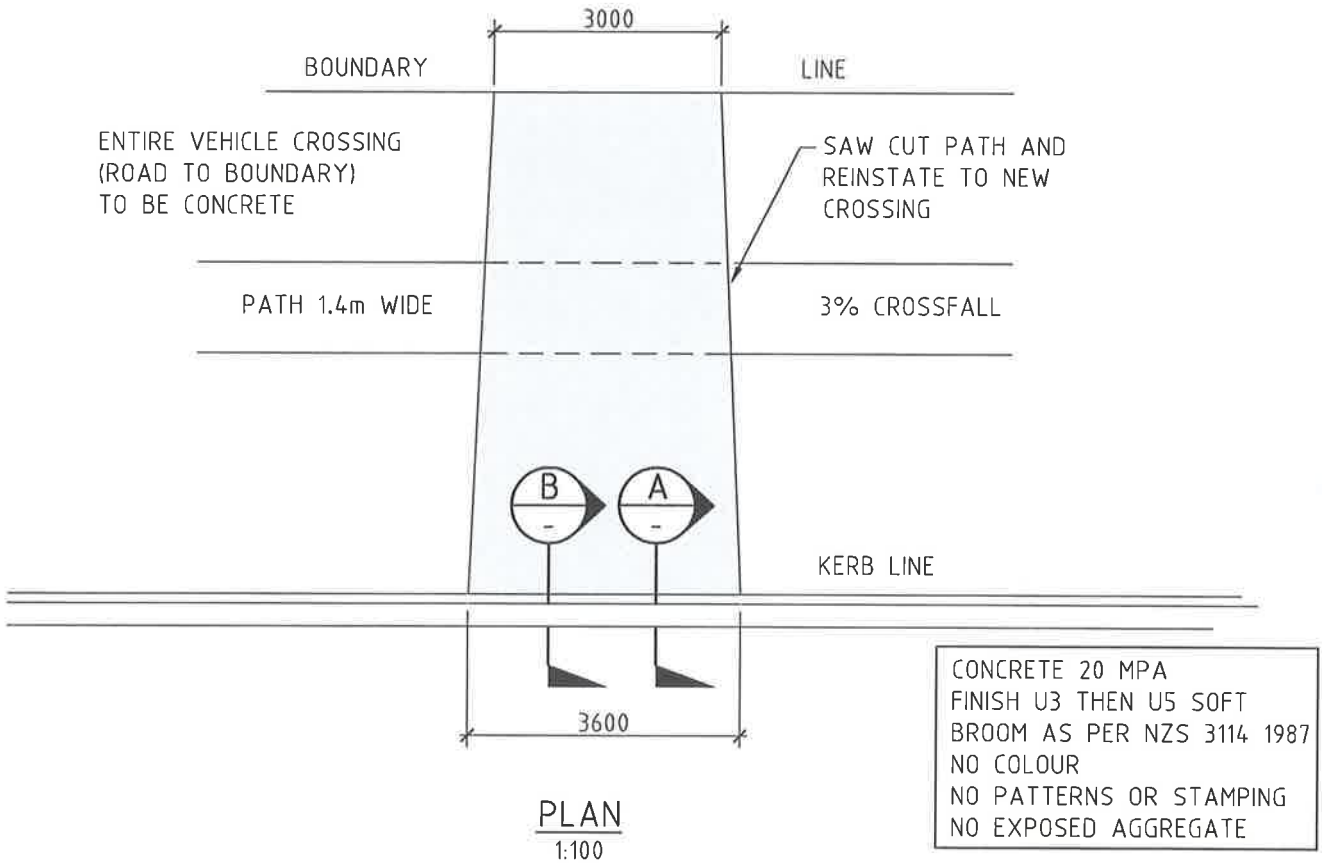
Preliminary Issues	A,B,C, ...
Tender Issue	0
Issues during Tender Period	0A, 0B, 0C
Construction Issues	1, 2, 3, ...

Electronic Transfer :

Transfer for information only	E
Transfer WITH CUSTODY	C
<small>"Custody" resides with the true electronic original in the CAD sub_dir of the office authorised to amend and/or issue the drawing. Copies of the drawing stored elsewhere must NOT reside in a CAD directory (usually an "officename" sub-directory.)</small>	

Purpose of Issue :

<input type="checkbox"/> Conceptual	<input type="checkbox"/> For Information only
<input type="checkbox"/> Preliminary	<input type="checkbox"/> For Construction
<input type="checkbox"/> For Approval	<input type="checkbox"/> Final
<input type="checkbox"/> For Consent	<input type="checkbox"/> Not for Construction
<input type="checkbox"/> For Tender	<input type="checkbox"/> Subject to Checking
	<input type="checkbox"/> As-Built



NOTE

THIS DRAWING SHOWS AN ACCEPTABLE SOLUTION MEETING COUNCILS STANDARDS.
THE CROSSING WIDTH IS THE MINIMUM ALLOWABLE BUT MAY BE INCREASED UP TO 3.5m AT COUNCILS DISCRETION.
CROSSING WIDTHS GREATER THAN 3.5m REQUIRE RESOURCE CONSENT APPROVAL.
TO BE READ IN CONJUNCTION WITH DRAWING RD-WDC-009

DRAWN BY MWH

SCALES :	AS NOTED	
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

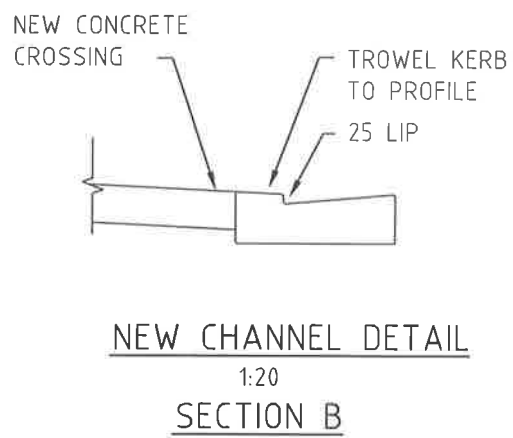
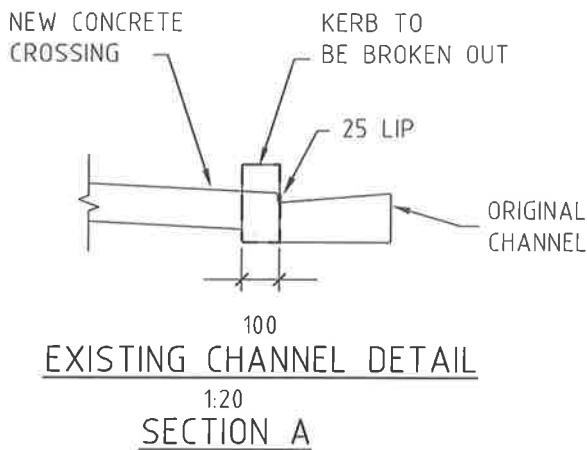
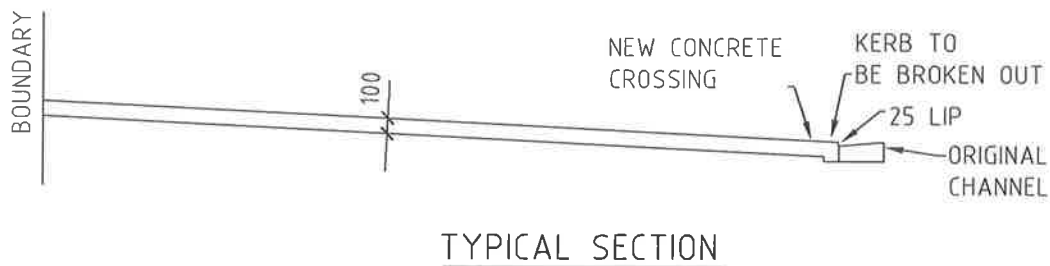
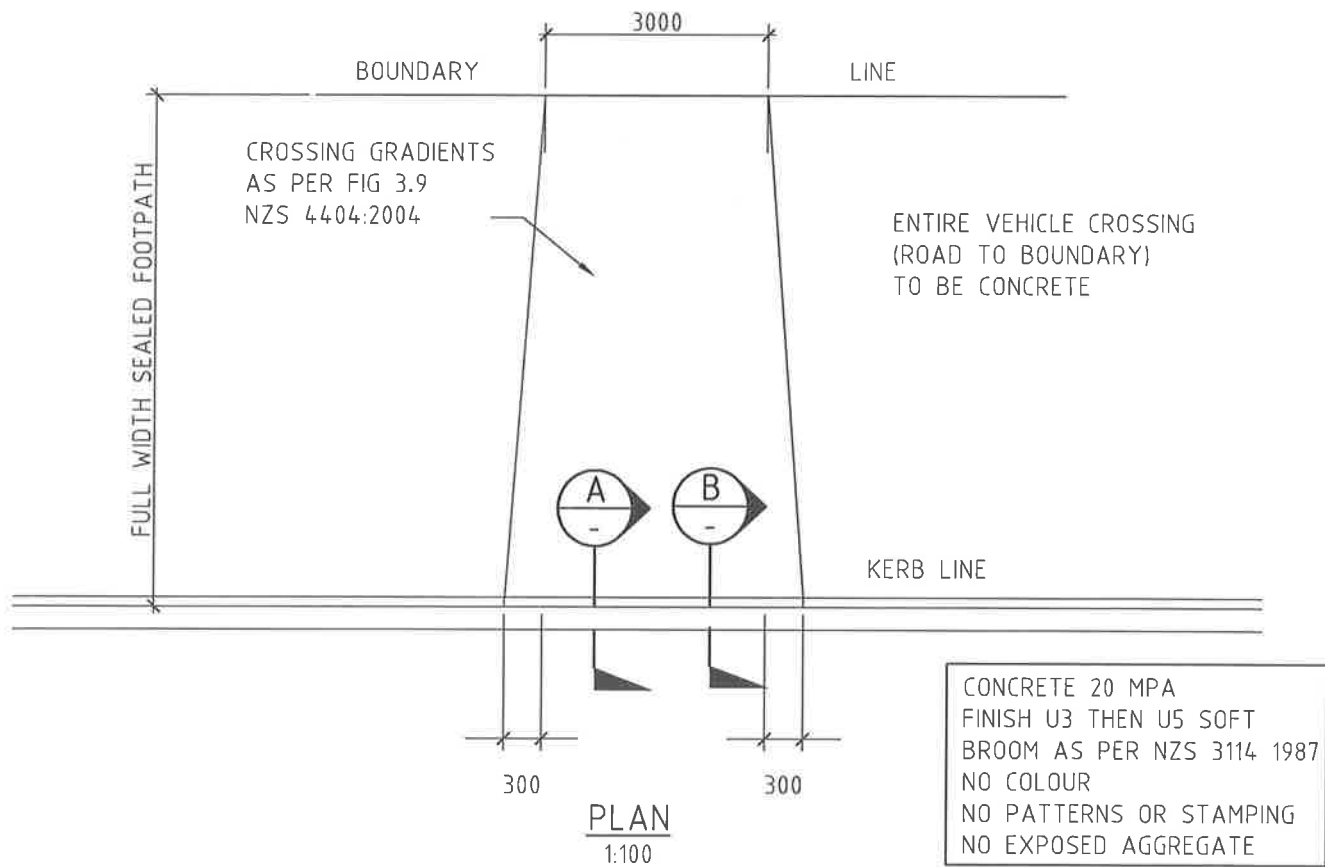
WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS

VEHICLE CROSSINGS
URBAN RESIDENTIAL - CONCRETE FOOTPATH



Status Stamp	CONSTRUCTION	
Date Stamp	8/5/12	
Sheet No.	RD-WDC-001	Rev.
		7

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK SERVER: WANGANUI (NZ) WANG1501 TAB/DWG: TAB-DWG



NOTE

THIS DRAWING SHOWS AN ACCEPTABLE SOLUTION MEETING COUNCILS STANDARDS.
 THE CROSSING WIDTH IS THE MINIMUM ALLOWABLE BUT MAY BE INCREASED UP TO 3.5m AT COUNCILS DISCRETION.
 CROSSING WIDTHS GREATER THAN 3.5m REQUIRE RESOURCE CONSENT APPROVAL.
 TO BE READ IN CONJUNCTION WITH DRAWING RD-WDC-009

DRAWN BY MWH

SCALES :	AS NOTED	
	INIT	DATE
DESIGNED		
DRAWN	LGS	11/05
CHECKED		
APPROVED		

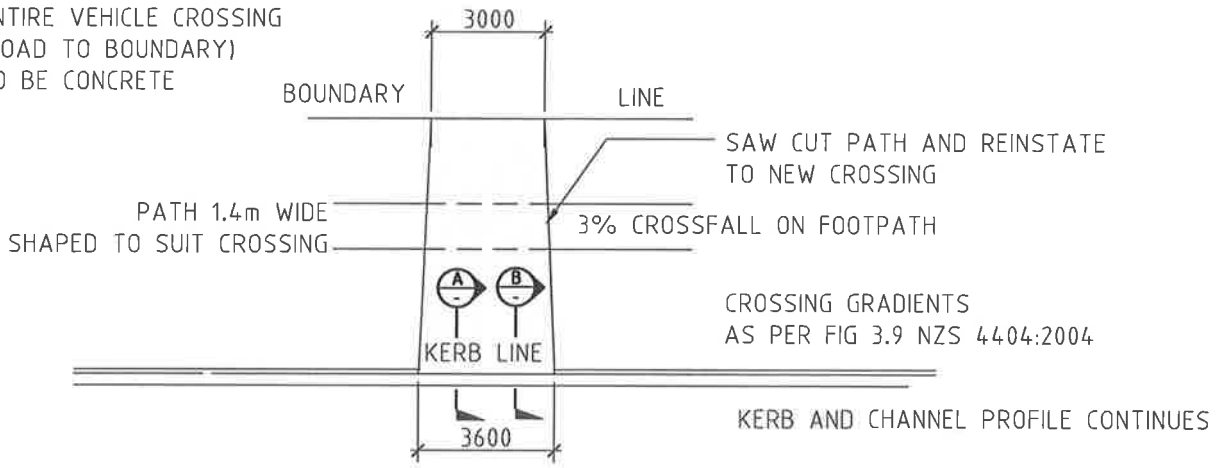
WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS

VEHICLE CROSSINGS
 URBAN RESIDENTIAL - SEALED FOOTPATH



Status Stamp	CONSTRUCTION	
Date Stamp	8/06/12	
Sheet No.	RD-WDC-002	Rev.
		6

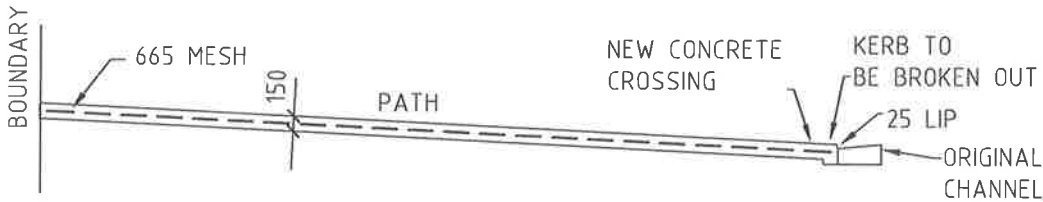
ENTIRE VEHICLE CROSSING
(ROAD TO BOUNDARY)
TO BE CONCRETE



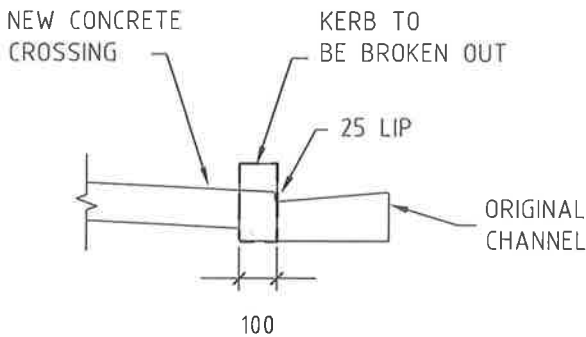
**2-3 DWELLING UNITS
CROSSING PLAN**

1:200

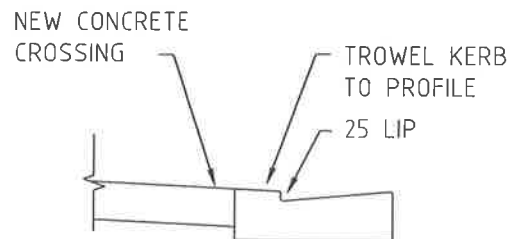
CONCRETE 20 MPA
FINISH U3 THEN U5 SOFT
BROOM AS PER NZS 3114 1987
NO COLOUR
NO PATTERNS OR STAMPING
NO EXPOSED AGGREGATE



TYPICAL SECTION



EXISTING CHANNEL DETAIL
1:20
SECTION A



NEW CHANNEL DETAIL
1:20
SECTION B

NOTE

THIS DRAWING SHOWS AN ACCEPTABLE SOLUTION MEETING COUNCILS STANDARDS.
THE CROSSING WIDTH IS THE MINIMUM ALLOWABLE BUT MAY BE INCREASED UP TO 3.5m AT COUNCILS DISCRETION.
CROSSING WIDTHS GREATER THAN 3.5m REQUIRE RESOURCE CONSENT APPROVAL.
TO BE READ IN CONJUNCTION WITH DRAWING RD-WDC-009

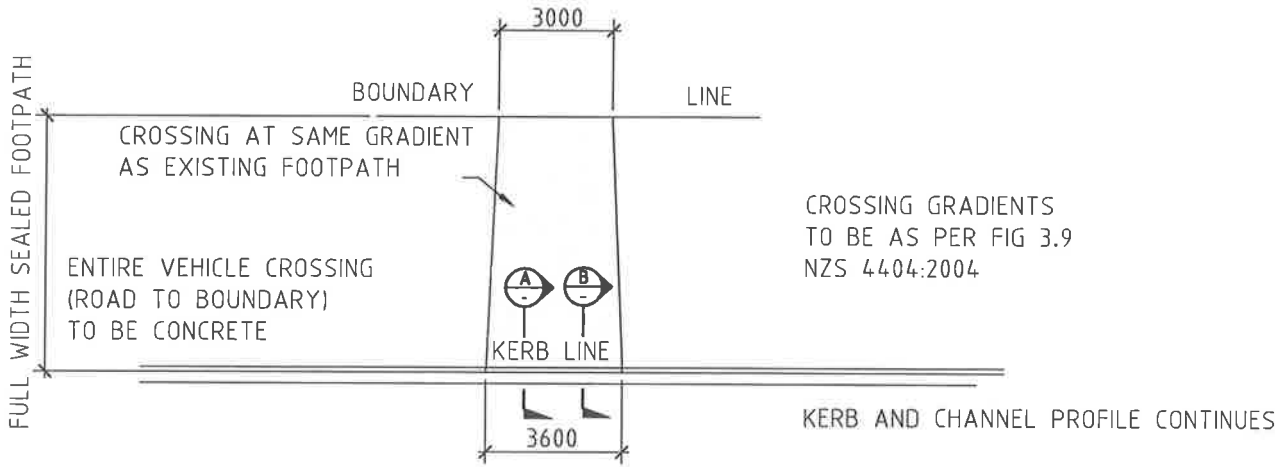
DRAWN BY MWH

SCALES :	AS NOTED	
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
VEHICLE CROSSINGS
R.O.W. CROSSING CONCRETE FOOTPATH

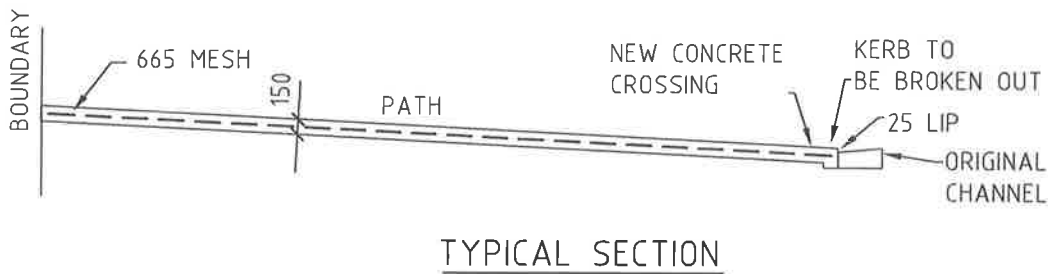


Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	RD-WDC-003	Rev.
		6

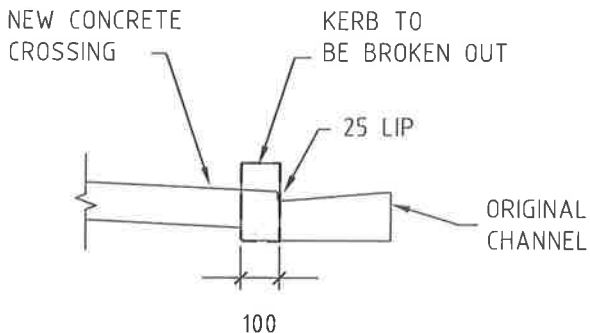


2-3 DWELLING UNITS
CROSSING PLAN
 1:200

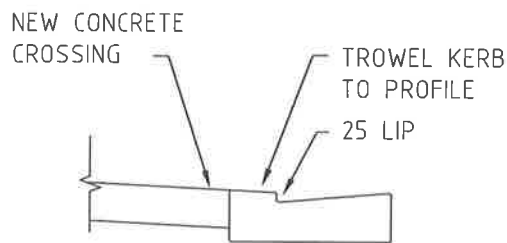
CONCRETE 20 MPA
 FINISH U3 THEN U5 SOFT
 BROOM AS PER NZS 3114 1987
 NO COLOUR
 NO PATTERNS OR STAMPING
 NO EXPOSED AGGREGATE



TYPICAL SECTION



EXISTING CHANNEL DETAIL
 1:20
SECTION A



NEW CHANNEL DETAIL
 1:20
SECTION B

NOTE

THIS DRAWING SHOWS AN ACCEPTABLE SOLUTION MEETING COUNCILS STANDARDS.
 THE CROSSING WIDTH IS THE MINIMUM ALLOWABLE BUT MAY BE INCREASED UP TO 3.5m AT COUNCILS DISCRETION.
 CROSSING WIDTHS GREATER THAN 3.5m REQUIRE RESOURCE CONSENT APPROVAL.
 TO BE READ IN CONJUNCTION WITH DRAWING RD-WDC-009

DRAWN BY MWH

SCALES :	AS NOTED	
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

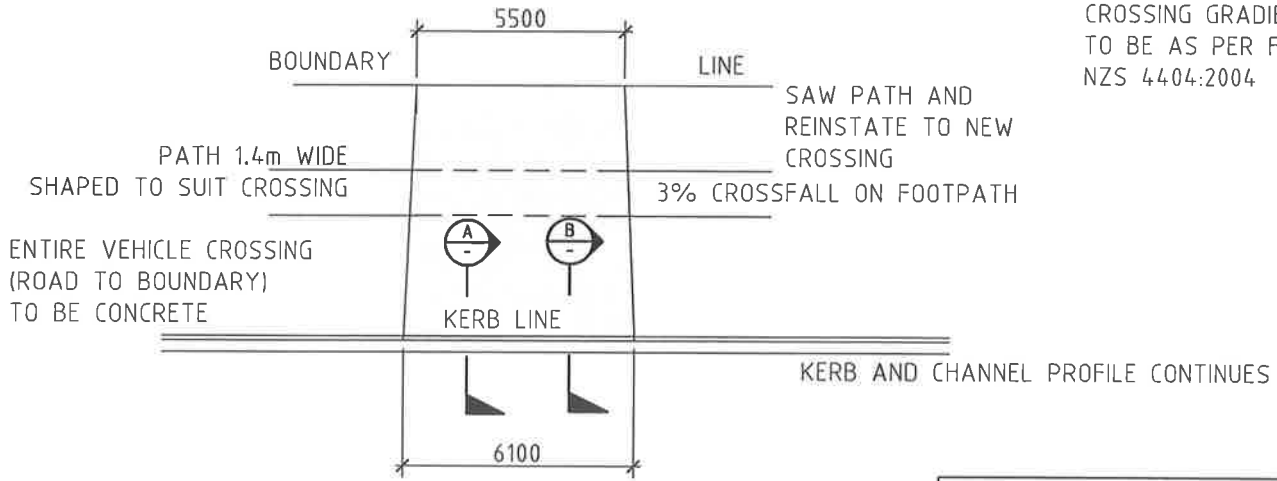
WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 VEHICLE CROSSINGS
 R.O.W. SEALED FOOTPATH



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	RD-WDC-004	Rev.
		6

SERVER: WANGANUI (NZWANTIS01) TAB/DWG: TAB-DWG ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK

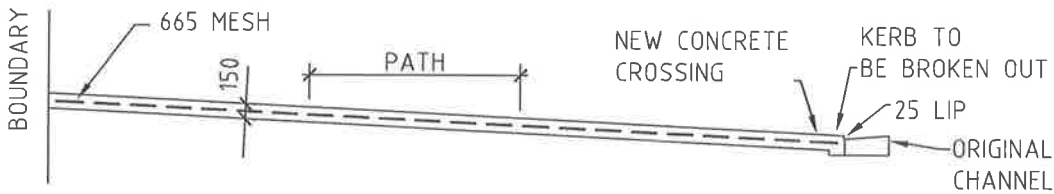
CROSSING GRADIENTS
TO BE AS PER FIG 3.9
NZS 4404:2004



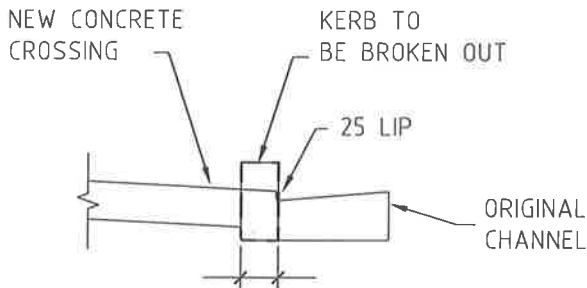
4-6 DWELLING UNITS
CROSSING PLAN

1:200

CONCRETE 20 MPA
FINISH U3 THEN U5 SOFT
BROOM AS PER NZS 3114 1987
NO COLOUR
NO PATTERNS OR STAMPING
NO EXPOSED AGGREGATE



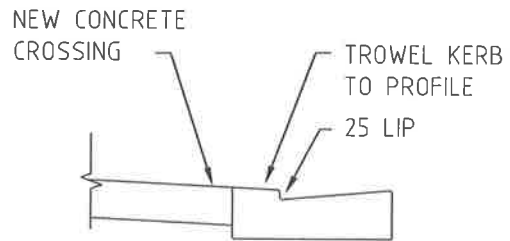
TYPICAL SECTION



EXISTING CHANNEL DETAIL

1:20

SECTION A



NEW CHANNEL DETAIL

1:20

SECTION B

NOTE

THIS DRAWING SHOWS AN ACCEPTABLE SOLUTION MEETING COUNCILS STANDARDS.
THE CROSSING WIDTH IS THE MINIMUM ALLOWABLE BUT MAY BE INCREASED UP TO 6m AT COUNCILS DISCRETION.
CROSSING WIDTHS GREATER THAN 6m REQUIRE RESOURCE CONSENT APPROVAL.
TO BE READ IN CONJUNCTION WITH DRAWING RD-WDC-009

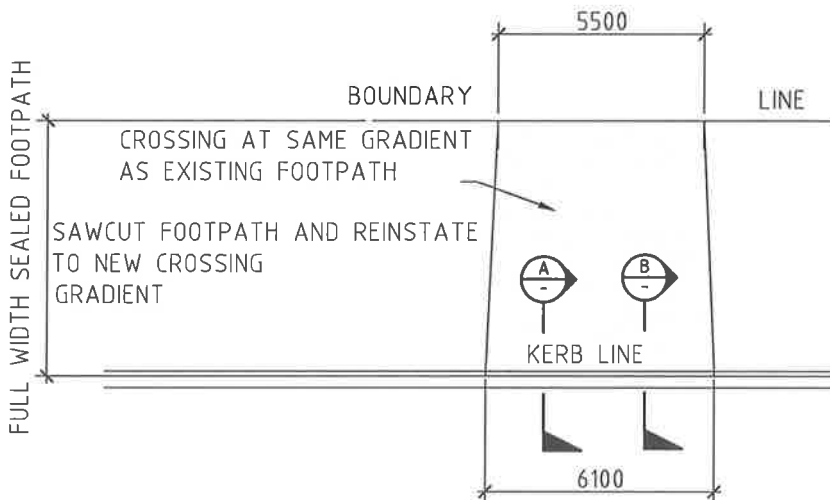
DRAWN BY MWH

SCALES :	AS NOTED	
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
VEHICLE CROSSINGS
RIGHT OF WAY CONCRETE FOOTPATH



Status Stamp:	CONSTRUCTION	
Date Stamp:	8/6/12	
Sheet No.	RD-WDC-005	Rev.
		5



CROSSING GRADIENTS
TO BE AS PER FIG 3.9
NZS 4404:2004

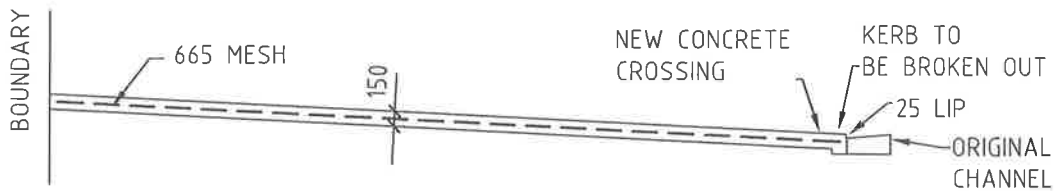
ENTIRE VEHICLE CROSSING
(ROAD TO BOUNDARY)
TO BE CONCRETE

KERB AND CHANNEL PROFILE CONTINUES

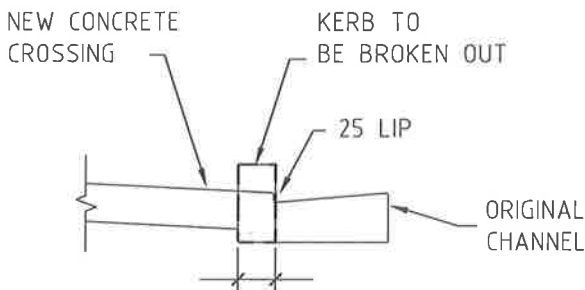
4-6 DWELLING UNITS
CROSSING PLAN

1:200

CONCRETE 20 MPA
FINISH U3 THEN U5 SOFT
BROOM AS PER NZS 3114 1987
NO COLOUR
NO PATTERNS OR STAMPING
NO EXPOSED AGGREGATE



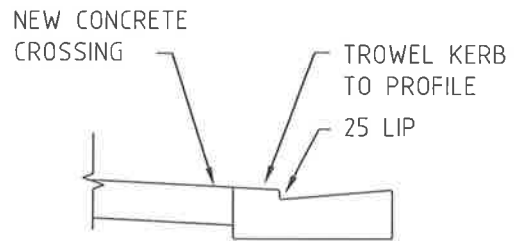
TYPICAL SECTION



EXISTING CHANNEL DETAIL

1:20

SECTION A



NEW CHANNEL DETAIL

1:20

SECTION B

NOTE

THIS DRAWING SHOWS AN ACCEPTABLE SOLUTION MEETING COUNCILS STANDARDS.
THE CROSSING WIDTH IS THE MINIMUM ALLOWABLE BUT MAY BE INCREASED UP TO 6m AT COUNCILS DISCRETION.
CROSSING WIDTHS GREATER THAN 6m REQUIRE RESOURCE CONSENT APPROVAL.
TO BE READ IN CONJUNCTION WITH DRAWING RD-WDC-009

DRAWN BY MWH

SCALES :	AS NOTED	
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS

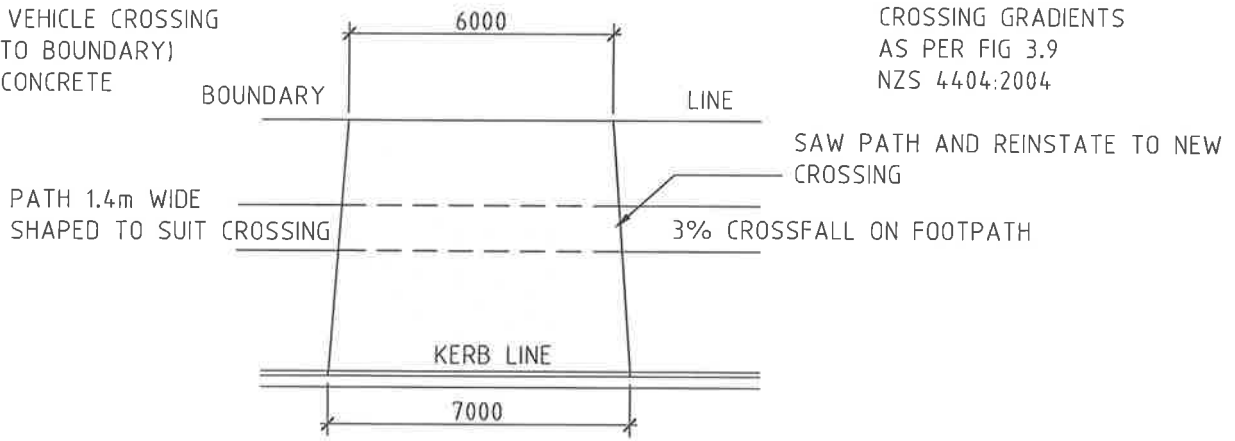
VEHICLE CROSSINGS
RIGHT OF WAY SEALED FOOTPATH



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	RD-WDC-006	Rev.
		5

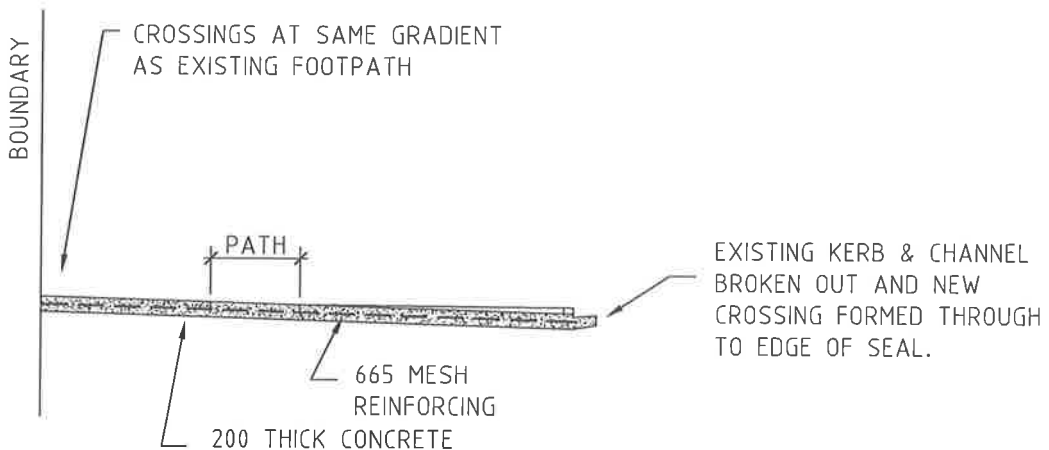
ENTIRE VEHICLE CROSSING
(ROAD TO BOUNDARY)
TO BE CONCRETE

CROSSING GRADIENTS
AS PER FIG 3.9
NZS 4404:2004



PLAN
1:200

CONCRETE 20 MPA
FINISH U3 THEN U5 SOFT
BROOM AS PER NZS 3114 1987
NO COLOUR
NO PATTERNS OR STAMPING
NO EXPOSED AGGREGATE



TYPICAL SECTION
NEW CROSSING / EXISTING KERB
1:100

NOTE

THIS DRAWING SHOWS AN ACCEPTABLE SOLUTION MEETING COUNCILS STANDARDS.
CROSSING WIDTHS GREATER THAN 6m REQUIRE RESOURCE CONSENT APPROVAL.
TO BE READ IN CONJUNCTION WITH DRAWING RD-WDC-009
IF A CROSSING IS DEEMED TO BE COMMERCIAL LIGHT THE COUNCIL MAY PERMIT THE
CONCRETE TO BE REDUCED BY 50mm IN DEPTH, BUT IS AT THE COUNCILS DISCRETION.

DRAWN BY MWH

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK SERVER: \WANGANUI\INZWANIS01 TAB/DWG: TAB-DWG

SCALES :	AS NOTED	
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

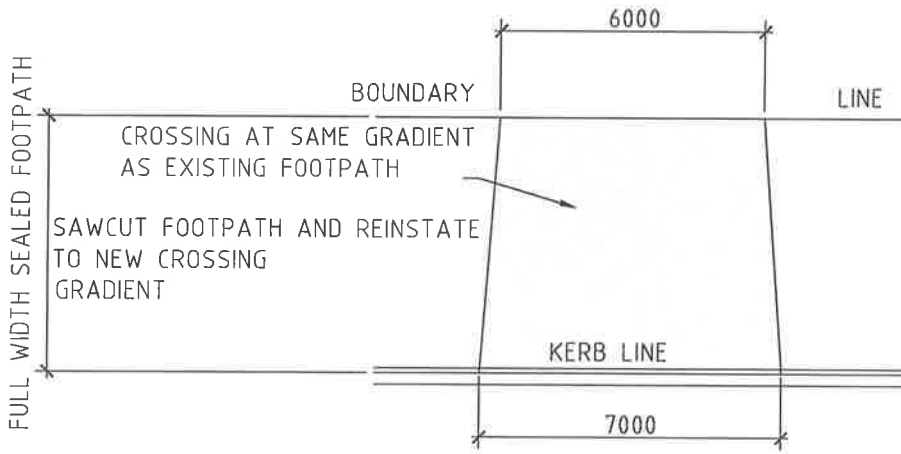
WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
VEHICLE CROSSINGS
COMMERCIAL - CONCRETE FOOTPATH



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	RD-WDC-007	Rev.
		8

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK

SERVER: WANGANUI (NZWANTIS01) TAB/DWG: TAB-DWG



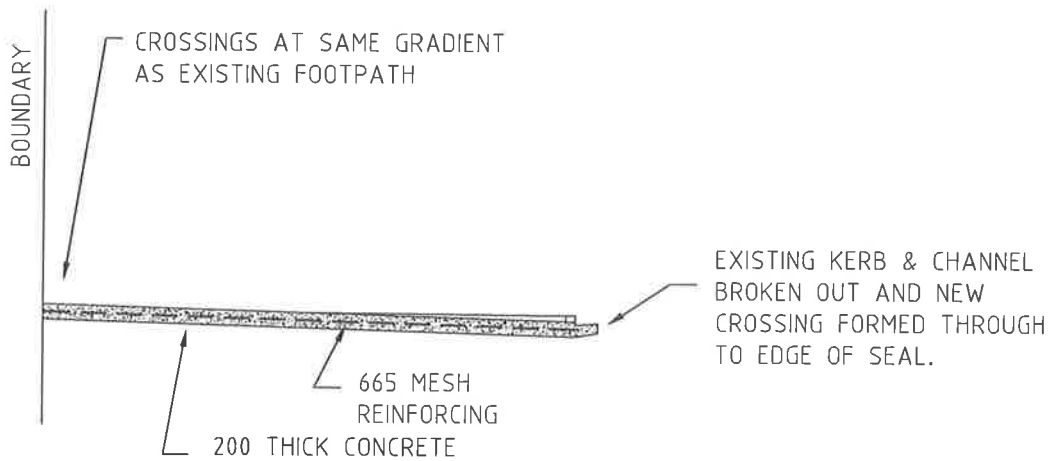
CROSSING GRADIENTS
AS PER FIG 3.9
NZS 4404:2004

ENTIRE VEHICLE CROSSING
(ROAD TO BOUNDARY)
TO BE CONCRETE

PLAN

1:200

CONCRETE 20 MPA
FINISH U3 THEN U5 SOFT
BROOM AS PER NZS 3114 1987
NO COLOUR
NO PATTERNS OR STAMPING
NO EXPOSED AGGREGATE



TYPICAL SECTION

NEW CROSSING / EXISTING KERB

1:100

NOTE

THIS DRAWING SHOWS AN ACCEPTABLE SOLUTION MEETING COUNCILS STANDARDS.
CROSSING WIDTHS GREATER THAN 6m REQUIRE RESOURCE CONSENT APPROVAL.
TO BE READ IN CONJUNCTION WITH DRAWING RD-WDC-009

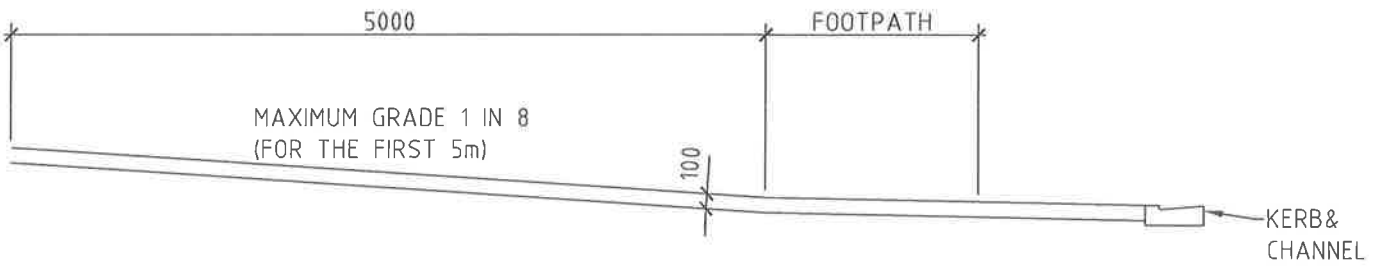
DRAWN BY MWH

SCALES :	AS NOTED	
	INIT	DATE
DESIGNED		
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
VEHICLE CROSSINGS
COMMERCIAL SEALED FOOTPATH



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	RD-WDC-008	Rev.
		7



TYPICAL SECTION

DRAWN BY MWH

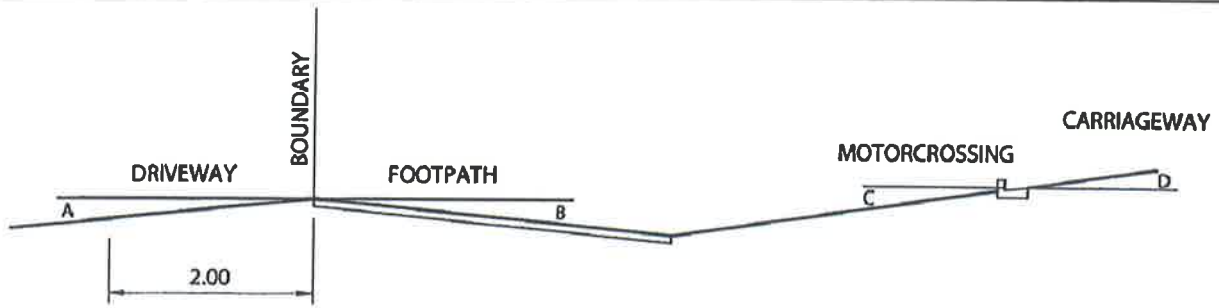
SCALES :	AS NOTED	
DESIGNED	INIT	DATE
DRAWN	LGS	6/12
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS

MAXIMUM CHANGE OF GRADE
FOR URBAN VEHICLE CROSSING

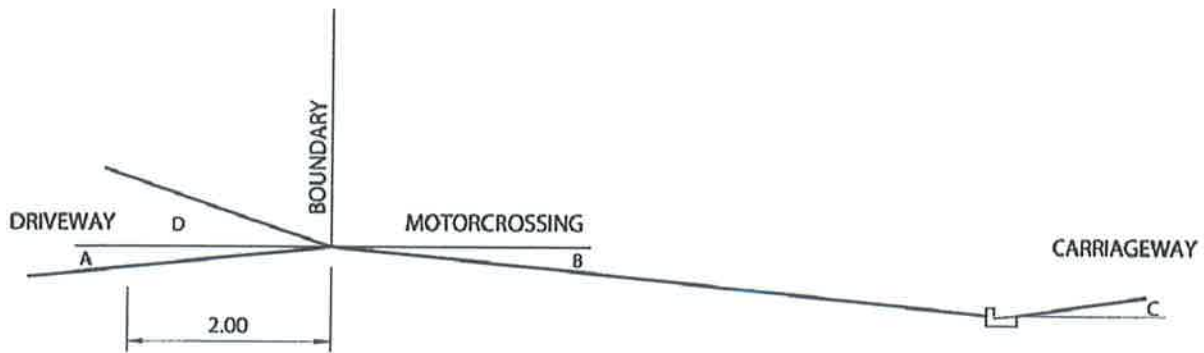


Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	RD-WDC-009	Rev.
		5



MAXIMUM CHANGE OF GRADE: $A + B \leq 10\%$ (or 5.7°)
 $C - D \leq 10\%$ (or 5.7°)
 $B + C \leq 17\%$ (or 9.6°)

LOW LEVEL FOOTPATH



MAXIMUM CHANGE OF GRADE: $A + B \leq 10\%$ (or 5.7°)
 $D - B \leq 17\%$ (or 9.6°)
 $B + C \leq 17\%$ (or 9.6°)

STANDARD FOOTPATH

NOTE -

1. A, B, C, & D refer to the gradients expressed either as a percentage or in degrees.
2. Low slung cars with ground effect features may not meet the criteria assumed in this design guide.
3. LTSA document *Light Vehicle Sizes and Dimensions: Street Survey Results and Parking Space Requirements - Road and Traffic Standards Information No. 35* (June 1994) contains more information about the 90th and 99th percentile vehicles.
4. Buses are permitted lower clearance value of (A+B) of 6% or 3.4° .

BASED ON 90th PERCENTILE CAR AS AT 1990.

(REFER TO RD-WDC-009)

GUIDE FOR MAXIMUM BREAKOVER ANGLES FOR VEHICLE CROSSINGS

NZS 4404:2004 pg. 70

Figure 3.9 - Maximum breakover angles for vehicular access to property

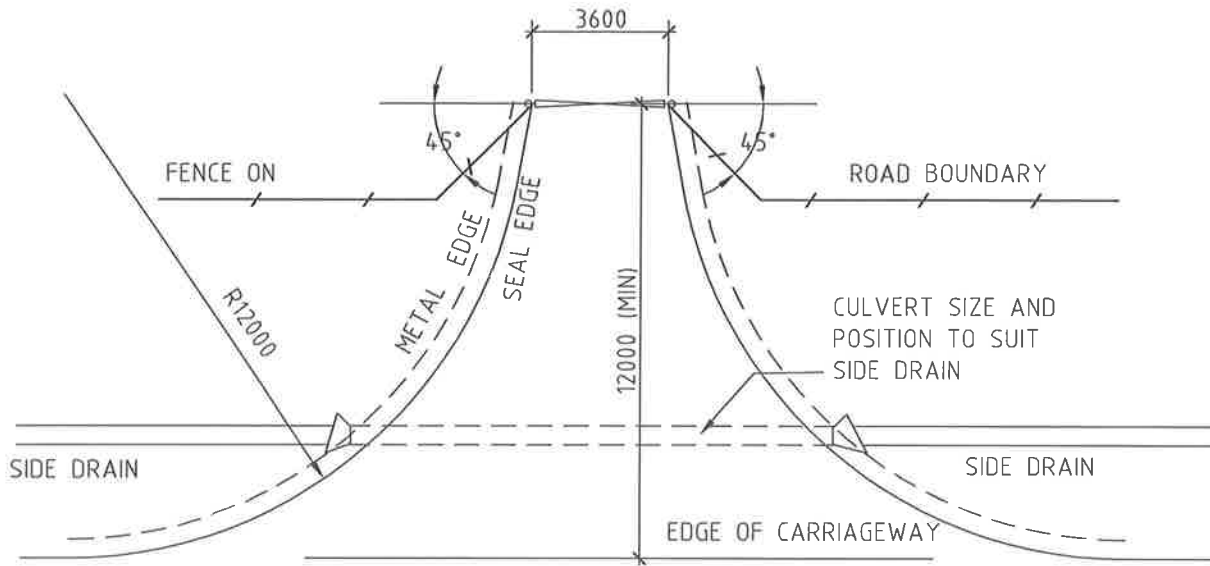
DRAWN BY MWH

SCALES :	AS NOTED	
	INIT	DATE
DESIGNED		
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 VEHICLE CROSSINGS
 MAXIMUM BREAKOVER ANGLES FOR VEHICLE CROSSINGS

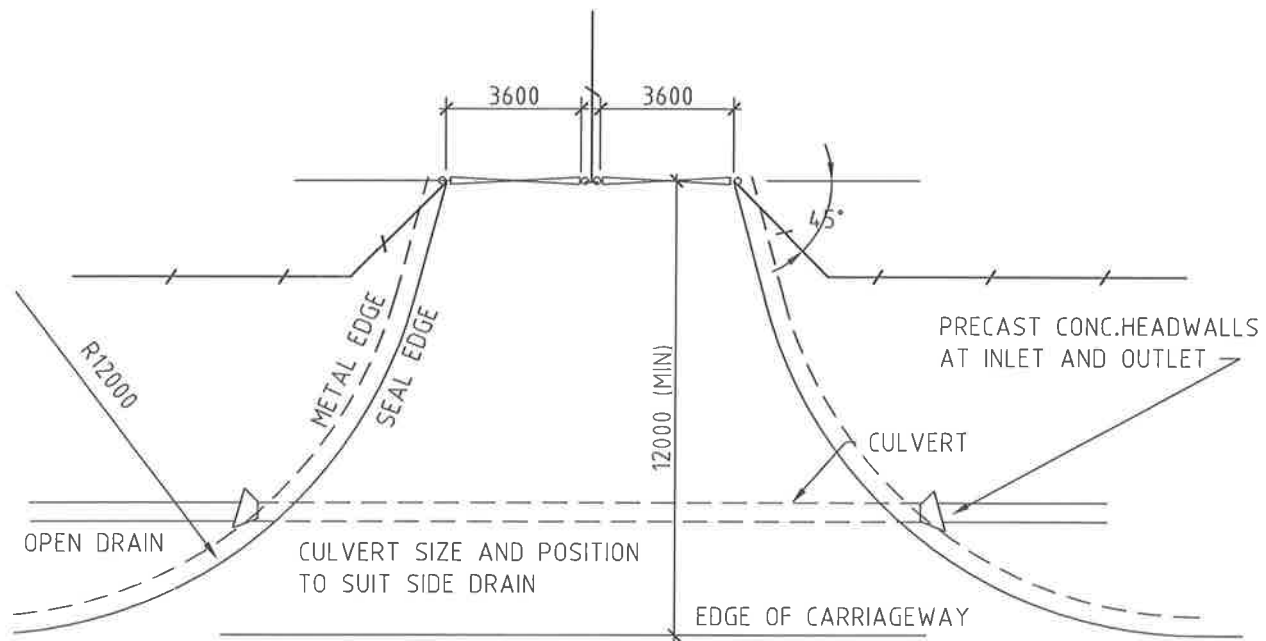


Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	RD-WDC-010	Rev.
		4



TYPICAL PLAN SINGLE ENTRANCEWAY

1:200



TYPICAL DOUBLE ENTRANCEWAY

1:200

NOTE:
CULVERTS TO BE RCRRJ
SIZED TO SUIT LOCATION

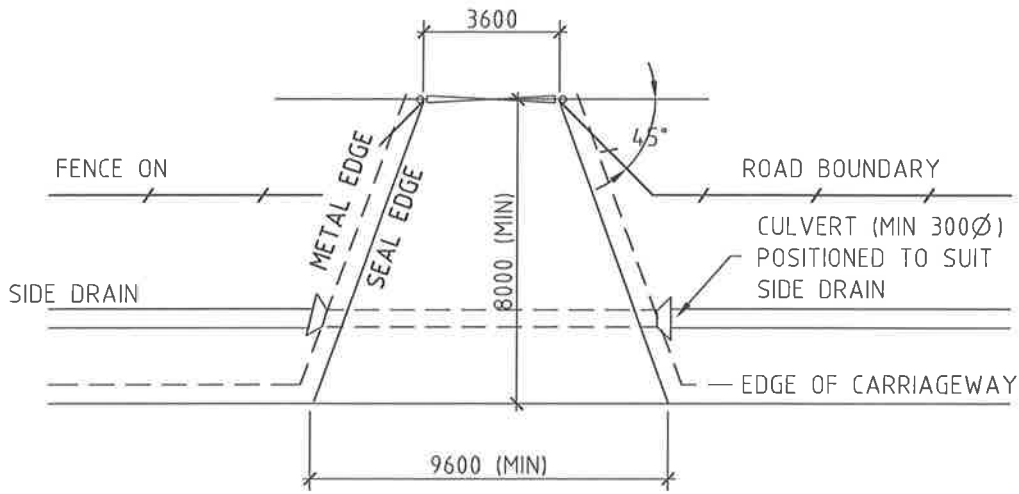
DRAWN BY MWH

SCALES :	AS NOTED	
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
VEHICLE CROSSINGS
RURAL HEAVY VEHICLE

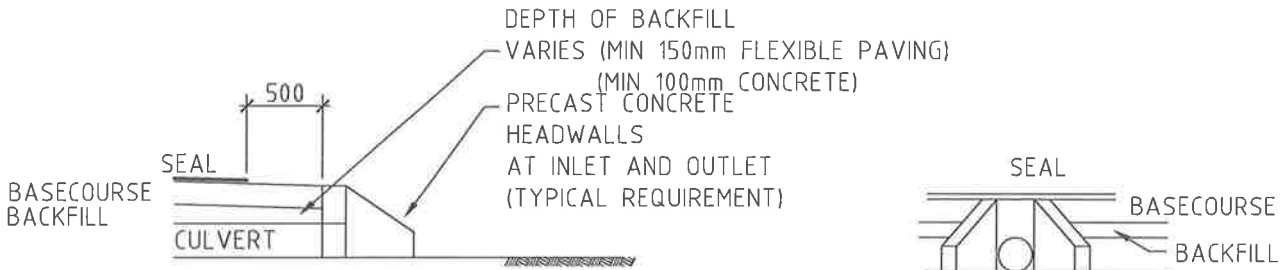


Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	RD-WDC-011	Rev.
		3



TYPICAL PLAN SINGLE ENTRANCEWAY

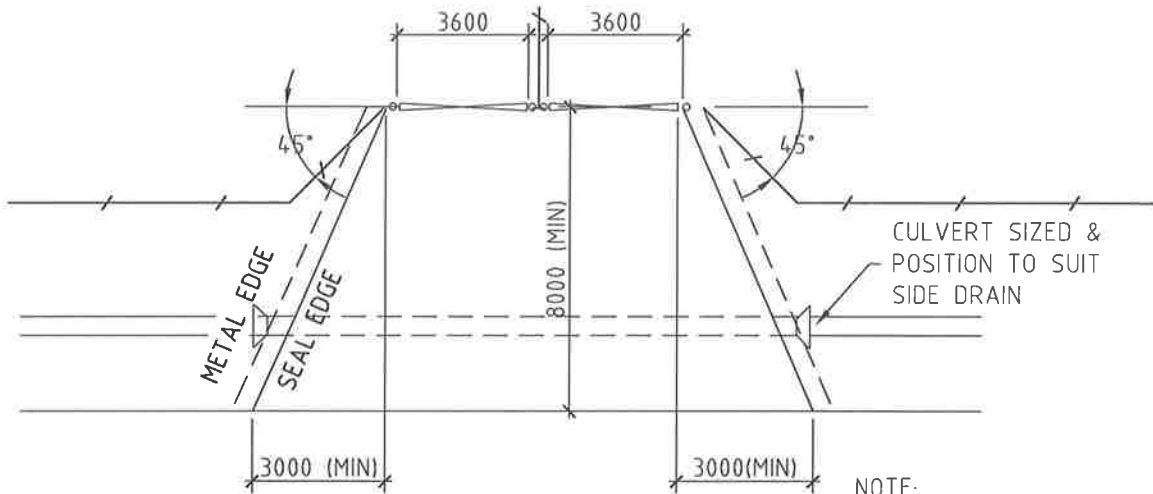
1:200



DEPTH OF BACKFILL
VARIES (MIN 150mm FLEXIBLE PAVING)
(MIN 100mm CONCRETE)
PRECAST CONCRETE
HEADWALLS
AT INLET AND OUTLET
(TYPICAL REQUIREMENT)

HESSIAN BAGGED CONCRETE HEADWALLS MAY BE USED FOR CULVERTS UP TO 375 DIAMETER

CULVERT INSTALLATION



NOTE:
CULVERTS TO BE RCRRJ
MIN 300 DIA

TYPICAL DOUBLE ENTRANCEWAY

1:200

DRAWN BY MWH

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK

SERVER : WANGANUI (NZWANIS01) TAB/DWG : TAB-DWG

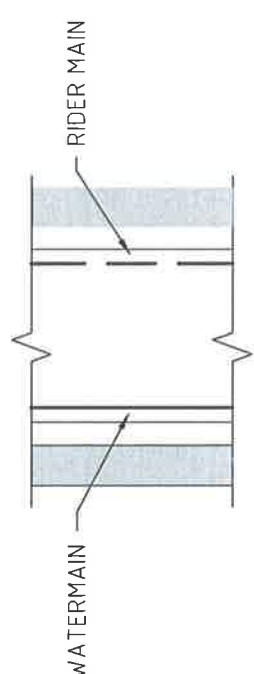
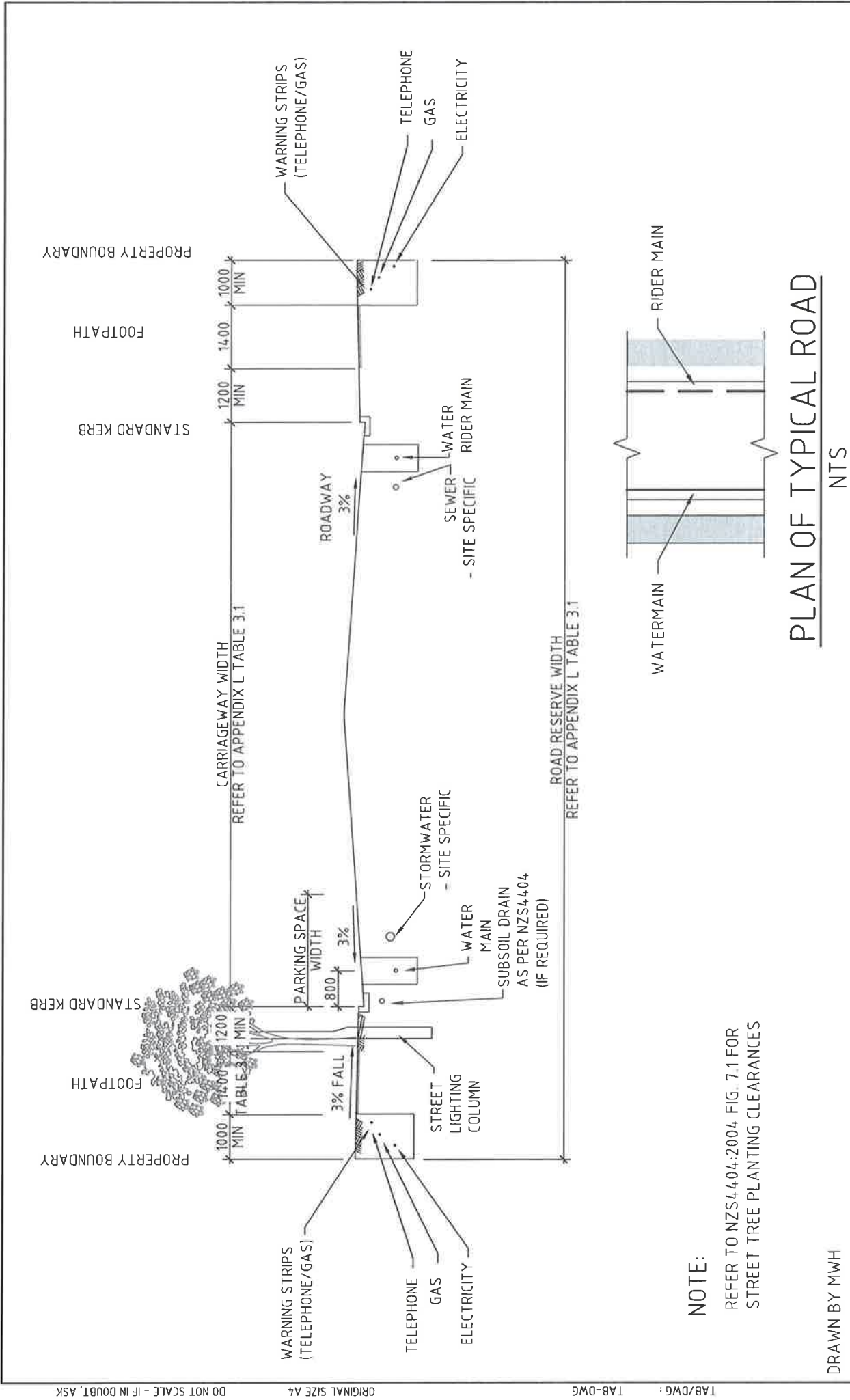
SCALES : SCALES		
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS

VEHICLE CROSSINGS
RURAL RESIDENTIAL



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	RD-WDC-012	Rev.
		3



PLAN OF TYPICAL ROAD

NTS

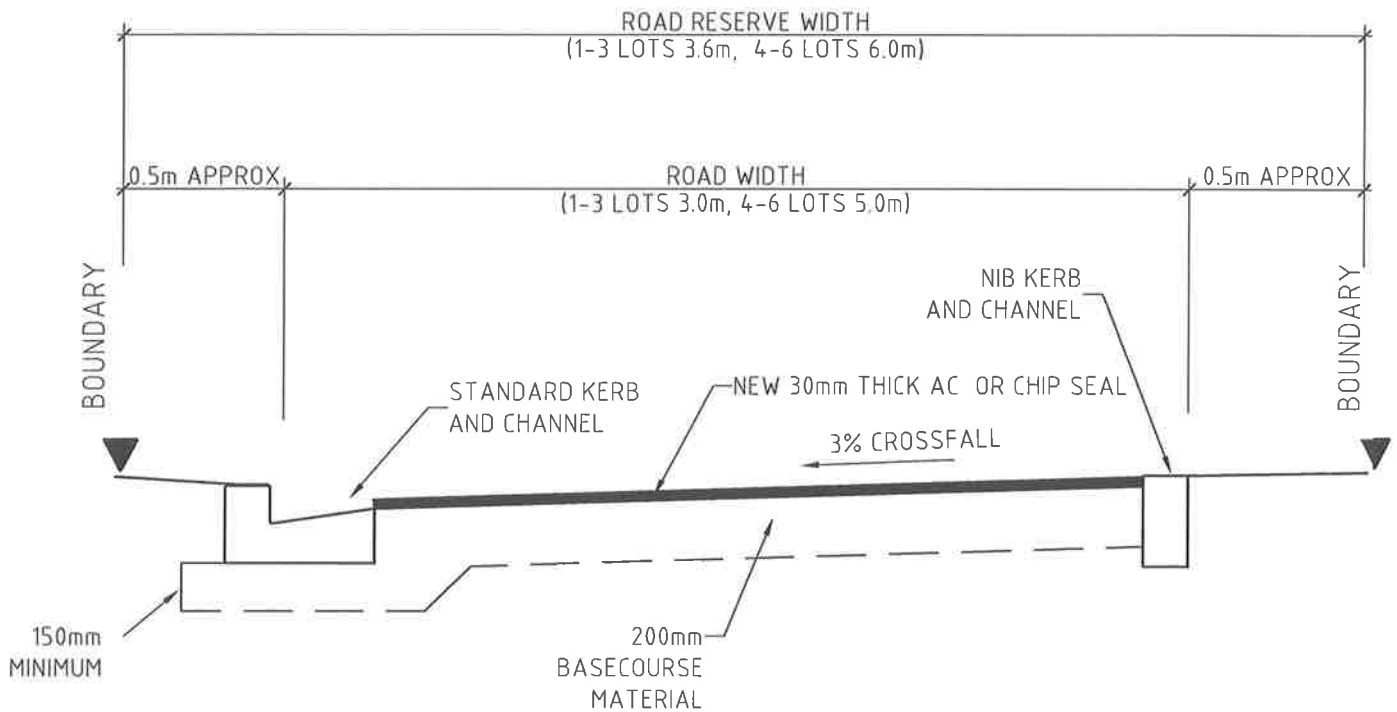
REV	AMENDMENTS	DATE	INITIAL				
<p>WANGANUI DISTRICT COUNCIL</p> <p>WANGANUI SUBDIVISIONAL STANDARD - DETAILS</p>							
<p>TYPICAL ROAD CROSS SECTION</p>							
<p>WANGANUI DISTRICT COUNCIL</p>							
<p>CONSTRUCTION</p>				<p>Date Stamp: 8/6/12</p>			
<p>RD-WDC-014</p>				<p>Sheet No.: 2</p>			
<p>Status Stamp</p>				<p>Rev: 2</p>			

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A4

TAB/DWG : TAB-DWG

SERVER : WANGANUI (NZWANTS01)



TYPICAL CROSS SECTION FOR RIGHT OF WAYS
SCALE 1 : 25

DRAWN BY MWH

SCALES :	AS NOTED	
	INIT	DATE
DESIGNED		
DRAWN	LGS	7/09
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
VEHICLE CROSSINGS
TYPICAL R.O.W. CROSS SECTION



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	RD-WDC-015	Rev.
		2

WITHOUT SPECIAL PROTECTION	WITH 50mm CONC. SLAB CROSSING CLEARANCE	WITH 50mm CONC. SLAB PARALLEL SEPARATION
230V - 400V NEUTRAL SCREENED OR ARMoured	50mm	50mm
230V-400V CABLES OTHER THAN NEUTRAL SCREENED OR ARMoured	50mm	450mm
11kV-33kV CABLES SINGLE CORE OR MULTICORE	150mm	450mm

CLEARANCES & SEPARATIONS FOR TELECOM & ELECTRICITY

WATER MAIN LOCATION
 COMMERCIAL/INDUSTRIAL : 800mm ROAD SIDE OF KERB
 RESIDENTIAL : 800mm FROM FACE OF KERB
 DEPTH OF COVER : MAIN : 900mm RIDER 750mm

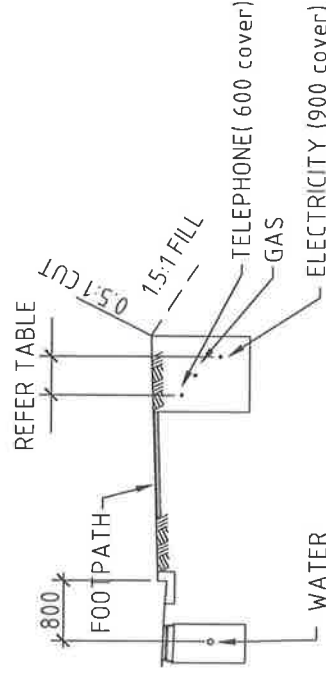
REFER TABLE

DRAWN BY MWH

LOCATION	PRESSURE	MAINS	MINIMUM SERVICE
CARRIAGEWAY (LOCAL AUTHORITY)	LOW & MEDIUM	600mm	600mm
	INTERMEDIATE	900mm	900mm
CARRIAGEWAY (STATE HIGHWAY)	LOW & MEDIUM	1000mm	1000mm
	INTERMEDIATE	1000mm	1000mm
OTHER	LOW & MEDIUM	600mm	600mm
	INTERMEDIATE	900mm	600mm
PRIVATE PROPERTY	LOW & MEDIUM	600mm	450mm

MAXIMUM DEPTH OF COVER TO BE 1000mm UNLESS SPECIFICALLY STATED
 MINIMUM CLEARANCE UNDER EXISTING SERVICE TO BE 150mm
 MINIMUM COVER UNDER OPEN CHANNEL OR CULVERT TO BE 1000mm

DEPTH OF COVER - GAS



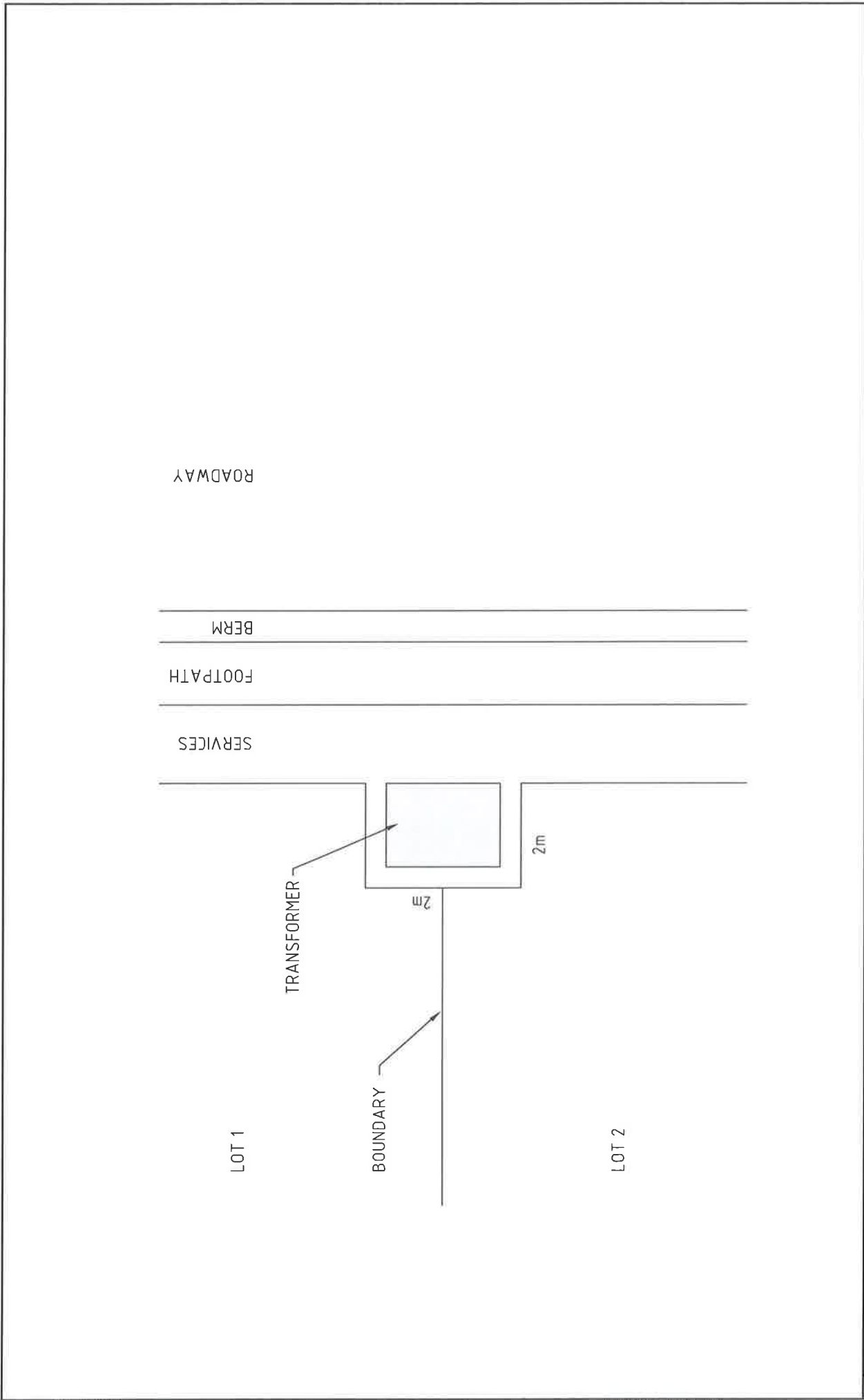
TYPICAL DUCT SECTION

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS



Status Stamp	CONSTRUCTION
Date Stamp	8/6/12
Sheet No	RD-WDC-016
Rev.	2

TYPICAL CROSS SECTION - SERVICES



REV	AMENDMENTS	DATE	INITIAL	APPROVED

SCALES: NTS
 DESIGNED
 DRAWN
 CHECKED
 INIT
 LGS
 DATE
 12/05

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 TRANSFORMER LOCATION (PREFERRED)

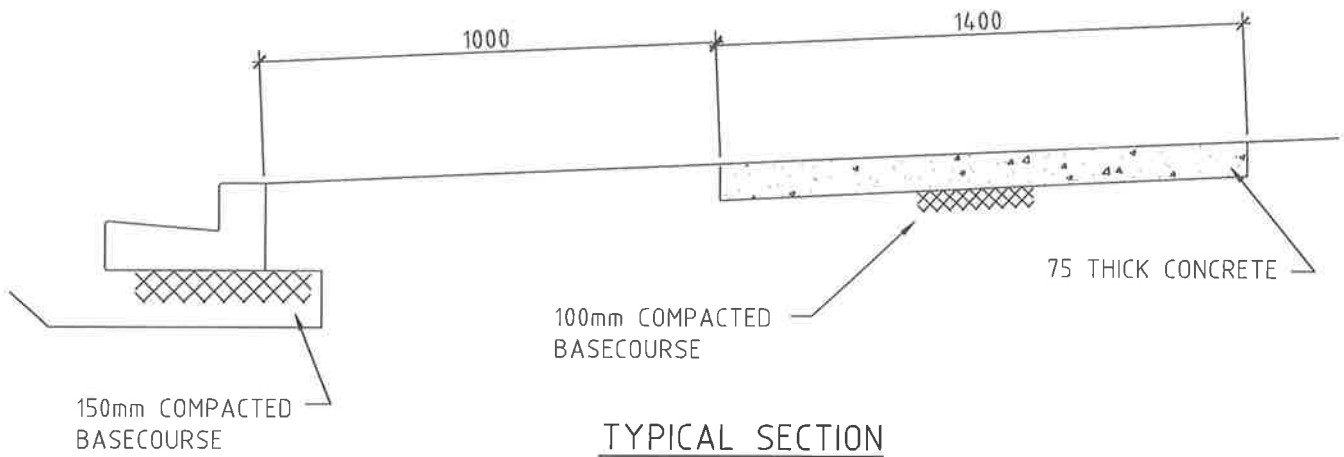


Status Stamp CONSTRUCTION	Date Stamp 8/6/12	Sheet No. RD-WDC-017	Rev. 2
-------------------------------------	-----------------------------	--------------------------------	------------------

ORIGINAL SIZE A4 DO NOT SCALE - IF IN DOUBT, ASK

SERVER : WANGANUI (NZWAN1501) TAB/DWG : TAB-DWG

CONCRETE 20 MPA
 FINISH U3 THEN U5 SOFT
 BROOM AS PER NZS 3114 1987
 NO COLOUR
 NO PATTERNS OR STAMPING
 NO EXPOSED AGGREGATE



TYPICAL SECTION

1:20

DRAWN BY MWH

SCALES :	AS NOTED	
DESIGNED	INIT	DATE
DRAWN	LGS	6/06
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL STANDARD - DETAILS
 FOOTPATH CONSTRUCTION

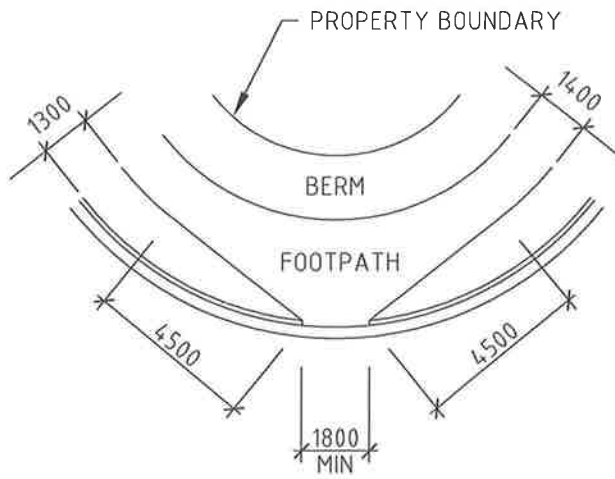


Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	RD-WDC-018	Rev.
		5

DO NOT SCALE - IF IN DOUBT, ASK ORIGINAL SIZE A4

TAB/DWG : TAB-DWG

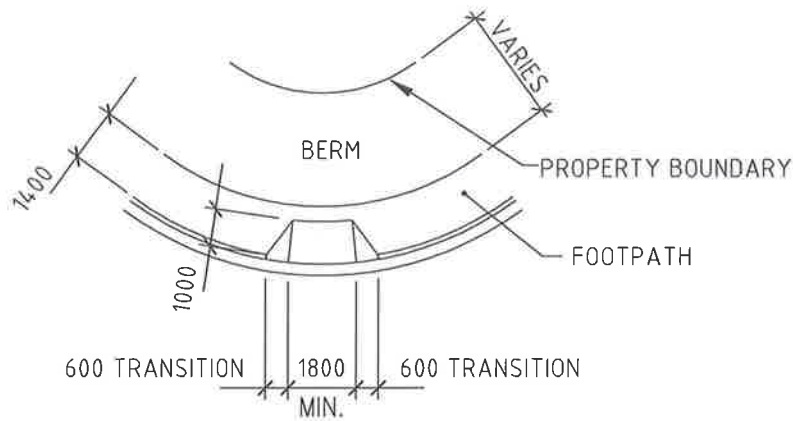
SERVER : WANGANUI\INZ\WANS01



CONCRETE 20 MPA
 FINISH U3 THEN U5 SOFT
 BROOM AS PER NZS 3114 1987
 NO COLOUR
 NO PATTERNS OR STAMPING
 NO EXPOSED AGGREGATE

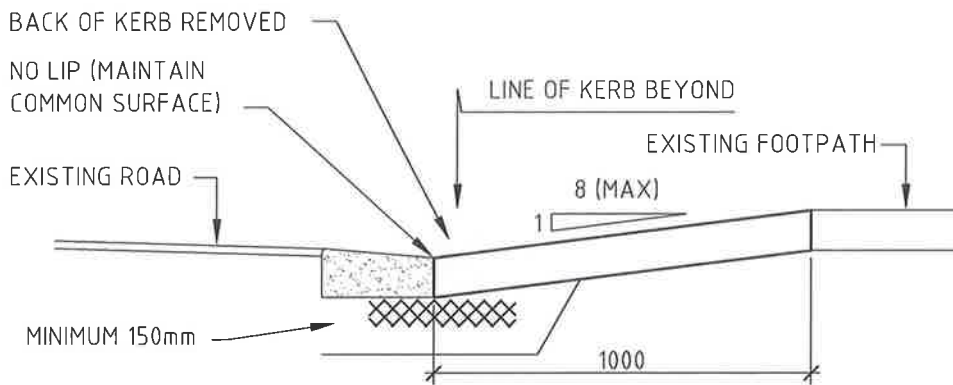
LIPLESS CROSSING

SCALE 1 : 200
 (WHERE FOOTPATH IS SEPARATE FROM KERB)



LIPLESS CROSSING

SCALE 1 : 200
 (WHERE FOOTPATH IS NEXT TO KERB)



SECTION THROUGH LIPLESS CROSSING

SCALE 1 : 20

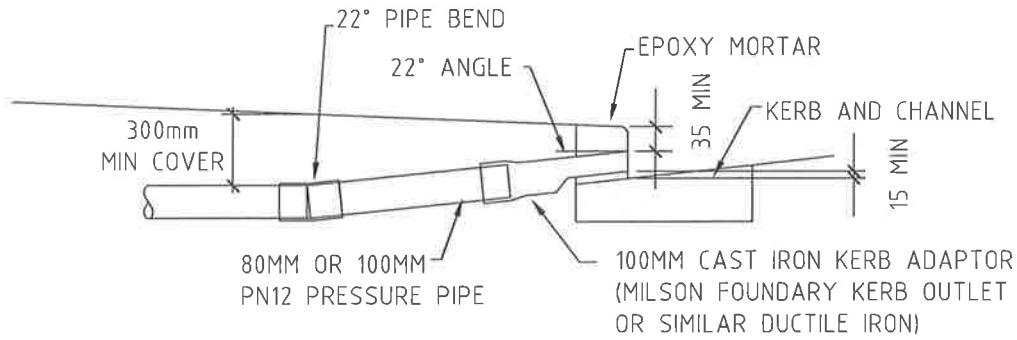
DRAWN BY MWH

SCALES :	AS NOTED	
DESIGNED	INIT	DATE
DRAWN	LGS	6/06
CHECKED		
APPROVED		

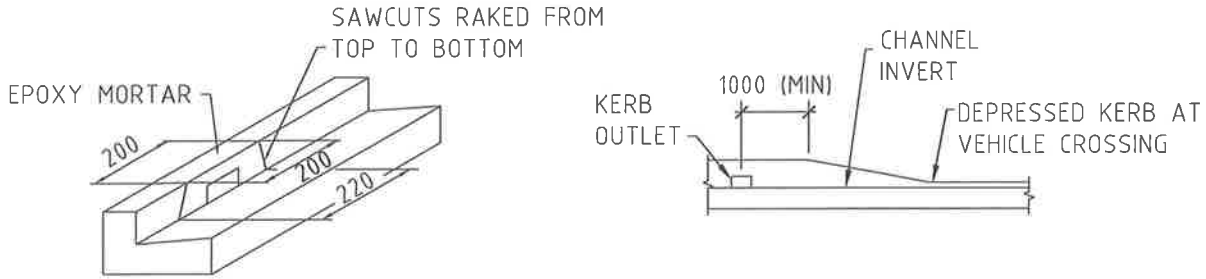
WANGANUI DISTRICT COUNCIL
 WANGANUI SUBDIVISIONAL PLANS
 MOBILITY CROSSING RAMPS



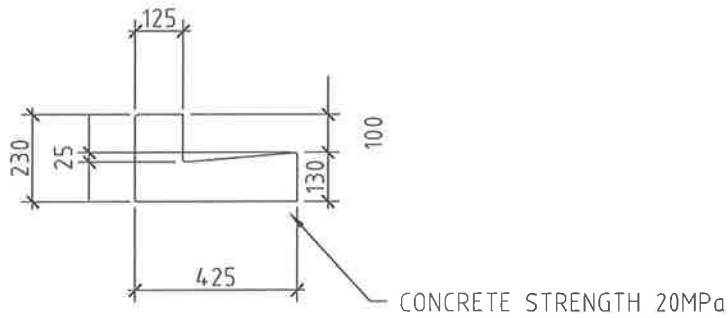
Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No	RD-WDC-019	Rev
		1



KERB ENTRY



VERTICAL KERB

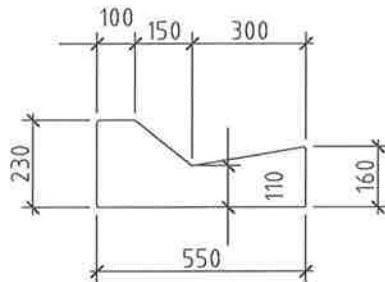


NOTE

1. BASECOURSE UNDER KERB TO BE A MIN. OF 150mm
2. FORMATION LEVEL OF KERB BASECOURSE TO MATCH FORMATION LEVEL OF ROAD.

STANDARD KERB & CHANNEL

1:20



MOUNTABLE KERB & CHANNEL

1:20

DRAWN BY MWH

SCALES :	AS NOTED	
DESIGNED	INIT	DATE
DRAWN	LGS	11/05
CHECKED		
APPROVED		

WANGANUI DISTRICT COUNCIL
WANGANUI SUBDIVISIONAL STANDARD - DETAILS
KERB AND CHANNEL DETAILS



Status Stamp	CONSTRUCTION	
Date Stamp	8/6/12	
Sheet No.	RD-WDC-020	Rev.
		1

Appendix B: Water Main Pressure Testing Criteria

B2 Add the following paragraph to the end of the clause

Refer to Wanganui District Council's test method.

Wanganui District Council adopts the pressure test criteria as set out in AS/NZS 2566 Part 2, Section 6, Appendix M and Appendix O for each specific type of pipe.

6.10.4 Pressure testing of water mains

Replace paragraph with the following new paragraph:

Before a new water main is connected to the existing reticulation, a successful pressure test shall be completed. The test shall be carried out as specified in Appendix B, in the presence of the authorised officer.

The reticulation shall withstand a pressure of 1400kpa measured at the lowest point of the section under test or 1.5 times the working pressure at any point in the system, whichever is greater.

The pressure shall be maintained for a period of 15 minutes. After 15 minutes the pressure drop shall not exceed 10% of test pressure.

Pressure test shall be carried out in the presence of an authorised representative of Council.

6.12 Add the following new clause

Rural Settlements and areas on restricted water supply

All of the above users are advised to have 24 hours on site storage.

These supplies generally do not have fire fighting capability. The flows to the properties are restricted based on land area and land use.

Testable double check backflows are to be installed on each connection and generally supplies are metered.

Each Scheme has its own Rules, Capital Contributions and connection costs.

Connection manifolds and fittings inside the manifolds are the property of Council.

Appendix C: Water Supply Disinfection Specification

Add the following Note to the top of Appendix C before C1

Note: Refer to Technical Specifications for Disinfection.

C1. Replace the first paragraph with the following new paragraph

After flushing the main to remove all debris and air, the main shall be filled with water containing a free available chlorine concentration of 15 g/m^3 and allowed to stand for a minimum of 12 hours for all new mains. At the end of the disinfection period, the free available chlorine (FAC) concentration shall be at least 5 g/m^3 . If the FAC is less than 5 g/m^3 at the completion of the period, the disinfection shall be repeated until a satisfactory result is obtained. Note that the main must not be drained after flushing unless all high points are 'vented' to allow for complete removal of air.

Appendix D: Related Documents

No Change.

Appendix E: Basic Steps of a Subdivision

The Subdivision Process

This Appendix looks at the subdivision process and the list below outlines what details each of the following flow charts covers:

A. Basic Steps in a Subdivision

This flow chart outlines the basic steps that a surveyor must undertake in order to carry out a subdivision. This includes dealing with the Territorial Authority (TA) and Land Information New Zealand (LINZ).

B. Detailed Subdivision Flow Chart

This chart shows the process the surveyor must undertake (in more detail) in order for the proposed subdivision application to be lodged with the TA.

C. The Consent Authority's Part in the Process

This chart details the process the subdivision application has to follow at the Consent Authority to the stage of approval (with or without conditions) or is declined. Once the consent is granted, the surveyor has 5 years to prepare and submit the full Land Transfer survey to the TA for approval; otherwise a new consent will be required.

D. The Land Transfer Survey

Once the subdivision has been approved (with or without conditions) by the TA, the surveyor can then proceed to a full Land Transfer survey of the site and prepare the dataset ready to send to LINZ. This chart outlines this process (including survey fieldwork and the issuing of s223 and s224 certificates by the TA).

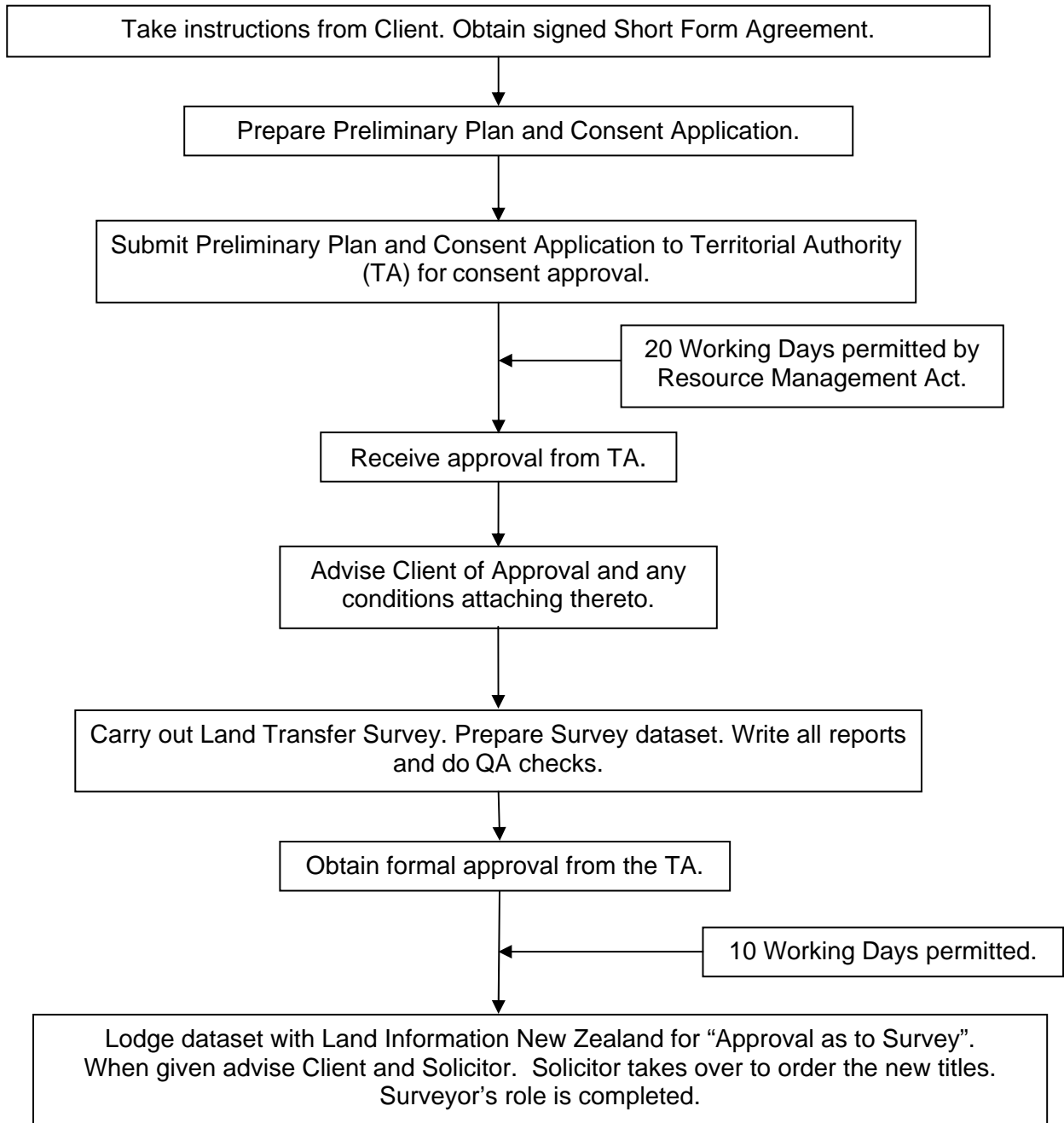
E. The Land Information New Zealand (LINZ) Process

This chart details the process that LINZ undertakes in order to ensure that the survey dataset that has been sent in by the surveyor is correct. Once the dataset is approved by LINZ, the surveyor's job is finished and a solicitor will deal with getting the Titles issued.

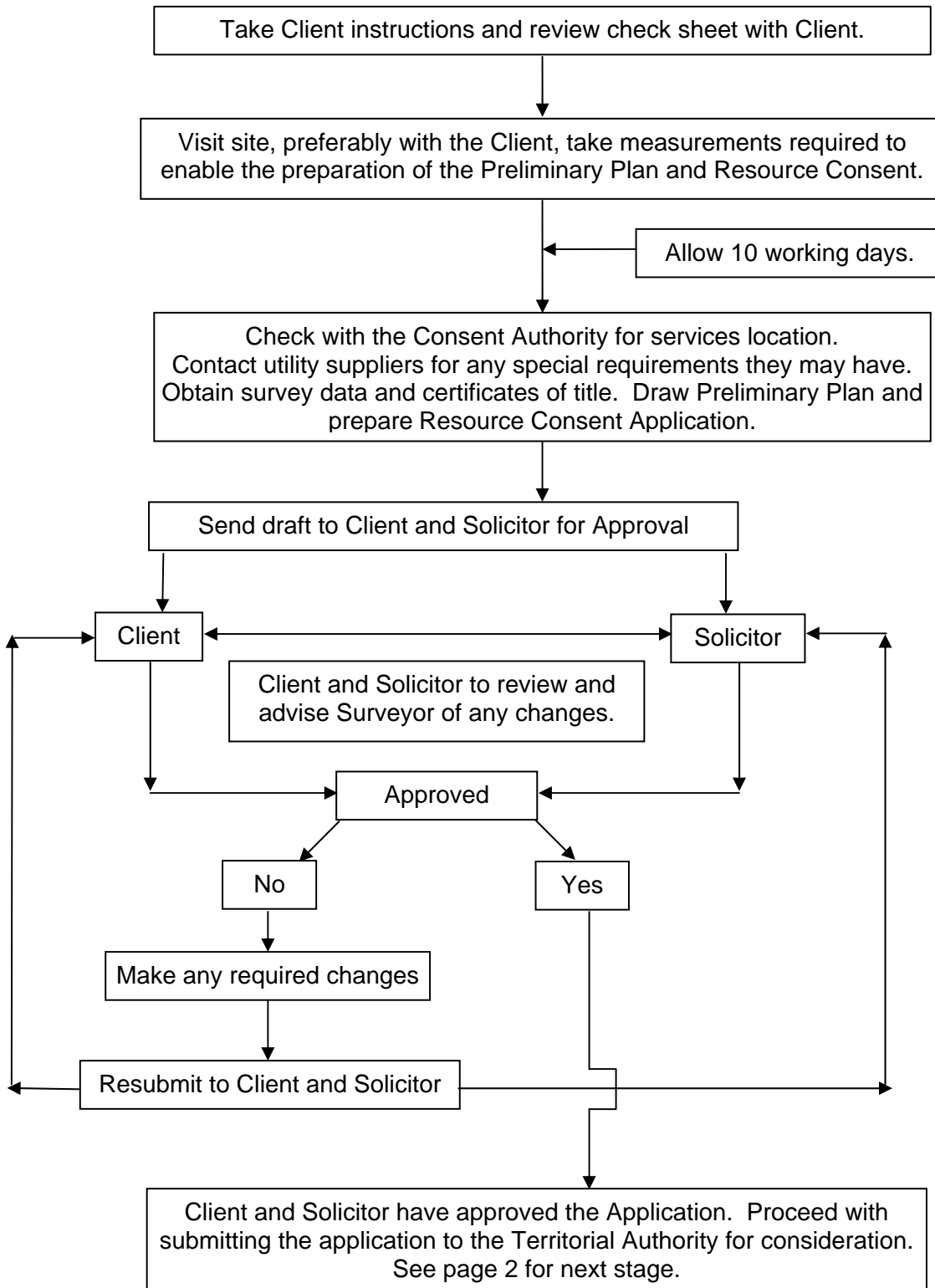
F. Process of Vesting Assets in Council

This chart details the process of construction approval, the s224 certificate approval and the vesting of assets in the TA.

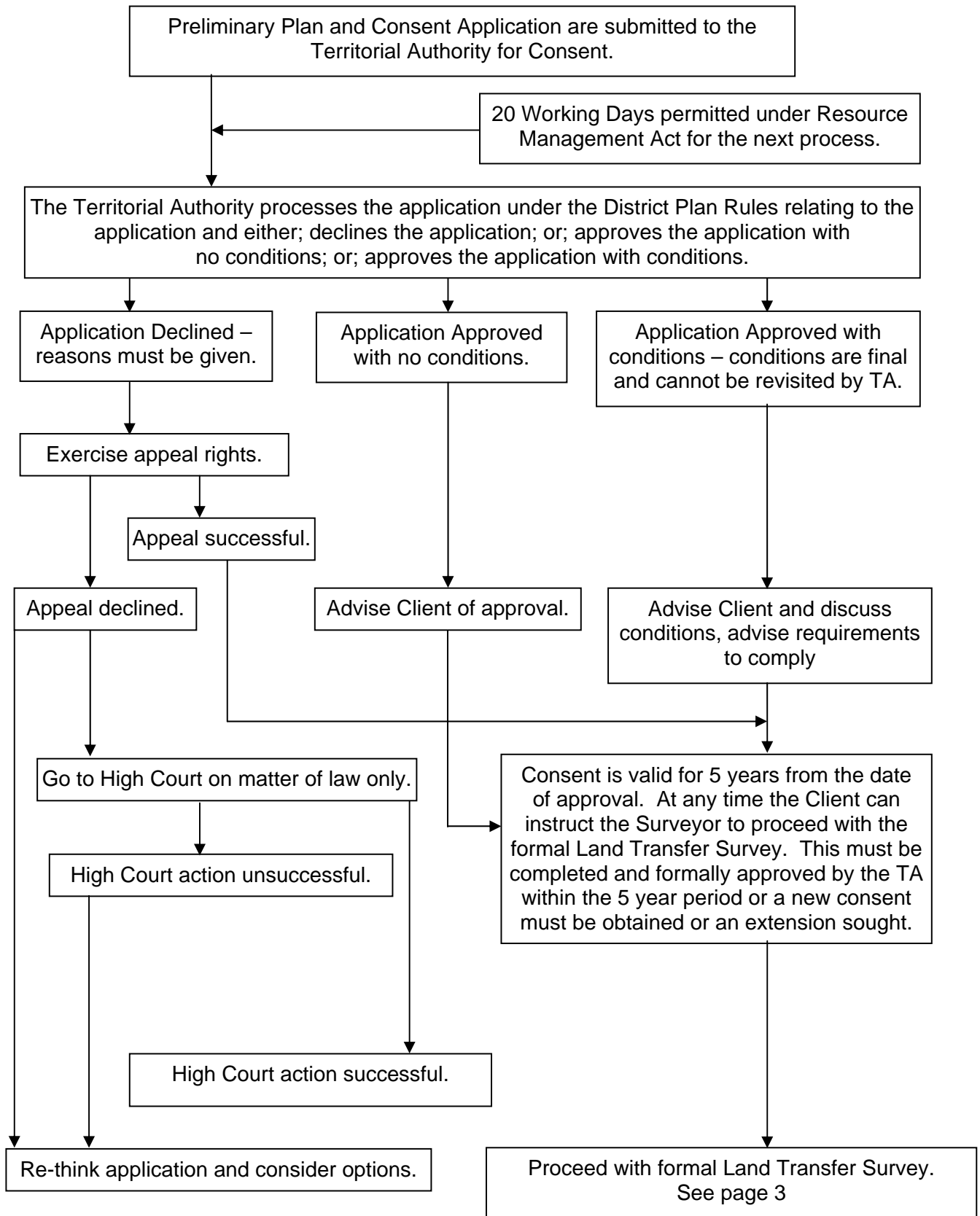
Basic Steps in a Subdivision



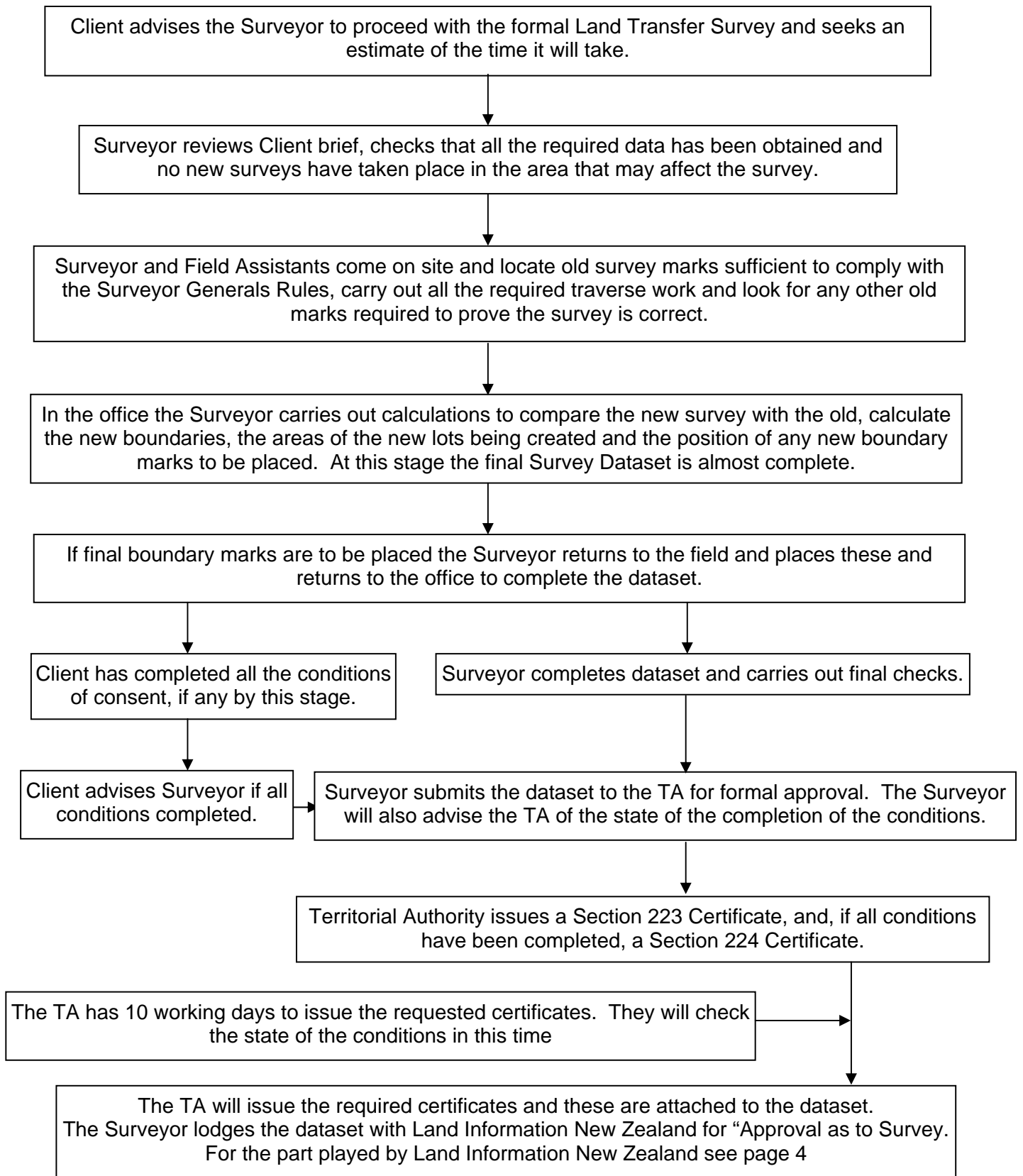
Detailed Subdivision Flow Chart



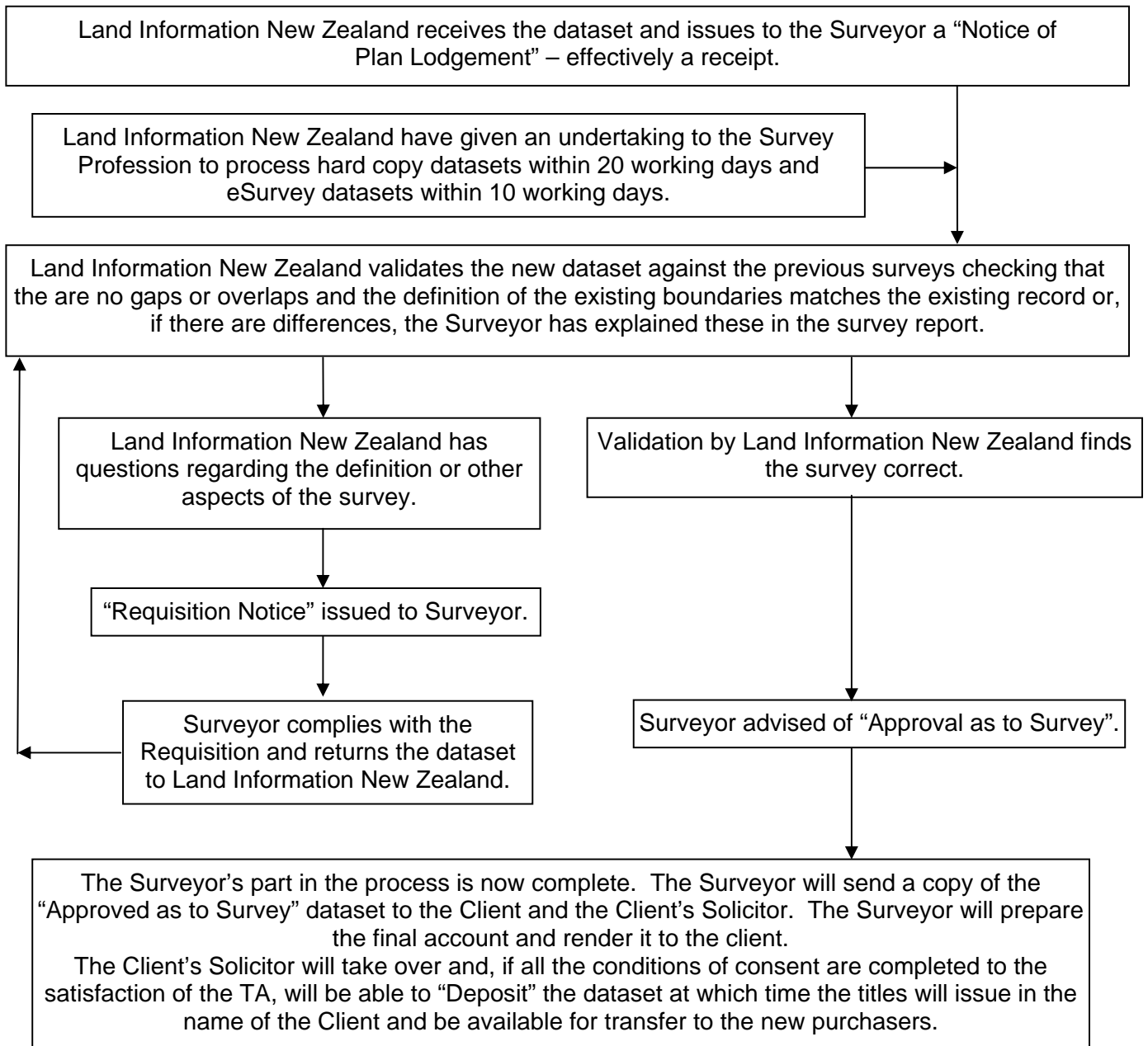
The Consent Authority's Part in the Process



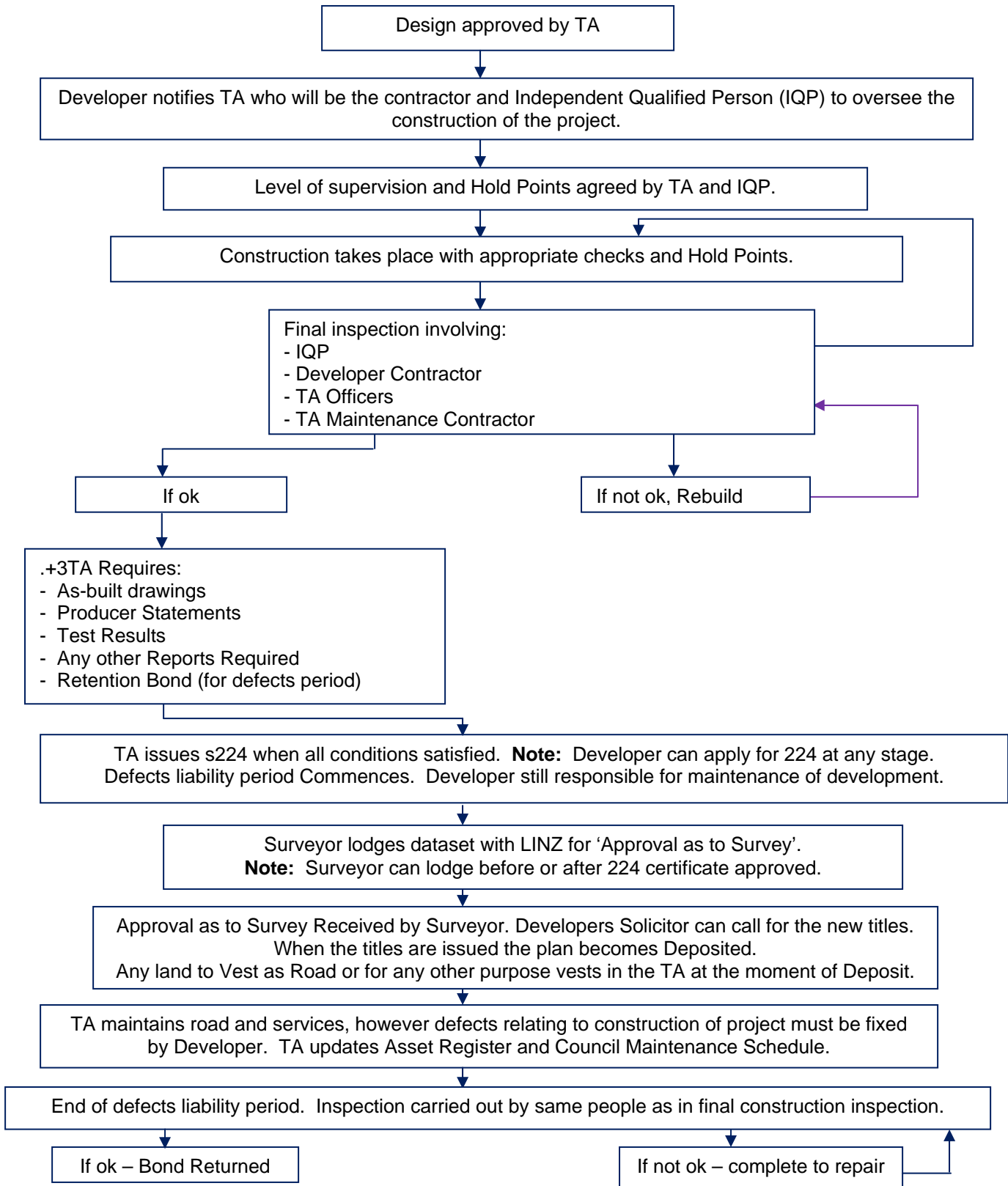
The Land Transfer Survey



The Land Information New Zealand Process



Process of Vesting Assets in Council



Appendix F: Traffic Effects Assessment

Traffic Effect Assessment

A Guide to Preparation

What is a Traffic Effects Assessment (TEA)?

Many planning applications are of a size or type that would generate additional trips on the adjoining transport infrastructure. This additional demand may necessitate changes to be made to the road layout or to public transport services. Wherever possible, opportunities should be taken to provide direct access to public transport and to pedestrian / cycle infrastructure, thus helping to modify the overall transport impact.

The developer or promoter should provide a full and detailed assessment of how trips to and from the development might affect the road network and / or public transport facilities. The traffic effects assessment should be an impartial description of impacts and should include both positive and negative aspects of the proposed development.

Traffic effects assessment addresses two related issues. These are:

- Volume / capacity: what will be the effects of additional traffic on the safety and efficiency of the existing network?; and
- Environmental: what will be the effects of additional traffic in terms of noise, pollution and visual intrusion?

When is a TEA Required?

TEA's are usually produced by developers in support of a planning application and the primary responsibility rests with the developer and not the Local Authority. As a guide TEA's should be produced where:

- Traffic to and from the development exceeds ten percent of the average traffic flow over the same period on the adjoining road; or
- Traffic to and from the development exceeds five percent of the traffic flow on the adjoining road, where traffic congestion exists, or will exist, within the assessment period, or in other sensitive locations.

Traffic problems often relate to peak hours; therefore, the threshold should be applied to these peak periods. However, it may also be appropriate to consider other time periods, such as all day or the peak periods of traffic generated by the development, if it is thought that the impact for such periods is likely to be of concern, for example Saturday shopping or Sunday tourism.

A TEA may be required even though the conventional threshold tests do not apply. An example might be where the percentage increase in vehicle numbers may be small but where most, if not all, of the additional vehicles are large goods vehicles, such as at a landfill site or quarry.

Furthermore, there will be developments so significant in size that TEA's should be undertaken as a matter of course. As a guide, proposals which are likely to attract additional traffic sufficient to warrant a TEA are:

- Residential development in excess of 200 units;
- Business with a Gross Floor Area (GFA) in excess of 5000m²;
- Warehousing with a GFA in excess of 10000m²;
- Retail development with a GFA in excess of 1000m²;
- 100 trips in/out combined in the peak hour; or
- 100 off-street parking spaces, with a single access to the street network.

The same threshold approach should be used to establish the area of influence of the development. Hence, the study area should include all links and associated junctions, where traffic to and from the development will be likely to exceed 10% of the existing traffic (or five per cent in congested or other sensitive locations) or such other threshold as may have been established by the local Roading or Planning Authority.

What Should a TEA Cover?

Prior to understanding a TEA

Prior to undertaking a full TEA a scoping study should be carried out by the developer, in conjunction with the Planning and Roading Authority, to agree the key aspects to be addressed by the TEA. The scoping study should set out details of data to be collected, the area of analysis, key junctions to be considered, the methodology to be adopted and the years of assessment. Such a scoping study will provide a basis for assessing the level of resources that will be required to undertake the TEA. This scoping study will be invaluable to all parties involved and should ensure that work is not undertaken unnecessarily and that resources are directed to those aspects requiring most attention.

Trip Attraction

There are several databases that contain information about the level of traffic likely to be attracted to a development. A database allows a user to select existing developments and to examine traffic levels that occur at these sites.

However, there is normally a wide spread of trip-rate values even for similar developments and the reasons are not immediately obvious. Guidelines make the point that using a median value creates a forecast with a 50% chance of being exceeded. If car park size or junction capacity is to be derived from such values, there could be major risks associated with undersizing or under-designing such facilities.

Consequently, it is prudent to consider the design elements based on a trip-rate higher than the average. An 85th percentile value is recommended (ie, a value not exceeded by 85% of all values).

Assessments should be undertaken at the year of opening and for a year either 10 or 15 years later. Forecasts should relate specifically to the type of road, locality and time period being assessed. Assessors will, therefore, need to consider local traffic trends, the availability of local forecasts, or applications derived from any regional Trip-End Model.

Design Considerations

Proposals for new developments will include layouts of access roads, service yards and car parking. Pedestrian access, facilities for cyclists and the design of public transport infrastructure, such as bus stops and shelters should also be examined.

The TEA should illustrate access to, and the internal layout of, the site and demonstrate how facilities are to be provided for disabled people, servicing traffic, pedestrian access, cyclists and public transport.

TEA Format

The following pages outlines a suggested format for the production of a TEA and provide references. Clearly many TEA's will not need to cover all of the items identified within the suggested format but authors should state clearly why particular issues are not considered to be relevant.

TRAFFIC EFFECTS ASSESSMENT

FORMAT CHECKLIST AND REFERENCE GUIDE

1. Non-Technical Summary

- A brief non-technical resume of the projected traffic impact of development

2. Existing Conditions

- Description of current transport policies for the area (including NZLTS, RLTS, LTCCP, etc);
- Quantification of current traffic flows on links and junctions within the affected area;
- Examination of historic accident records, where appropriate;
- Quantification of pedestrian flows at critical locations;
- Identification of critical links and junctions;
- Identification of committed highway works in the area; and
- Identification of developments with planning consent but not yet implemented

References

- Relevant Local District Plan
- Parking and Traffic Generation Survey Results (Site Specific)
- NZ Land Transport Strategy
- Regional Land Transport Strategy
- Long Term Council Community Plan (LTCCP)
- LTSA RTS
- LTSA RSS
- LTSA Road Safety Reports (by Region, District, State Highway)
- LTSA Crash Listings and CAS Database
- Austroads Guide to Traffic Engineering Practice - Part 1, Traffic Flow
- Austroads Guide to Traffic Engineering Practice - Part 2, Roadway Capacity
- Austroads Guide to Traffic Engineering Practice - Part 3, Traffic Studies
- Austroads Guide to Traffic Engineering Practice - Part 4, Road Crashes
- Austroads Guide to Traffic Engineering Practice - Part 13, Pedestrians
- Transit NZ 10 year Forward Works Plan
- Local Council 10 year Forward Works Plan
- Corridor Management Plans

3. Proposed Development

- Description of current planning policies for the site including parking guidelines;
- Description of current use of the site and its recent usage history;
- Description of proposed use, including site area and development phasing;
- Specification of size of the development; and
- Provision of site plan for proposed development, where available.

References

- Relevant Local District Plan

4. Model Choice/Trip Attraction

- Quantification of current trip attraction of the site;
- Estimation of projected modal split;
- Estimation of trip attraction, specified by direction and vehicle type, for:
 - Weekday;
 - Peak hours; and
 - Development peak;
- Justification of the values used;
- Identification of times when traffic impact is at its greatest, i.e the peak combination of network and development traffic;
- For multi-purpose sites, provision of details of each significant element;
- Specification of trip attraction by phase (if appropriate); and
- Specification of trip attraction by construction period (if appropriate)

References

- Transfund Trips and Parking Related to Land Use – Report No. 209 and 210
- RTA Guide to Traffic Engineering Developments
- Relevant Local District Plan
- Parking and Traffic Generation Survey Results (Site Specific)
- Austroads Guide to Traffic Engineering Practice - Part 1, Traffic Flow
- Austroads Guide to Traffic Engineering Practice - Part 2, Roadway Capacity
- Austroads Guide to Traffic Engineering Practice - Part 3, Traffic Studies

5. Trip Distribution

- Definition of catchment area;
- Consideration of competing opportunities;
- Identification of transfer trips, ie the trips previously attracted to an alternative site;
- Identification of non-primary trips, ie 'pass-by' and 'diverted' trips that might already be on the network;
- Distribution of trips to potential opportunities ; and
- Justification for the methodology adopted.

References

- Transfund Trips and Parking Related to Land Use – Report No. 209 and 210
- RTA Guide to Traffic Engineering Developments
- Relevant Local District Plan
- Austroads Guide to Traffic Engineering Practice - Part 1, Traffic Flow
- Austroads Guide to Traffic Engineering Practice - Part 2, Roadway Capacity
- Austroads Guide to Traffic Engineering Practice - Part 3, Traffic Studies

6. Assignment of Development Traffic

- Identification of traffic routing to and from the site;
- Definition of turning movements at the site entrance; and
- Provision of modified traffic projections at key links and junctions within the affected area.

References

- Transfund Trips and Parking Related to Land Use – Report No. 209 and 210
- RTA Guide to Traffic Engineering Developments
- Parking and Traffic Generation Survey Results (Site Specific)
- Austroads Guide to Traffic Engineering Practice - Part 1, Traffic Flow
- Austroads Guide to Traffic Engineering Practice - Part 2, Roadway Capacity
- Austroads Guide to Traffic Engineering Practice - Part 3, Traffic Studies
- Site specific traffic modelling (as required)

7. Assessment Years

- Estimation of traffic growth over time for;
 - Network traffic; and
 - Development traffic;
- Estimation of traffic flows on the adjacent links and at key links and junctions within the affected area for:
 - Base year, i.e first year of full operations; and
 - Base year plus 10 years; or
 - Year of completion of infrastructure plus 15 years, if a new modified highway infrastructure is required;
- Inclusion of committed highway and development proposals that affect local traffic conditions; and
- Possible requirement for additional separate assessment for specific phasing proposals and or construction traffic impacts.

References

- Relevant Local District Plan
- NZ Land Transport Strategy
- Regional Land Transport Strategy
- Long Term Council Community Plan (LTCCP)
- Corridor Management Plans
- Site specific traffic modelling (as required)

8. Highway Impact

- Indication of the proposed site access layout;
- Justification of the design;
- Traffic assessment on other key links and junctions within the affected area;
- Identification of reserve capacity and queue lengths, where appropriate;
- Identification of alternative designs for key links and junctions within the affected area which may be necessitated by the increased traffic movements;
- Identification of any departure from design standard; and
- Safety assessment of all designs

References

- Land Transport Safety Authority (LTSA) Traffic Notes
- LTSA RTS
- LTSA RSS
- LTSA Road Safety Reports (by Region, District, State Highway)
- Relevant Local District Plan
- Transit NZ Standards and Guidelines Manual
- Transit NZ Policy and Planning Manual
- LTSA Standards and Guidelines List (From SMS Development Manual)
- Austroads Guide to Traffic Engineering Practice - Part 1, Traffic Flow
- Austroads Guide to Traffic Engineering Practice - Part 2, Roadway Capacity
- Austroads Guide to Traffic Engineering Practice - Part 3, Traffic Studies
- Austroads Guide to Traffic Engineering Practice - Part 5, Intersections at Grade
- Austroads Guide to Traffic Engineering Practice - Part 6, Roundabouts
- Austroads Guide to Traffic Engineering Practice - Part 7, Traffic Signals
- Austroads Guide to Traffic Engineering Practice - Part 8, Traffic Control Devices
- Austroads Guide to Traffic Engineering Practice - Part 9, Arterial Road traffic Management
- Austroads Guide to Traffic Engineering Practice - Part 10, Local Area Traffic Management
- Austroads Guide to Traffic Engineering Practice - Part 12, Roadway Lighting
- Transit NZ Manual of Traffic Signs and Markings (MOTSAM) Parts 1, 2, and 3
- Transfund Road Safety Audit Procedures

9. Environmental Impacts

- Identification of the environment impact arising from the traffic consideration of the proposed development;
- Special consideration required for sensitive and residential areas; and
- Consideration of measures that might be appropriate to mitigate against any environmental disadvantage.

References

- Resource Management Act
- Relevant Local District Plan
- Local Regional Council Requirements

10. Road Safety

- Examination of historical data for accident factors, trends and groups, for example, regular occurrence of one type of accident or involvement of one type of road-user; and
- Preparation of a safety audit on any proposed change to the highway layout.

References

- RTA Guide to Traffic Engineering Developments
- Land Transport Safety Authority (LTSA) Traffic Notes
- LTSA RTS
- LTSA RSS
- LTSA Road Safety Reports (by Region, District, State Highway)
- LTSA Crash Listings and CAS Database
- Transit NZ Standards and Guidelines Manual
- LTSA Standards and Guidelines List (From SMS Development Manual)
- Austroads Guide to Traffic Engineering Practice - Part 4, Road Crashes
- Austroads Guide to Traffic Engineering Practice - Part 15, Motorcycle Safety
- Transit NZ Manual of Traffic Signs and Markings (MOTSAM) Parts 1, 2, and 3
- Transfund Road Safety Audit Procedures

11. Internal Layout

- Definition of internal road and circulatory layout, with dimensions and plan;
- Consideration of services and emergency vehicle routes;
- Definition of aisle widths, road marking, traffic safety, visibility, etc, and
- Consideration of vehicle speed control measures.

References

- RTA Guide to Traffic Engineering Developments
- Relevant Local District Plan
- Parking and Traffic Generation Survey Results (Site Specific)
- Transit NZ Standards and Guidelines Manual (e.g. SHGDG)
- Austroads Guide to Traffic Engineering Practice - Part 10, Local Area Traffic Management
- Austroads Guide to Traffic Engineering Practice - Part 11, Parking
- Transit NZ Manual of Traffic Signs and Markings (MOTSAM) Parts 1, 2, and 3
- AutoTURN/TRACK analysis

12. Parking Provision

- Determination of level of provision and justification;
- Consideration of essential operational, visitor, disabled spaces;
- Specification of bay and aisle dimensions and location of spaces;
- Verification that vehicles can access each space with adequate turning provisions; and
- Determination of service area requirements.

References

- Transfund Trips and Parking Related to Land Use – Report No. 209 and 210
- RTA Guide to Traffic Engineering Developments
- Relevant Local District Plan
- Ministry of Transport (MOT) Parking Standard
- Parking and Traffic Generation Survey Results (site specific)
- Austroads Guide to Traffic Engineering Practice - Part 10, Local Area Traffic Management
- Austroads Guide to Traffic Engineering Practice - Part 11, Parking
- Transit NZ Manual of Traffic Signs and Markings (MOTSAM) Parts 1, 2, and 3

13. Public Transport

- Indication of intended public transport provision;
- Determination of siting of bus stops, routes, etc; and
- Determination of access to bus/rail facilities.

References

- Austroads Guide to Traffic Engineering Practice - Part 13, Pedestrians
- Relevant Local District Plan
- Transit NZ Manual of Traffic Signs and Markings (MOTSAM) Parts 1, 2, and 3

14. Pedestrian/Cyclists/People with Disabilities

- Indication of specific provisions
- Indication of safety and security provisions; and
- Indication of facilities for disabled.

References

- Transfund Trips and Parking Related to Land Use – Report No. 209 and 210
- RTA Guide to Traffic Engineering Developments
- Austroads Guide to Traffic Engineering Practice - Part 13, Pedestrians
- Austroads Guide to Traffic Engineering Practice - Part 14, Bicycles
- Relevant Local District Plan
- Transit NZ Manual of Traffic Signs and Markings (MOTSAM) Parts 1, 2, and 3

SEEKING WRITTEN APPROVAL FROM ROAD CONTROLLING AUTHORITY FOR YOUR DEVELOPMENT PROPOSAL

If you are considering a development project near a road you must discuss your proposal with the Road Controlling Authority, and in many cases obtain written approval.

Who is the Road Controlling Authority?

The Road Controlling Authority may be the Local Authority, in this instance Wanganui District Council, or in the case of State Highway, New Zealand Transport Agency.

Where a State Highway is affected then the applicant will be required to submit their proposal to New Zealand Transport Agency for approval.

THE ROLE OF THE RCA

WHAT THE RCA CONSIDERS WHEN ASSESSING PROPOSALS

RCA assessment of a proposal includes but is not limited to the following factors:

- Traffic generated from the proposal and the effect this will have on the operation of the road;
- Development pressure in the area and any adverse cumulative effects that may arise from the proposal;
- Sight distances from any subject crossing place associated with the proposal;
- The proposed use of the crossing (e.g. heavy vehicles, farm use, residential use)
- The condition of the crossing place;
- The surrounding environment and landuse and how the proposal relates to this;
- Whether all alternatives for access have been considered (e.g. could a side road be used for access or could an accessway be shared with a neighbouring site?);
- Whether any advertising signage may unnecessarily distract drivers;
- Whether landscaping will compromise visibility to and from intersections and accesses;
- The potential for future complaints with respect to nuisance effects from the road traffic; and
- The overall effect of the proposal on the sustainability of the road network;

Each RCA will provide guidance and schedules for assessing applications.

THE PROCESS

HELP WITH THE APPLICATION PROCESS

It is generally advisable to employ a suitably qualified consultant to manage your proposal. Depending on the nature of your proposal this person may be a planner, surveyor, traffic engineer, acoustics engineer, and/or lawyer. In some cases more than one professional may be required.

At any time throughout the process the Council are available to assist.

APPLICATION FORM

“Road” may refer to local road or state highway.

Similar information may be required by New Zealand Transport Agency if a state highway is affected.

SECTION ONE: CONTACT DETAILS

Return address:

Wanganui District Council
PO Box 637
Wanganui

Attention: Resource Planning Section

Date:

Your name:

Applicants name:

Postal Address:

Home Phone No:

Business Phone No:

Cell Phone No:

Fax No:

E-Mail:

HAVE YOU INCLUDED THE FOLLOWING WITH YOUR APPLICATION:

Plan of the existing site and access arrangements

Scheme Plan showing the proposal and proposed access arrangements

Certificate of Title

Resource Consent Application (if applicable)

Assessment of Environmental Effects (if applicable)

Any Traffic Effect Assessment* or other specialist report (if required)

A request for New Zealand Transport Agency to provide its
written approval to the application in accordance with Section 94 of the
Resource Management Act 1991 and/or Section 176(1)(B) of the
Resource Management Act 1991 if a state highway is affected.

* See WDC document Traffic Effect Assessment – A Guide to Preparation, which outlines requirements for producing a Traffic Effect Assessment report.

SECTION TWO: PLANNING INFORMATION

Is your proposal for:

Land use Subdivision Other (please state)

Location of site:

Road: Locality (nearest settlement):

Legal Details

Legal Description of site (please attach a copy of the certificate of title):

Please provide details of any cross lease situation/ licenses to cross railway lines, etc.

Size of the site:

Please provide a description of the existing development and any significant landscape features on the site (e.g. streams, areas of native bush, heritage buildings, culturally significant sites)

Description of Proposal – *Please describe what you are proposing to do.*

Reason for the application – *Please state the reasons you are submitting this proposal including details of any additional development planned for the future (e.g. initial application to subdivide the site with an intention to construct one dwelling on the new lot at some stage in the future).*

Activity classification and zoning under relevant planning documents
(For assistance with this please contact your Council)

Have you lodged a Resource Consent application with Council? *(If so, please state the Council reference and what stage this consent is at – only required for TNZ applications)*

Have you made any previous applications to the RCA in relation to this site or any neighbouring sites that you own? *(If so, please give relevant details including the proposal, outcome and date)*

SECTION THREE – ACCESS

How does the site *currently* gain access to the Road? *(Please include crossing place numbers if applicable)*

Does the site *currently* share any access(es) with other properties? *(If yes please give details of the number of properties the crossing is shared with and details of any relevant right of way easements)*

What is the *current* use of access(es) to the site (e.g. farm use, heavy vehicles, residential use, etc)?

How many vehicle movements per day (in and out) are *currently* generated from the site?

As a user of the crossing; are there any safety concerns relating to the access?

How do you *propose* to gain access to the site as a result of your proposal?
(Please state the reasons why you have chosen this access arrangement, and whether any form of restricted access is proposed, such as gates.)

Are there any side roads that could be used to gain access for your proposal?
(If yes, please name)

Could access be shared with a neighbouring lot?

What type and number of vehicle movements per day (in and out) will be generated as a result of the proposal?

SECTION FOUR – SUBDIVISION DETAILS (for subdivision only – please go to Section Five if you are making a land use application)

Number of proposed lots:

Size of proposed lots:

Intended use of proposed lots (e.g. – farming, lifestyle, residential, commercial [if commercial or industrial please give further details in Section Five]):

Are any buildings proposed for the new lots? (If so, please give details)

Are there any proposed buildings for each of the new lots? (If yes, please give details)

Will any areas of land be retired or covenanted as a result of the subdivision? (If yes, please give details. E.g. creation of a reserve)

SECTION FIVE – LAND USE DETAILS

What is the existing land use of the site?

What is the general land use in the vicinity?

Is this application for a commercial or industrial development? *(If yes please provide details of peak traffic hours, opening hours, nature and size of the business and origin of traffic)*

How will on site manoeuvring and car parking be accommodated for?

What mitigation is offered to address any nuisance effects from the Road on the proposed activity?

SECTION SIX – SIGNAGE AND LANDSCAPING

Are there currently any signs on the site? *(If yes, please give details)*

Is any signage proposed in conjunction with this proposal? *(If yes, please give details of size, location, content, size of lettering and whether these the sign(s) will be illuminated)*

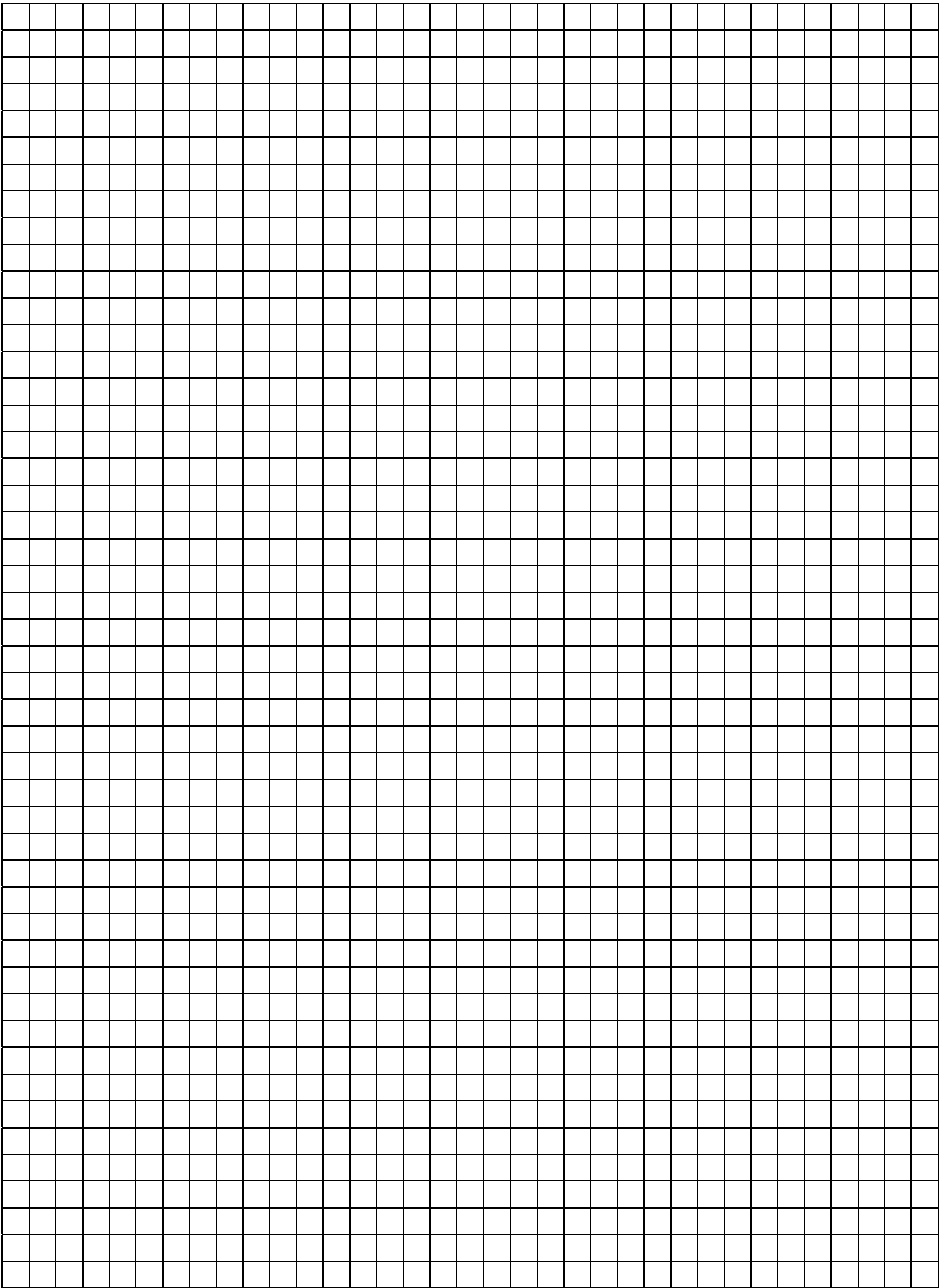
Is there currently any landscaping on the site? *(If yes, please give details)*

Is any landscaping proposed in conjunction with this proposal? *(If yes, please give details of species of plant, size, location, and any other landscaping features)*

SECTION SEVEN – OTHER DETAILS

Is there any construction traffic associated with your proposal? *(If yes, please give details of the type of vehicles, number of vehicle movements involved [in and out], direction of travel on the Road, materials involved and length of time for the construction)*

Please include any comments you may have in relation to this proposal



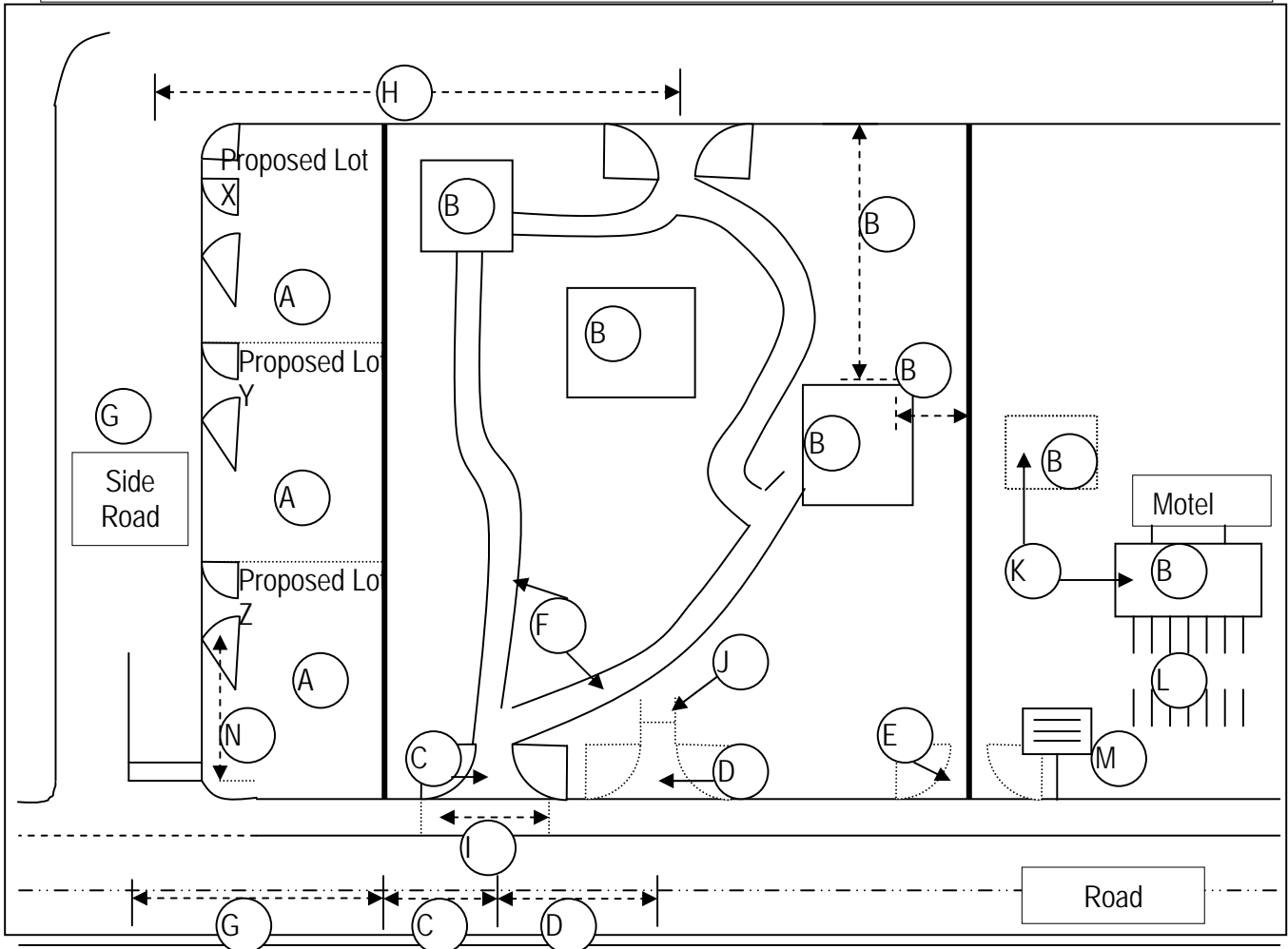
DETAILED DRAWING OF PROPOSAL

PLEASE INCLUDE A DETAILED DRAWING OF YOUR PROPOSAL.
 THE FOLLOWING INFORMATION IS THE MINIMUM REQUIREMENT.

Transit requires a detailed drawing of your proposal. If you do not have a site plan of your subdivision or landuse activity please provide a sketch of the proposal. Please note that if insufficient information is provided this may result in your application being returned with a request to provide additional information. The drawing given below is an example to indicate the type of information that we require. A grid sheet is attached for your use. Your sketch should include the following points:

- A. Size and shape of existing and proposed lots (if any).
- B. Location and orientation and **use** of **all** existing and proposed buildings and structures.
- C. Location of **all** EXISTING accessways and gates including distances to existing and proposed boundaries adjacent to the State Highway.
- D. Location of **all** PROPOSED accessways and gates including distances to existing and proposed boundaries adjacent to the Road.
- E. Location of any shared access arrangements (ROW's, access lots, dual accessways etc).
- F. All internal roading.
- G. Location of side roads (if any).
- H. Location of all existing and proposed accessways on side roads (if any).
- I. Width of all existing and proposed accessways where they meet the Road.
- J. Width of all existing and proposed accessways at the fenceline.
- K. Gross floor area in m² of all existing and proposed buildings.
- L. Location and number of all parking spaces (if any) and manoeuvring areas.
- M. Location, size, and distance to boundary of all signage (existing and proposed).
- N. Distance of all accessways along side road(s) from intersection(s).

Please note that this diagram is an example only.



Appendix G: Approved Materials

Approved materials for:

1. Stormwater and Wastewater
See NZS4404, page 101, Table 4.2, and Modifications in Part 4 of Supplement Document.
2. Water Supply
See attached list.

WDC APPROVED MATERIALS LIST – TABLE 4.2

Pipe Materials	Applicable Manufacturing Standards	Stormwater	Wastewater	Water Supply	Comments
VC (Vitrified Clay pipes and fittings)	AS/ 1741:1991	√	√		Has benefits for particularly aggressive wastes or ground conditions.
PVC – U (Unplasticised Poly Vinyl Chloride pipes and fittings) Class SN4 to 16 as required by TA	AS/NZS 1260:2009		√		For wastewater gravity pipes.
PVC – U (Unplasticised Poly Vinyl Chloride and fittings) Class SN4 to 16 as required by TA	AS/NZS 1254:2010	√			For stormwater gravity pipes.
PE (Poly Ethylene Pipes and fittings)	AS/NZS 4130:2009 AS/NZS 5065:2005	√	√	√	Note AS/NZS 4130 – for pressure applications and fittings. Note AS/NZS 5065– For gravity drainage and sewage applications and fittings.
PVC (pressure pipe and fittings)	AS/NZS 1477:2006		√		PVC pipes and fittings for pressure applications. Wastewater applications only.
PVC-M (Poly Vinyl Chloride Pipe)	AS/NZS 4765:2007		√	√	For pressure applications
PVC – O (Poly Vinyl Chloride Oriented Pipe)	AS/NZS 4441:2008			√	For pressure applications, generally water applications only.
GRP (Glass Reinforced Plastic Pipe)	AS 3571	√	√		Lightweight. Resists many aggressive wastes in wastewater applications.
RRJ reinforced concrete pipes and Concrete Manhole Risers and lids	AS/NZS 4058:2007	√	√ (Large Pipe)	√	Principally used for pipe sizes 300mm or larger. Sometimes used for waste water pressure lines but subject to hydrogen sulphide attack.
RCP pipe (Roller Compacted Pipe)	AS/NZS 4058:2007	√	√		Approved for use of RCP pipes that can individually be verified to have passed the factory hydrostatic test.
Stormboss Pipe (and fittings)	AS/NZS 5065:2005	√			Limited to stormwater applications only. Prior approval required from the TA.
Nexus Pipe	AS 2439.1 & NZTA F2/1998	√			Punched & Non Punched pipe available
Spiral welded steel (Including CLS)	NZS 4442:1988	√	√	√	Internal linings included concrete, epoxy, bitumen and galvanizing. Principal mains only.
Ductile iron pipe (and fittings)	AS/NZS 2280:2004	√	√	√	Generally suspended pipes and high structural loadings.
Corrugated steel pipe	AS/NZS 2041:1998 NZS 4405 NZS 4406	√			Not acceptable to some TA's. Generally of short length (culverts etc). Joints need consideration in fine soils with high water tables. Invert may need lining. Stormwater applications only.
Grey Iron	AS/NZS 2544:1982		√	√	Generally special fittings pump stations etc.
ABS (Acrylonitrile-Butadiene Styrene High Pressure Pipe)	AS/NZS 3518:2004		√	√	Generally limited to pump stations, manifolds etc.
EW Manhole Channel Forms (U Shaped channel)	BS EN295-4:1995	√	√		All manhole channels shall be formed using Earthen Ware type preformed channels.
Access Covers & grates	AS 3996: 2006	√	√	√	All ironware to comply with the standard. (MH Covers to be Hygrade 500HD. Sealed down lids to be Saint Gabain Korum.)
Other Drainage Produces		√	√	√	With approval of the TA Engineer

This approved materials list covers acceptable materials and fittings for use within the TA district, and covers the products which the TA has, or will assume responsibility for.

Products which are not in accordance with this list will be rejected, unless written approval is given prior to installation by the TA Engineer. Rejected products will be subject to removal at the subdividers cost.

All of the materials supplied by the subdivider shall be the best of their respective kinds and conform to the appropriate New Zealand, Australian or British Standard and or Specifications as specified hereafter. All materials and fittings shall be free from flaws and defects, and shall be subject to such tests as the TA Engineer may impose.

Unless otherwise specified the standards and specifications (and latest amendments) shall apply to the various materials and fittings installed.

The TA reserves the right to refuse any material or fitting from the Acceptable Materials list for any reason and at any time. In these circumstances the TA will provide written notification, stating the reasons why the material is not fit for purpose.

WDC APPROVED MATERIALS FOR WATER

Fittings	Approved Type, Brand Name or Manufacturer
<p>Universal (Gibault) Joints/Couplings (cast coated in accordance with AS/NZS 4158 and amendments) All bolts shall be Stainless Steel grade 316 with factory applied molybond coating and complying with AS/NZS 1252</p>	<p>AVK Tyco Viking Johnson</p>
<p>Mechanical Tapping Bands (standards Australia MP 52-2001, chapter six, section 6.25) Note: Aluminium and Universal tapping bands with u bolt support straps shall not be used All tapping bands on PVC shall be gunmetal DR LG2 - fully enclosed All tapping bands on MDPE shall be plassim – fully enclosed All bolts shall be Stainless Steel grade 316 with factory applied molybond coating and complying with AS/NZS 1252</p>	<p>Crevet Taptite Milnes Pty Ltd Plassim</p>
<p>Medium Density Poly Ethylene pipe – MDPE Fittings All MDPE pipe shall be joined using compression fittings</p>	<p>Plasson /Iplex Philmac / Marley Pushlok / Marley Easygrip</p>
Valves and Fire Hydrants	Approved Type, Brand Name or Manufacturer
<p>Sluice Valves (manufactured to AS/NZS 2638:2, coatings to comply with AS/NZS 4158 and amendments, flanges to be drilled to AS 4087) 15mm diameter and larger. Resilient seated, nylon coated, minimum class PN 16, open clockwise with a non-rising stainless steel spindle, coated internally and externally with Fusion-bonded Epoxy to 200u or Nylon Rilsan 11, coloured blue Valves shall be flanged (table D) when laid in conjunction with other ductile fittings. All valves 100mm or larger shall be strapped to a concrete anchor block ≈ Surface boxes shall be cast iron fully coated with Fusion-bonded Epoxy to 200u or Nylon Rilsan 11, coloured blue. Concrete base blocks shall be approved by the Engineer. They are to be accurately centred over the main and the lids are to conform to the finished ground surface. The "V" in SV lid is to point in the direction of pipe that the valve controls</p>	<p>AVK Series 55 and 57 Gillies SF Series Tyco figure 500 Series Hawle 4060E2/4500EAS Series/HAWLE A Series ≈ Technicast Surecast</p>
<p>Fire Hydrants (manufactured to NZS/BS 750, coatings to comply with AS/NZS 4158 and amendments, polyurethane cup washer to NZS/BS 750) Resilient seated, nylon coated tall pattern screw down standard, minimum class PN 16, with approved polyurethane cup washer, pure PTFE gland packing or "O" ring sealing system. Coated internally and externally with Fusion-bonded Epoxy to 200u or Nylon Rilsan 11, coloured blue ≈ Risers and tee's are to be ductile iron coated with Fusion-bonded Epoxy to 200u or Nylon Rilsan 11, coloured blue. ≈ Surface boxes shall be cast iron fully coated with Fusion-bonded Epoxy to 200u or Nylon Rilsan 11, coloured yellow. Concrete base blocks shall be approved by the Engineer. They are to be accurately centred over the main and the lids are to conform to the finished ground surface.</p>	<p>AVK Series 29 Hydrant Tyco F502 Series Gillies Humes Torq-loc ≈ Humes AVK Tyco Gillies ≈ Technicast Surecast</p>
<p>Gate Valves (manufactured to NZS/AS 1628 Gunmetal to BS 5154) 15mm, 20mm, 25mm, 40mm and 50mm Diameter Dezincification resistant materials or LG2 gunmetal with malleable (cast) iron T bar handles, minimum class PN 16</p>	<p>Kitz Fig AS-H (with handle retaining nut changed to DR type) Tour Anderson Series 64MT DZR brass gate valve Maxiflo A59m JY gate valve</p>
<p>Combination Valves 2 or 3 way valves ≈ Combi bases, risers 1050mm Diameter, Depth 450, 600mm or to suit. ≈ Combi frame and lid – cast iron fully coated with fusion bonded Epoxy to 200u or nylon risan 11, coloured blue.</p>	<p>Hygrade ≈ Humes ≈ Humes</p>
<p>Isolation valves Note: Suitable for Suitable for rider mains only Threaded Male, PE push fit (must include nose cone), Resilient seated, nylon coated, non-rising stainless steel spindle, coated internally and externally with Fusion-bonded Epoxy to 200u or Nylon Rilsan 11, coloured blue</p>	<p>Humes SSV 10</p>

Tobies and Fire Hydrants	Approved Type, Brand Name or Manufacturer
<p style="text-align: center;">Domestic Tobies (manufactured to AS 1460*)</p> <p style="text-align: center;">≈</p> <p>Toby boxes shall be a black high density polyethylene (HDPE) surface box, with base plate, and with a blue lid marked 'water'.</p> <p style="text-align: center;">≈</p> <p>Risers shall be 150mm Diameter PVC stormwater pipe by 260mm long.</p>	<p>Plasson Compression Stopcock.</p> <p style="text-align: center;">≈</p> <p>Acuflo Industries Ltd Hygrade Products Ld Draper Enterprises Ltd</p> <p style="text-align: center;">≈</p>
Miscellaneous	Approved Type, Brand Name or Manufacturer
<p style="text-align: center;">Standard Water Meter (Supplied by the Principal)</p> <p>Note: Device shall conform to Water NZ Water Meter Code of Practice 2003 15 – 40mm Diameter Fan Jet / Class C</p>	<p>Socam</p>
<p style="text-align: center;">Combo Water Meter (Supplied by the Principal)</p> <p>Note: Device shall conform to Water NZ Water Meter Code of Practice 2003 50 – 150mm Diameter Combination (meter and Backflow)</p>	<p>Meinecke Metwin / Sensus</p>
<p style="text-align: center;">Fire Meter</p> <p>Note: Device shall conform to Water NZ Water Meter Code of Practice 2003 Shall be used on dedicated fire sprinkler mains</p>	<p>Metwin / Sensus</p>
<p style="text-align: center;">Backflow Preventer (Supplied by the Principal)</p> <p>(Shall comply with AS/NZS 2845.1 and the ASSE standards).</p> <p>Note: Type to be installed shall comply with the Levels of Risk table as defined in the Building Code G12. The device shall comply with the Water NZ Backflow Prevention for Drinking Water Suppliers Code of Practice.</p> <p style="text-align: center;">Non testable dual check valve – Low risk</p> <p style="text-align: center;">≈</p> <p style="text-align: center;">Testable double check valves – Medium risk</p> <p style="text-align: center;">≈</p> <p style="text-align: center;">Testable Reduced Pressure Zone Device (RPZ) – High risk</p>	<p>Wilkins</p>
<p style="text-align: center;">Repair Straps</p> <p>Straps should be used with 316 stainless steel bolt sets. Mild steel minimum dimensions 60mm wide x 6mm thick</p>	
<p style="text-align: center;">Pipe Wrapping 50 – 100 mm Petroleum based</p>	<p>Polyken Petrotech</p>
<p style="text-align: center;">Thread Tape</p> <p>Note: To be used when joining PVC or MDPE to metal fittings</p>	<p>Ceelon (red only)</p>
<p style="text-align: center;">Hemp (with manufacturers specified grease) Shall be used for all metal to metal fittings.</p>	<p>Good quality, standard plumbers Hemp</p>
<p style="text-align: center;">Conduit trace Wire 1.5mm Copper sheathed in PVC Installed with all non-metallic pipe (including mains, riders and connections).</p> <p style="text-align: center;">Gaskets 32mm thick diameter to suit flanges Nylon Reinforced Insertion Rubber</p> <p style="text-align: center;">Bolt Sets 316 stainless steel All new replacement bolt sets are to include bolt, nut, flat washers and one spring washer. 'ROCL' grease is to be used will all bolt installations.</p> <p style="text-align: center;">Security Cage Lockable galvanised steel cage fixed onto a Concrete pad</p> <p style="text-align: center;">Valve Packing (for existing valves) PTFE 210kg/tm2 (20,594 KPa) Chesterton, Style 1724 Super –Lon To be installed as per Chesterton's recommended packing procedure.</p> <p style="text-align: center;">Other Water Products</p>	<p>Installed with all non-metallic pipe (including mains, riders and connections)</p> <p>With Approval of TA Engineer</p>

Appendix H: Supporting Materials

- Basic Guidelines for Sizing a Water Connection

BASIC GUIDELINES FOR SIZING A WATER CONNECTION

These Guidelines for sizing of water connections, meters and backflow requirements are any applicable to the Urban Reticulation (including Castlecliff Main), but not City Bulk Supply or Rural Schemes. (Refer to 'Water Connections & Current Charges' for current water charging costs).

Connection Type	Specific Design Required (If 'Yes' refer to Water Engineering Office)	Sizing	Metering (NB = Nominal bore)	Backflow Prevention
Domestic Standard (Urban)	Up to two units – No More than two units – Yes	All except Domestic are approved after the purpose/requirements of the connection are supplied to Council by the applicant As per Urban Water Connection Sizing table	Yes if connection is 25mm NB or greater	Unlikely
Commercial (Urban) e.g. hairdressers, dry-cleaners	Yes	Dependant on purpose e.g. domestic, fire hose, sprinklers, etc	Yes if connection is 25mm NB or greater and is usage more than 350m ³ /year	Dependant on Risk Category Refer to Backflow Risk Categories table
Industrial (Urban) e.g. Pacific Park, Tasman Tanning, etc	Yes	Dependant on purpose e.g. domestic, fire hose, sprinklers, etc	Yes	Dependant on Risk Category Refer to Backflow Risk Categories table
Horticultural (Urban & Rural)	Yes	Dependant on requirements e.g. m ³ /day, with minimum of 24hr on-site storage	Yes if connection is 20mm NB or greater	Dependant on Risk Category Refer to Backflow Risk Categories table
Fire Connections (for City Sprinkler Systems)	Yes May require on-site storage or Pressure Sustaining valve if boost pumping is required to increase pressure supplied from City reticulation	Dependant on requirements i.e. litres/minute @ 'x' kPa, after comments by Wanganui Water Services, after flow test results by Sprinkler Designers	Yes if connection is 20mm NB or greater Provided in conjunction with upgrading of existing if not a new connection	Dependant on Risk Category Refer to Backflow Risk Categories table
Other Non-specific Applications	Yes	Dependant on specific design	Dependant on specific design	Dependant on Risk Category Refer to Backflow Risk Categories table

ORIGINAL INFO

URBAN WATER CONNECTION SIZING CRITERIA	Less than 10m elevation from water main	More than 10m elevation from water main
Less than 65m from water main	1 unit = 15mm 2 units = 20mm	1 unit = 20mm 2 units = 25mm
More than 65m from water main	1 unit = 20mm 2 units = 25mm	1 unit = 25mm 2 units = 25mm
NOTE: Connections for properties with more than 2 units require specific design; refer to Water Engineering office.		

REVISED INFO

URBAN WATER CONNECTION SIZING CRITERIA for up to 2 units*	Less than 10m elevation from water main	More than 10m elevation from water main
Less than 65m from water main	20mm	25mm
More than 65m from water main	25mm	25mm
* Note: Connections for properties with more than 2 units require specific design; refer to Water Engineering office.		

Appendix I: Technical Specifications

Appendix J: Schedule 1D As-Built Plans and Documents

Schedule 1D

As-Builts Drawings

Information given on as-built drawings, submitted electronically in PDF format at a scale of 1:500, shall include but shall not be limited to the following and is required on disc prior to the issue off the Section 224 Certificate.

(a) General:

- Separate PDF files are required for each Infrastructure service. One .DXF file with layers for each Infrastructure service contained in it will be sufficient. The format of the .DXF file must be identified when submitting (Exact Projection eg, Wanganui Circuit)

- (b) The co-ordinates of at least two points on each Plan in terms of an appropriate geodetic or cadastral datum and the origin of the plan level datum. Refer Supplement Document clause 1.5.2.2

The format of the .DXF file which has been submitted must be identified when submitting.

(c) Roothing Plan:

- | | |
|--|--|
| <input type="checkbox"/> Location | <input type="checkbox"/> Details of road marking |
| <input type="checkbox"/> Signs | <input type="checkbox"/> Amenities features, eg: seats |
| <input type="checkbox"/> Street Lights | <input type="checkbox"/> Centreline distances |
| <input type="checkbox"/> Road Names (as approved by Council) | <input type="checkbox"/> Sumps (Type/Lid Level/Co-ords) |
| | <input type="checkbox"/> Sump Legs (DN Size/Material) |
| | <input type="checkbox"/> Subsoil (DN Size/Material/DofC) |

- (d) Typical Roothing Cross Section Drawing Showing Pavement Layers. Scale 1:100

(e) Roothing Longsection:

(f) Stormwater Reticulation Drawing:

- | | |
|---|---|
| <input type="checkbox"/> Co-ordinated positions of manholes | <input type="checkbox"/> Manhole inverts and lid levels |
| <input type="checkbox"/> Inverts of pipes | |
| <input type="checkbox"/> Position and depth of connections at lot boundaries (LH Bdy/RH Bdy) | |
| <input type="checkbox"/> Positions of connections shall be both co-ordinated and referenced to adjacent manhole lids and lot boundary pegs* | |
| <input type="checkbox"/> Pipe material | <input type="checkbox"/> DN size |
| <input type="checkbox"/> Class rating | <input type="checkbox"/> Joint type |
| <input type="checkbox"/> Pipe Grade as % | |
| <input type="checkbox"/> As a minimum, detention and the secondary flow path route to meet the 1% AEP flood event must be shown | |

(g) Wastewater Reticulation Drawing:

- | | |
|---|--|
| <input type="checkbox"/> Co-ordinated positions of manholes | <input type="checkbox"/> Manhole inverts and lid levels |
| <input type="checkbox"/> Inverts of pipes | <input type="checkbox"/> Measurements to house connections (from MH's) |
| <input type="checkbox"/> Position and depth of connections at lot boundaries | |
| <input type="checkbox"/> Positions of connections shall be both co-ordinated and referenced to adjacent manhole lids and lot boundary pegs* | |
| <input type="checkbox"/> Pipe material | <input type="checkbox"/> DN size |
| <input type="checkbox"/> Class rating | <input type="checkbox"/> Joint type |
| <input type="checkbox"/> Pipe Grade as % | |

(h) Water Reticulation Drawing:

- | | |
|--|-------------------------------------|
| <input type="checkbox"/> Results of pressure test pipes | <input type="checkbox"/> Joint type |
| <input type="checkbox"/> Pipe material, PN rating, joint type, DN size | |
| <input type="checkbox"/> Location of thrust blocks, fire hydrants, valves (FH and V shall be co-ordinated) | |
| <input type="checkbox"/> Distance of water connection (to by) (LH Bdy and RH Bdy) | |
| <input type="checkbox"/> Depth of cover and position of mains (grass or seal) | |

(i) Ducts:

- Position and diameter, cover and utility type for ducts installed for utilities

Schedule 1D

Post Construction Information

Post construction information is required in full prior to issue of the Section 224 Certificate but may be provided progressively as works are completed and tested.

(a) Road Information – General:

- Source of aggregates
- Pavement design including subgrade test results (compaction and CBR) and pavement depth
- Grading and sand equivalent of basecourse
- Compaction of basecourse (as required by NZS 4404 and TNZ B/2)
- Benkelman Beam test results on finished basecourse (s. 3.4.11 of NZS 4404)
- Source of pavement and surfacing materials

(b) Road Surfacing Information – For Sealed Roads:

- Binder type and application rate
- Adhesion agent type and quantity
- Chip size
- Width, length and area of each street sealed
- Discussion on any reasons for differences between design and applied rate
- Mix design for asphaltic concrete
- Density tests and air voids content for asphaltic concrete
- Asphalt details including mixture and thickness
- Interface details between asphalt surfacing and basecourse
(*ie: tack coat or full chip seal, etc*)
- Cutter type and quantity
- Type and quantity of other additives
- Design basis for binder application rate
- Source of aggregates

(c) Stormwater Reticulation Information:

- Results of pressure test of pipes
- Test results of backfill for all lines including bedding
- CCTV inspection records of all stormwater pipelines (flush lines first)
- WDC MH inventory data sheets

(d) Wastewater Reticulation Datasheets:

- Results of pressure test of pipes
- Test results of backfill for all lines including bedding
- CCTV inspection records of all wastewater pipelines (flush lines first)
- WDC MH inventory datasheets

(e) Water Reticulation Information:

- Results of pressure testing of pipelines
- Test results of backfilling for all lines including backfill
- CCTV inspection of all large water pipelines at Engineers discretion (flush lines first)

(f) Geotechnical Completion Report:

- Bulk fill test results (TNZ F/1)
- Test results for residential (building platform) fills (NZS 4431)
- Statement of suitability (Schedule 2A NZS 4404)
- As-built surface contour drawing inclusive of all areas of undisturbed and cut/fill ground to indicate the finished ground and any deviation from approved design plan, also delineating zone areas of low density



Manhole Inventory Form

Manhole Asset ID

Effluent Type: Stormwater
 Wastewater

Address:

Construction Date (if new) or Inspection Date:
 (C) (I)

Contractor:

Location Details

Berm Private Property
 Carriageway Reserve

Fixing Details

Cover Level	Depth (m)	Invert Level	Easting (X)	Northing (Y)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Diagram: Show inverts, direction and sizes (include MH diameter in mm)

North

Structural Details

Manhole Type	Chamber	Cone	Steps	Cover
<input type="checkbox"/> Standard	<input type="checkbox"/> Brick	<input type="checkbox"/> Brick	<input type="checkbox"/> Safety	<input type="checkbox"/> Standard
<input type="checkbox"/> Cross-over	<input type="checkbox"/> Precast Concrete	<input type="checkbox"/> Precast Concrete	<input type="checkbox"/> Non-safety	<input type="checkbox"/> Non-rock
<input type="checkbox"/> Diversion	<input type="checkbox"/> In-situ Concrete	<input type="checkbox"/> In-situ Concrete	<input type="checkbox"/> No Steps	<input type="checkbox"/> Locked
<input type="checkbox"/> Internal Drop	<input type="checkbox"/> Other <input type="text"/>	<input type="checkbox"/> Other <input type="text"/>	<input type="checkbox"/> Steel	<input type="checkbox"/> Sealed
<input type="checkbox"/> External Drop	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Plastic	<input type="checkbox"/> Banded
<input type="checkbox"/> Riser Manhole				<input type="checkbox"/> Caged
<input type="checkbox"/> Rising Main Discharge				If cover is AS/NZS 3996, indicate class(B, C or D) <input type="text"/>

Condition Details

Chamber	Channel/Base	Cone	Steps	Cover
<input type="checkbox"/> Good	<input type="checkbox"/> Good	<input type="checkbox"/> Good	<input type="checkbox"/> Good	<input type="checkbox"/> Good
<input type="checkbox"/> Fair	<input type="checkbox"/> Fair	<input type="checkbox"/> Fair	<input type="checkbox"/> Fair	<input type="checkbox"/> Fair
<input type="checkbox"/> Poor	<input type="checkbox"/> Poor	<input type="checkbox"/> Poor	<input type="checkbox"/> Poor	<input type="checkbox"/> Poor

General Information

Evidence of:	Dewatering:
<input type="checkbox"/> Surcharge	<input type="checkbox"/> Required
<input type="checkbox"/> Infiltration	<input type="checkbox"/> Not required
<input type="checkbox"/> Roots	Indicate severity in comments box
<input type="checkbox"/> Debris / Silt	

Comments

Version No.: UAM - 1.6, Release Date: 2 February 2007

Appendix K: Copy of "Guidance on Use of Producer Statements"

GUIDANCE ON USE OF PRODUCER STATEMENTS

This producer statement has been prepared by a combined task committee consisting of members of the New Zealand Institute of Architects, Institution of Professional Engineers New Zealand, Association of Consulting Engineers New Zealand and the Building Officials Institute of New Zealand.

Four producer statements are available and brief details on the purpose of each are as follows:

- Design:** Intended for use by the person responsible for the design in circumstances where the Territorial Authority will rely on the producer statement to issue a Building Consent.
- Design Review:** Intended for use by a suitably qualified independent design professional where the Territorial Authority does not undertake an internal review and relies on the independent design professional's review to issue the building consent.
- Construction:** Intended for the use by the contractor of the building works where the Territorial Authority requires a producer statement at the completion of construction.
- Construction Review:** Intended for use by the person required by the Building Consent to undertake construction monitoring of the building works in circumstances where the Territorial Authority will rely on the producer statement to issue a Code Compliance Certificate.

The producer statement system is intended to provide territorial authorities with reasonable grounds for the issuing of a Building Consent or Code Compliance Certificate without having to duplicate design or construction checking by others.

The following criteria are recommended to Territorial Authorities with respect to the use of the producer statements.

Definition of Suitably Qualified Design Professional

A suitably qualified design professional should have recognised qualifications and experience for the work undertaken and should be either:

- (i) an active member of the Association of Consulting Engineers of New Zealand (ACENZ) or;
- (ii) a corporate member of the Institution of Professional Engineers of New Zealand (IPENZ) having a current policy of Professional Indemnity Insurance for a sum not less than \$200,000 or;
- (iii) a member of the New Zealand Institute of Architects (NZIA) having a current policy of Professional Indemnity Insurance for a sum of not less than \$200,000.

Design Build Contracts

If the design professional is engaged by the contractor, the territorial authority should satisfy itself that it is appropriate for the territorial authority to rely upon a producer statement from the design professional.

Consulting Services during Construction Phase

There are several levels of service which a design professional may provide during the construction phase of a project. The territorial authority is encouraged to require that the service to be provided by the design professional is appropriate for the project concerned.

Requirement to Provide Producer Statement

Territorial authorities should ensure that the applicant is aware of any circumstances in which there may be a requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the design professional's engagement.

Attached Particulars

Attached particulars referred to in this producer statement refer to supplementary information appended to the producer statement.

Appendix L: Table 3.1 - Road Design Standards – Urban (speed limit \leq 70 km/h)

Table 3.1 – Road design standards – Urban (speed limit ≤ 70 km/h) : Supplement Document changes in bold

Class	Type	Area Served	Traffic Volumes Vpd (1)	Design Speed, (km/h)		Road Reserve Width, m	Minimum carriageway width (m)				Footpath (m)	Berm (m)	Max/min gradient	Normal camber	Max super-elevation	Notes
				Flat or rolling	Hilly		Parking (2)	Traffic	Cycles(3)	Total						
Local roads	Private way	1-3 du ⁽¹⁾	NA	NA	NA	3.8	-	1 x 3.0	-	3.0 ⁽⁴⁾	-	0.5 + 0.3	16% max. 0.4% min.	3%	NA	Not public Street ⁽⁴⁾
	Private way	4-6 du	NA	NA	NA	6.5	-	1 x 5.5	-	5.5 ⁽⁴⁾	-	2 x 0.5	16% max. 0.4% min.	3%	NA	
	Cul de sac	Up to 20 du	NA	NA	NA	11.0	1 x 2.5	1 x 3.5	-	6.0	1.4	0.5 + 3.1	12.5% max. 0.4% min.	3%	6%	No stopping on one side
	Cul de sac	21-50 du	NA	NA	NA	15.5	1 x 2.5	2 x 3	-	8.5	2 x 1.4	2 x 2.1	12.5% max. 0.4% min.	3%	6%	No stopping on one side
	Residential	21-150 du	Up to 750	30	30	18	2 x 2.5	2 x 3.0	-	11.0	2 x 1.4	2 x 2.1	12.5% max. 0.4% min.	3%	6%	(5)
	Industrial	Up to 20 units	>300	30	30	15.5	1 x 2.5	2 x 3.5	-	9.5	2 x 3.0	-	10% max. 0.4% min.	3%	6%	No stopping on one side
	Industrial/ Commercial Service lane	-	NA	NA	NA	8	-	2 x 3.5	-	7.0	-	2 x 0.5	10% max. 0.4% min.	3%	NA	(6)
	Commercial (Park precinct)	-	<2000	30	30	(7)	(7)	2 x 3.5	-	7.0	2 x 3.0	-	10% max. 0.4% min.	3%	NA	(7)
Local distributor roads	Residential	<150 du	200 – 1000	40	40	21.0	2 x 2.5	2 x 3.5	-	12.0	2 x 1.4	2 x 3.1	12.5% max. 0.4% min.	3%	8%	
	Industrial/ Commercial	20 – 40 units	300 – 1000	40	40	18.0	2 x 2.5	2 x 3.5	-	12.0	2 x 3.0	-	10% max. 0.4% min.	3%	6%	(7)
Collector roads	Residential	150 – 450 du	1000 - 3000	50	40	23.0	2 x 2.5	2 x 3.5	2 x 1.0	14.0	2 x 1.4	2 x 3.1	10% max. 0.4% min.	3%	8%	
	Industrial/ Commercial	>40 units	>1000	50	40	20.0	2 x 2.5	2 x 3.5	2 x 1.0	14.0	2 x 3.0	-	10% max. 0.4% min.	3%	6%	(7)
Secondary (District) arterial		>450 du	3000 – 7000	50	50	24	2 x 2.5	2 x 3.5	2 x 1.5	15.0	2 x 1.4	2 x 3.1	10% max. 0.4% min.	3%	8%	
Primary (Regional) arterial		-	>7000	70	60	27	2 x 3.0	2 x 3.5 1 x 2.0	2 x 1.5	18.0	2 x 1.4	2 x 3.1	10% max. 0.4% min.	3%	8%	Painted median occupies 2 m Traffic lane

NOTE –

- (1) du = dwelling units, vpd = vehicles per day
- (2) Parking land width allows for limited cycle space.
- (3) Where the TA gives approval to remove cycle lanes each traffic lane shall be increased to 4.0m.
- (4) Where a private way adjoins a local distributor road or higher, it shall have a 5.5 m traffic width and 6.5 m road reserve width for a minimum of 6.0 m from road boundary.
- (5) Parking bays set into berm footpath zones.
- (6) No parking both sides.
- (7) Width dictated by parking provision. Parking (including angle parking) shall be provided on both sides of street and maximized taking into account traffic considerations.
- (8) Companion Document changes shown in bold
- (9) Urban: All cut and fill batters including retaining structures shall be located outside of the road reserve.
- (10) Rural: All cut and fill batters and side drains shall be incorporated within the legal road reserve.
- (11) Industrial Footpath width may be reduced at Council's discretion.
- (12) Minimum road widths are derived from AS/NZS 2890.1:2004 and apply to straight roads. Refer Table 2.2 AS/NZS 2890.1:2004 for minimum road widths for curved roads.

Appendix M: Pump Station Specification

Not currently available.

APPENDIX N: TESTING SCHEDULE SUMMARY

Summary of testing requirements as specified in Wanganui Land Development and Subdivision Engineering Document (Supplement to NZS 4404: 2004) Appendix I, Technical Specifications.

Testing Requirements	Frequency
<p>Section 2 Earthworks Earth fill density compaction</p> <p>For granular material, test required is density index test</p> <p>For non granular material, test required is air voids & shear vane test.</p>	<p>Large Scale Operations greater than 1,500m², e.g. subdivisions, large lots or road embankments. 1 test per layer per material per 2500m² or 1 test per 500m³ distributed evenly throughout full depth and area or 3 tests per lot.</p> <p>Small scale operations e.g. (Individual residential lots) 1 test per layer per 1000m² or 1 test per 200m³ distributed evenly throughout full depth and area or 1 test per residential lot per layer.</p> <p>Concentrated operations less than 500m², e.g. backfill small farm dams, gullies and similar. 1 test per layer per 500m² or 1 test per 100m³ distributed throughout full depth and area or 3 tests per visit.</p> <p>Confined operations e.g. filling behind structure 1 test per 2 layers per 50m²</p> <p>Trenches 1 field density test per 2 layers per 40 linear metres.</p> <p>For earthworks, the test option to be used is which ever requires the most tests.</p>
<p>Section 3 Trench Excavation Clause 3.2.3</p> <p>Pipe foundation test as approved by the Authorised Representative</p>	<p>1 test per pipe length.</p>
<p>Section 4 Pipe line Construction Drainage.</p> <p>Grading on bedding material</p> <p>Bedding and haunch zone material compaction test.</p>	<p>As requested by the Authorised Representative.</p> <p>At least one test every 10 metres of trench</p>

Testing Requirements	Frequency
<p>Backfill material compaction</p> <p>For Granular Material, test required is Density Index test</p> <p>For Non granular Material, test required is Air voids & Shear Vane test.</p> <p>In berms</p> <p>In carriageways or under footpaths.</p> <p>Pipe Line testing, pressure and Vacuum tests</p>	<p>One test per layer of backfill per 15 metres of trench, with a minimum of two tests. 1 field density test per 2 layers per 40 linear metres.</p> <p>For indirect tests the Scala or Clegg Hammer may be used.</p> <p>One test per layer of backfill per 5 metres of trench, with a minimum of two tests. 1 field density test per 2 layers per 40 linear metres.</p> <p>For indirect tests the Scala or Clegg Hammer may be used.</p> <p>All pipe line lengths</p>
<p>Section 5. Pipeline Construction Water Supply</p> <p>Personnel Public health</p> <p>Hepatitis A</p> <p>Grading on bedding material</p> <p>Backfill compaction, clause 5.14.3</p> <p>In berms</p>	<p>Prior to starting work and retested every 12 months</p> <p>As requested by the Authorised Representative.</p> <p>Trenches</p> <p>One test per layer of backfill per 15 metres of trench, with a minimum of two tests. 1 field density test per 2 layers per 40 linear metres.</p>

Testing Requirements	Frequency
<p>In carriageways and under footpaths.</p> <p>Pipeline testing, pressure and vacuum tests.</p>	<p>One test per layer of backfill per 5 metres of trench, with a minimum of two tests. 1 field density test per 2 layers per 40 linear metres.</p> <p>For indirect tests the Scala or Clegg Hammer may be used.</p> <p>All pipe lines to be tested.</p>
<p>Section 6. Manholes and Sumps</p> <p>Manhole, water testing or inspection test.</p> <p>Backfill compaction tests</p>	<p>Each man hole.</p> <p>Where excavated area is greater than 0.5m² and less than 5m² one test per backfill layer is required.</p>
<p>Section 7 Concrete Work</p> <p>Test certificate for concrete materials</p>	<p>As requested by the Authorised Representative.</p>
<p>Section 8 Pavement Construction</p> <p>Subgrade Shape</p> <p>Subgrade Strength.</p> <p>Field Insitu CBR tests</p> <p>Laboratory soaked CBR tests</p> <p>Benkelmen Beam testing</p> <p>Pavement materials</p> <p>Subbase. Test required, grading, soaked CBR and Sand Equivalent.</p>	<p>Lift pegs installed at a maximum spacing of 20 metres on straights and 10 metres where super-elevation changes.</p> <p>Every 75m, with a minimum of 3, located at each end of the subdivision and midway between ends.</p> <p>Prior to starting the fill operation and on completion a test every 75m along the subgrade.</p> <p>At 10m intervals, in both wheel paths of each lane.</p> <p>One test prior to commencement and then two tests per site or one test per 200m³ of material. One test prior to commencement and then two tests per site or one test per 200m³ of material.</p>

Testing Requirements	Frequency
<p>Basecourse. Tests required, gradin, Sand Equivalent, broken faces. If shellrock is used clay index is required and broken faces not required.</p> <p>Pavement Surface finish.</p> <p>Benkelman Beam testing</p> <p>Surface Shape</p> <p>Pavement materials compaction, MDD testing</p> <p>Surface Roughness</p>	<p>One test prior to commencement and then two tests per site or one test per 200m³ of material. One test prior to commencement and then two tests per site or one test per 200m³ of material.</p> <p>Prior to surfacing, in both wheel paths of each lane at a maximum interval of 10 metres.</p> <p>As for subgrade surface shape.</p> <p>As required by TNZ B/2 Specification.</p> <p>Prior to surfacing, readings at 20 metre intervals and in each lane.</p>
<p>Section 9 Chip Sealing</p> <p>Sealing chip, chip size, shape and cleanliness</p>	<p>One test prior to commencement and then one test per chip size per 800 lineal metres of subdivision..</p>
<p>Section 10. Thin Asphaltic Surfacing.</p> <p>Provide job mix formula</p> <p>Asphalt Concrete</p>	<p>One test prior to commencement.</p> <p>One test to provide evidence of compliance with job mix</p>
<p>Section 11. Kerb & Channel, Footpath and Vehicle Crossings Construction</p> <p>Test certificate for concrete materials</p>	<p>As requested by the Engineer</p>

Appendix O: Alternative Design Procedure

Alternative Design Procedure

The engineering basis for the development of subdivision infrastructure within the District Plan is NZS 4404 2004 and the Wanganui District Council Land Development and Subdivision Engineering Document 2012. This is considered the **minimum** requirements for compliance, and must be viewed in combination with the standards and criteria set down in the District Plan in terms of appropriateness of the applications of these solutions.

There are some circumstances where a developer may wish to depart from the solution as set out in NZS 4404 and the Wanganui District Council Land Development and Subdivision Engineering Document 2012. There are also some circumstances where this may be required or encouraged by the District Plan. This procedure sets out a formalised and logical process for the assessment of the appropriateness and suitability of alternative infrastructure solutions, and helps to avoid ambiguity or ad-hoc processes of non-standard engineering solutions, and reduce the time spent addressing these matters.

The alternative details or specifications needs to be raised with Wanganui District Council (WDC) Infrastructure and Planning staff as early as possible in the design process to ensure a collaborative solution can be reached before the resource consent application is made, and prior to detailed construction plans being submitted for approval.

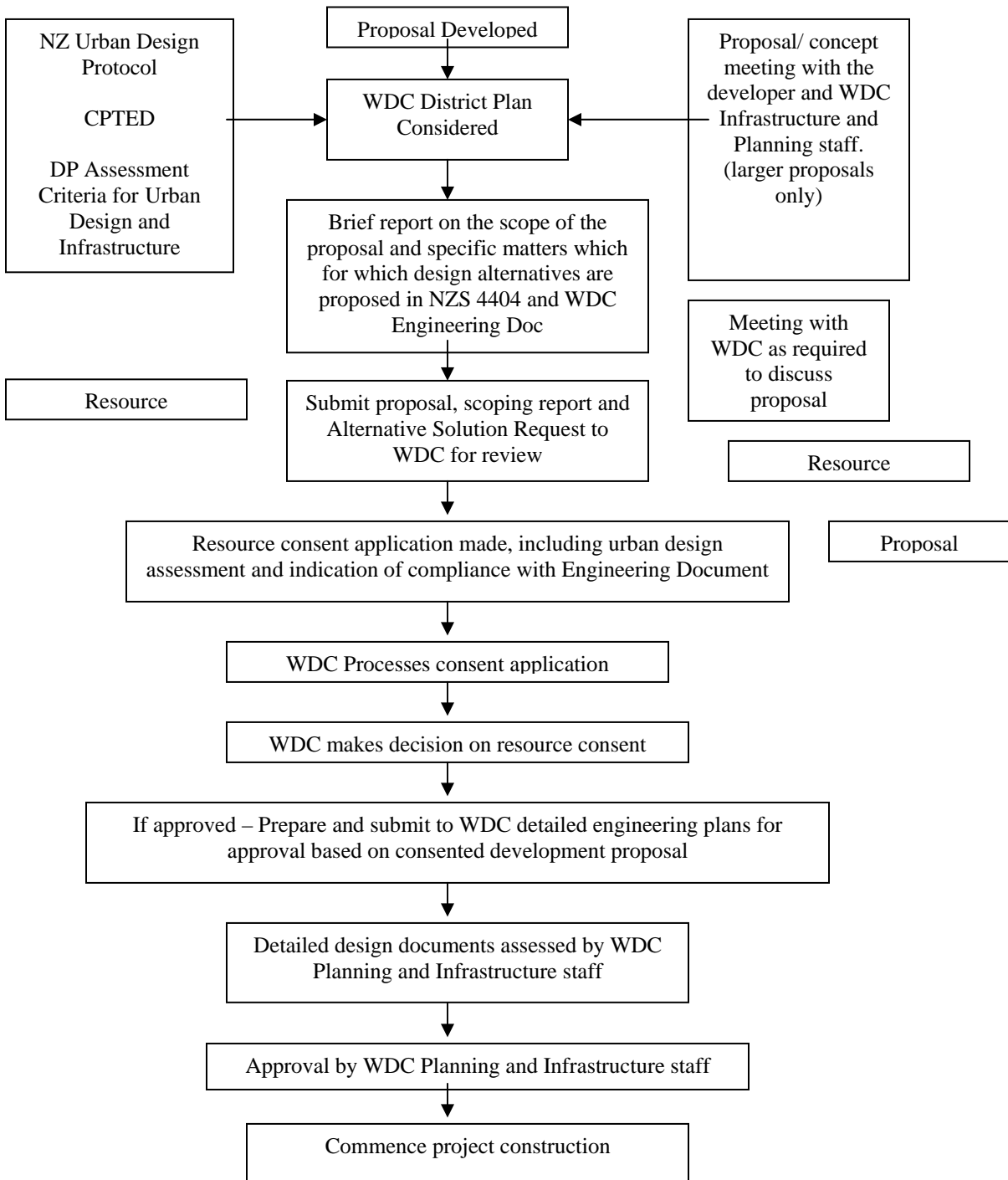
This will involve submitting to Council a scoping report and Alternative Solution Procedure Request forms which will detail the proposed variation or alternative and identify how the alternative solution meets the design criteria in the District Plan and the Wanganui District Council Land Development and Subdivision Engineering Document 2012.

Council staff will consider any alternative solution application and provide a response confirming, rejecting or requesting further information or clarification of aspects. Provided the pre-application process has been successful, all variations from NZS 4404 2004 and the Wanganui District Council Land Development and Subdivision Engineering Document 2012 will be known by WDC, and approval should be a formality.

Ultimately the discretion to accept the alternative solutions lies with the Council, under delegated authority. Council expects consultation at the earliest possible stage where alternative engineering solutions are to be sought. To best achieve these outcomes, the process leading to approval of a development must be collaborative. At the very least it must involve the developer, their professional advisor's, WDC Planning Staff and WDC Infrastructure Staff.

The Specific Variation Request form is attached at the end of this section.

The following flow chart illustrates the process to be followed when preparing and submitting a development proposal:



Design Criteria

A developer may depart from any aspect of NZS 4404 2204 and the Wanganui District Council Land Development and Subdivision Engineering Document 2012, however any departure and the suggested alternative will be assessed against the following design criteria:

1. The Urban Design and infrastructure Assessment Criteria and Policies of the Wanganui District Plan.
2. The following overriding factors:
 - a) The desire to achieve the "Seven C's" of the New Zealand Urban Design Protocol.
 - b) Safe and functional outcomes.
 - c) Sustainability of alternatives.
 - d) Economics of long term maintenance.
3. The criteria tables below.

The following tables identify specific aspects of design. These aspects are some of the key criteria that will be considered when assessing an application for departure from the standards. It must be noted that these may not be the only criteria, by which an assessment is made, however these give some guidance as to the expectations of Council when accepting a variation. Only those departures applied for and approved through the Alternative Design Procedure shall be permitted.

Forms are currently under development

Element	Factor	Comment
Earthworks	Design Standards for Earthworks	Minimum standards shall be met.

Part 3: Roading

Element	Factor	Comment
Parking	Adequate Saturation	Sufficient parking shall be provided to cater for a likely need given the neighbourhood environment, housing density, street function

		and future developments.
Carriageway Width	Street Function / Statue / Traffic Volumes	Allowance shall be made to cater for emergency service vehicles. Functional priorities shall be provided for.
	Safety of Cyclists and Pedestrians	The needs of the vulnerable road user shall be considered and incorporated into the development.
	Traffic Safety	All classes of vehicle shall use the carriageway in a safe manner without causing any measurable safety concerns.
	Speed Environment	The speed environment shall be appropriate to the function of the road, the type of surrounding development and width of carriageway.
	Connectivity	Roads connecting to the existing network shall have a function and purpose consistent with that network.
	Horizontal and Vertical Geometry	Safety for all road users shall be the priority and this shall be incorporated into the horizontal and vertical geometry.
	Character	Roads shall have an appropriate character that is consistent with the surrounding neighbourhood.
Intersection Spacings	Intersection Treatment	Close offset intersection spacing may be acceptable if there is appropriate treatment of the intersection consistent with the likely traffic volumes.
	Context	Low speed environments can support less conventional intersections.
Intersection Radii	Context	These shall be designed so that they cater for both pedestrian and vehicle movements.
	Safety	Radii on all intersections shall be designed so that they allow for vehicle and pedestrian movements in a safe and consistent manner.
	Access	Radii on roads leading to a business / industrial area shall be designed to cater for heavy commercial vehicle movements.
Sight Distances	No Variation Permitted	Adequate sight distances shall be provided in all situations
Longitudinal Gradients (increased)	Length of Grade	The steepness shall not be increased so that it causes adverse safety, drainable, viability alignment or future maintenance issues.
	Location	The location of sudden grade changes shall be located away from intersections and curves (including sag and crest)

	Character	Function and safety shall be maintained where the existing landscape or terrain is altered.
Road Pavement Construction and Testing	No Variation Permitted	The pavement shall be designed to cater for likely traffic in the development; including heavy vehicles e.g. rubbish trucks.

Road Drainage	Longevity, Reliability and Maintenance Requirements	Alternative stormwater systems can often require a greater level of servicing and cost to maintain them. Any alternative proposals shall identify the servicing requirements and all whole of life maintenance/capital costs.
	Impact on Formal Reticulation	Any impacts on the downstream reticulation shall be identified and addressed, including positive ones to alternate the flow.
	Road Safety and Secondary Flowpaths	If the failure of the alternative system results in widespread ponding, this will impact on road safety. Secondary flow paths shall be designed to cater for the entire runoff, in the event of a system failure.
	Local Subsoil Effects	Subsoil drain discharge points shall be located away from the pavement, hillsides and embankments so that pavement saturation / or slope instability does not occur.
Footpaths	Context	Footpaths shall be provided to access public open spaces in a planned and logical manner.
Pram Crossings	Safety / Desire Lines	All pram crossings shall be located in a safe location that provides the user with the best visibility of approaching traffic.
Road Lighting	Luminance – No Variation Permitted	Adequate lighting shall be provided throughout the development so that it is safe for all night-time users of footpaths and streets.
Road Markings	Environment	In some special cases a reduction in road markings may be appropriate, but only where other supporting treatments are present and safety is not comprised.
Street Furniture	Context	The provision of street furniture for seating, cycle racks, rubbish bins etc often enhances the built environment.
	Character	The inclusion of appropriate street features and public art can strengthen and enhance the development, neighbourhood and wider community.
	Creativity	The creation of a quality place to live and/or

		work is often related to the creativity of the space. Appropriate street furniture and its placement can aid in achieving this outcome.
	Safety	All street furniture shall be durable, safe and appropriately positioned so that it enhances the safety of the space.
	Maintenance	Durable street furniture shall be used that is easy and cost effective to maintain and renew.

Part 4: Stormwater Drainage

Element	Factor	Comment
Location	Access	Accessing the pipeline for maintenance and connections.
	Disruption / Traffic Delay	Locating the pipeline in the berm may minimise the need for highly restrictive traffic management required during maintenance. This is important in both narrow carriageways and very busy roads.
	Protection of Costly Surfacing	Within town centres or business areas, where special surface costings may be used, locating pipelines in the berm may reduce the need to uplift expensive paving materials.
Manhole Lids	Availability / Cost	The use of alternative lids, to match the surrounding paving can add to the character of a place, however the cost and availability of replacement lids must be considered.
Catchpits	Efficiency	A standard catchpit in an ideal installation has an entry capacity of 20–25 ltrs. Any alternative must be shown to have at least this capacity.
	Effective Screening	The screening effectiveness of any alternative grading must be equivalent to a standard catchpit grating.
	Cost	The cost and ease of replacing the unit or components will be considered.

Part 5: Wastewater Drainage

Element	Factor	Comment
Location	Access	Accessing the pipeline for maintenance and connections.
	Disruption/Traffic Delay	Loading the pipeline in the berm may minimise the need for highly restrictive traffic

		management during maintenance. This is important in both narrow carriageways and very busy roads.
	Protection of Costly Surfacing	Within town centres or business areas, where special surface costings may be used, locating pipelines in the berm may reduce the need to uplift expensive paving materials.
Manhole Lids	Availability/Cost	The use of alternative lids to match the surrounding paving can add to the character of a place. However the cost and availability of replacement lids must be considered.

Part 6: Water Supply

Element	Factor	Comment
Reticulation Layout	Level of Service	Applicant must show that all proposed and potential users can be serviced to the level of service required, including connectivity to provide through mains where available.
Alignment	Access	Sufficient access must be available for maintenance and future connections to the network.
	Road Widening	If road widening could be possible in the foreseeable future then the location of the main could be a consideration to this future work.