

8 Land Transport Network

8.1 Introduction

The road network within the Waikato District is a combination of nationally strategic state highways and local roads. The state highways connect the main towns of Raglan, Ngaruawahia, Huntly and Te Kauwhata. The state highway network is a resource of national importance, and is complemented by local roads within the towns and over the remainder of the district. There is also a network of walkways and routes for non-motorised travel. Rail has a significant role in freight and passenger movement through the district. This plan seeks to enable development of the land transport network while accommodating adjoining land uses and not adversely impacting on the environment.

8.2 Issue - Operation of the Land Transport Network

The integrated, safe, responsive and sustainable operation of the land transport network, particularly the road network, can be adversely affected by inappropriate design and construction, and connection between the network and adjoining land, as well as through the adverse effects of land use activities and subdivision.

OBJECTIVE	POLICIES
<p>8.2.1 An integrated, safe, responsive and sustainable land transport network is maintained, improved and protected.</p>	<p>8.2.2 Design, construction and operation of roads should be consistent with their function in the road hierarchy.</p> <p>8.2.2A Subdivision, use and development should not compromise the road function as specified in the road hierarchy.</p> <p>8.2.2B Subdivision, use and development should be in a location and at a scale that</p> <ul style="list-style-type: none"> (a) is consistent with the existing or planned capacity and design of the roading network, and <ul style="list-style-type: none"> (aa) is consistent with the intended function of any roads that may be affected by the subdivision, use and development (roading hierarchy), and (b) does not compromise the safety and efficiency of the roading network, and (c) does not compromise the safety and efficiency of the railway network. <p>8.2.3 The integrated, safe, responsive and sustainable operation of the land transport network should be promoted through:</p> <ul style="list-style-type: none"> (a) carriageway, intersection and site design (b) appropriate siting of and access for traffic generating activities (c) traffic management, signage, road marking, lighting, and rest areas and parking as appropriate (d) provision for pedestrians, cyclists and the disabled, including off

OBJECTIVE	POLICIES
	<p>road routes and connections including pedestrian malls</p> <p>(e) provision of public transport</p> <p>(f) provision for network utilities</p> <p>(g) appropriate access for existing land uses</p> <p>(h) railway crossing design.</p> <p>8.2.4 Subdivision and development should not obstruct future road linkages including access to adjoining land and to Hamilton City where relevant.</p> <p>8.2.5 Subdivision, use and development should be located and designed to connect safely to an existing road.</p> <p>8.2.5A Deleted</p> <p>8.2.6 Buildings, structures, night lighting, glare, advertising signs, aerial distractions and vegetation should not compromise the safe and efficient operation of the land transport network, or obscure RAPID numbers.</p> <p>8.2.7 Stock and pedestrians should be provided with safe and appropriate means of crossing a road or railway line.</p>

8.3 Reasons and Explanations

8.3.1 The Land Transport Network

Integrated transportation links are important in a large rural district such as the Waikato, with the network of roads, railways, and pedestrian and cycleways being of key importance in providing for social and economic needs. The road network is a resource of national, regional and district importance. The network accommodates both local and through traffic, and enables the community to meet its access, goods, communication and amenity needs. The road network also provides the opportunity to accommodate utilities. Safety, efficiency and convenience for users of the land transport network and for adjoining activities is an important consideration.

8.3.2 Road Hierarchy

The road hierarchy is based on road function and planned level of service, and helps to manage the effects of traffic on adjacent activities, and the effects of activities on the road network. It indicates the relative importance of roads within the district, against which the effects of land use and development can be assessed. Access for traffic generating activities, or for activities that are inappropriately sited, may have adverse effects upon the safe and efficient functioning of roads, particularly where the primary function of the road is to provide for through traffic. The function of roads within the road hierarchy should not be compromised when subdivision or intensification of land use occurs.

The design and construction of roads will also differ to ensure the appropriate functioning of each road type in the road hierarchy.

The hierarchy classification is presented in [Appendix A \(Traffic\) Table 7](#). The categories are:

- national routes
- regional arterial roads
- arterial roads
- collector roads
- local roads
- scenic and tourism routes
- culs-de-sac and no-exit roads.

8.3.3 Safe and Efficient Land Transport Network

The effects of subdivision, use and development on roads and rail must be taken into account, in terms of both local impacts and impacts on the wider network. Increases in traffic can result in a need for road upgrades such as widening, realignment and intersection upgrades. The nature and extent of subdivision, use and development should be managed so that the resultant level of road works needed is consistent with the long-term plans for the network and so that the cost of these works is fairly apportioned. It is important to ensure the safety and efficiency of the network is not adversely affected by unanticipated and substantial traffic volumes occurring at inappropriate locations. For instance, subdivision, use and development of a scale that individually or cumulatively results in the need to fundamentally redesign an intersection should be avoided unless it is consistent with integrated long-term plans for the network and land uses. It is noted that the location of some rural resources such as mineral resources is fixed and this will influence the location of use and development associated with such resources.

The design and construction of roads, crossings (including railway crossings), intersections, and other elements such as lighting and signage needs to meet safety requirements. Vegetation should not have adverse effects upon the safety of road users by obscuring vision or causing shading and icing of roads. Adequate sight lines should be provided and visual distractions minimised.

Opportunities for cycling and walking, and provision for public transport and solutions such as park-and-ride schemes should be integrated with the land transport network in order to reduce the number of vehicle trips, crashes, pollution, and the need for more investment in roads. Rest areas and parking should be provided where appropriate as part of the road network to provide for the safety and amenity of road users. Non-motorised transport modes have the potential to save energy through reduced use of natural resources such as oil and gas.

8.3.4 Road Linkages

Subdivision and development that occur in an ad hoc manner can preclude future access to other sites that could otherwise be developed and can constrain future strategic road development. Subdivision and development design should allow for road access to integrate with the existing road network when development proceeds. Similarly, development close to the boundary of Hamilton city needs to be able to link to city roads in the future.

8.3.5 Connection to Existing Road

New subdivision, land use activities or developments need to connect safely to existing roads. This can be achieved by minimising and restricting the location of access points onto roads from individual sites, providing sufficient and accessible loading, turning and manoeuvring space, providing practical, legal, vehicle access to every allotment created by subdivision, and ensuring high traffic generating activities have access to roads with the appropriate vehicle carrying capacity and function.

8.3.6 Visual Distractions

Buildings, structures, signs, lights, aerial distractions and vegetation have the potential to limit visibility and may increase the risk of crashes. They may need to be relocated, modified or prohibited to avoid adverse effects on the land transport network.

8.3.7 Underpasses

Areas or activities severed by road connections pose a risk to the safe movement of pedestrians. This may occur where parking is on one side of a busy road, and an activity is on the other, resulting in the need for pedestrians to cross the road. Bridges or underpasses provide for pedestrian and road user safety.

Risks to the safe movement of stock and drovers may occur where stock is moved across roads on a regular basis. Underpasses provide for safe stock movement.

8.4 Issue – Design, Construction, Maintenance and Operation

Design, construction, maintenance and operation of the land transport network can adversely affect the environment through earthworks and structures, increases in sediment and stormwater run-off, and property and community severance.

OBJECTIVE	POLICY
<p>8.4.1 Land transport networks are provided, while not compromising the qualities and character of surrounding environments.</p>	<p>8.4.2 Road and rail maintenance, construction and operation should minimise adverse effects on people, communities and the environment by managing:</p> <ul style="list-style-type: none"> (a) discharge of stormwater (b) effects of contamination, including discharge of stock effluent (c) disturbance to natural landforms, soil resources, indigenous vegetation and habitats, and cultural and heritage sites (d) severance of property and communities (e) road surface noise (f) connections between communities (g) glare and light spill from street lighting.

8.5 Reasons and Explanations

8.5.1 Environmental Effects

Construction, maintenance and use of land transport networks, and in particular roads, can have adverse effects including disturbance to landforms, indigenous vegetation and habitats, contaminant discharges, noise and vibration, vehicle emissions, and dust, which can impact on water, soil and air quality. Pollution can be minimised by decreasing traffic volumes and travel times, and by designing roads to minimise runoff. Land disturbance, earthworks and vegetation clearance for road development should avoid significant landform features, and cultural and heritage sites (see also Chapters 3 and 12). Environmentally sensitive construction and design techniques should include restoration of natural habitats and where appropriate, maintenance of ecological corridors to avoid severance of significant habitats.

8.6 Issue – Urban Expansion

New roads on the Hamilton urban fringe may compromise the later construction of an urban standard and density road network.

OBJECTIVE	POLICIES
<p>8.6.1 Future urban standard and density road network is not compromised by new roads on the Hamilton fringe.</p>	<p>8.6.2 New road construction should not bisect or otherwise compromise future arterial routes.</p> <p>8.6.3 New roads should be located in accordance with an urban development structure plan that is approved prior to construction.</p>

8.7 Reasons and Explanations

Hamilton City is projected to continue to grow rapidly. This may necessitate the conversion of rural land in the vicinity of Hamilton into high-density urban use. Sustainable management of this land requires that attention be paid to road development that might occur during the period prior to conversion to full urban use. New roads could impede later conversion of land to urban uses by obstructing the required urban road and utility networks, reducing the available economies of scale for urban development, and by causing inefficient use of the land resource and infrastructure.

8.8 Methods of Implementation

8.8.1 Regulatory Methods

- (a) Rules for subdivision, land use and development by reference to traffic generation effects, location of buildings and signs, parking and manoeuvring standards, vehicle crossings, sightlines and design and construction of roads.
- (b) Rules for prohibiting new roads in the Urban Expansion Policy Area, except in compliance with indicative roads on the planning map .
- (c) Identify road hierarchy on planning map.
- (d) Identify indicative roads on planning map.
- (e) Structure plans for greenfield development areas.
- (f) Designations.

8.8.2 Deleted

8.8.3 Council Works and Services

- (a) Council works and services programmes that provide for the construction, maintenance and upgrade of roads in a way that is consistent with the road hierarchy.
- (b) Develop and provide for convenient and safe cycle lanes, footpaths and walkway networks.
- (c) Support promotion of safe and accessible road network for the disabled and elderly.

8.8.4 Information, Education and Advocacy

- (a) Liaise with Waikato Regional Council.
- (b) Liaise with adjacent territorial authorities.

- (c) Liaise with the New Zealand Transport Agency.
- (d) Encourage use of indigenous species in roadside plantings where they will not compromise road safety.

8.9 Reasons for Methods

8.9.1 Regulatory Methods

Regulatory methods are necessary to protect peoples' health and safety and the environment from the adverse effects of land transport, and to protect the land transport network from the effects of land use. Rules are necessary to ensure that the design of the road network, including access points to and from the road, and the location and design of parking and loading areas meets acceptable construction and safety standards. The Council's Engineering Code of Practice - Part II Roading, is one means of ensuring compliance with the specified standards.

The road hierarchy recognises that roads perform a variety of functions and accepts a certain level of adverse effects on the amenity values of adjacent activities. Initiatives of the Council and other agencies, through good road design and other methods outside the plan, will encourage traffic to use appropriate routes within the hierarchy.

Designations are mainly used to ensure that land use activities do not prevent the construction of significant roads at a future date. The designation process also enables the effects of the proposed road on the environment to be assessed, and any adverse effects mitigated. Designations also protect existing rail corridors.

Structure plans and indicative roads are used to guide the development of greenfield areas. Rules relating to the location of indicative roads and the location of buildings on or near them are included to ensure that the future road alignment is not adversely affected by development. Structure plans can establish a road network and pattern of land use that will, amongst other things, achieve the desired transportation objectives. Roads do not have to be constructed precisely on the alignment shown on the planning map, provided the link between two locations is achieved. Where the Council considers that it is in the public interest to purchase and form an indicative road as shown on a structure plan then the Council may choose to do so. Rules that apply in the Urban Expansion Area ensure that new roads do not impede or increase the costs of future conversion of the land to full urban uses and the creation of an urban road network.

8.9.2 Deleted

8.9.3 Council Works and Services

The Council is the main provider of roads in the district and therefore has responsibility to carry out works to develop and upgrade the road network. This includes improvements to seal, footpaths and intersections, sealing of unsealed roads, bridge replacement and upgrades, construction and maintenance of kerb and channelling, and provision of footpaths, walkways and cycleways.

8.9.4 Information, Education and Advocacy

Education has a role to play in addressing the environmental effects of transportation as well as the safe use of the road network. The New Zealand Transport Agency also has a role and interest in maintaining safe and efficient state highways. The Waikato Regional Council has an advocacy role regarding land transport in the Waikato region.

Waikato District Plan - Waikato Section

8.10 Anticipated Environmental Results

ISSUE	ANTICIPATED ENVIRONMENTAL RESULTS
<p>8.10.1 Operation of the land transport network</p>	<ul style="list-style-type: none"> (a) Improved land transport, traffic and pedestrian safety. (b) Efficient movement of people and goods. (c) Safe corridors for pedestrians, cyclists and public transport. (d) Land transport network is sustainably managed and not compromised by subdivision, land use and development. (da) Subdivision, use and development consistent with existing or planned roading network capacity and design (e) Reduced conflicts between land use activities and developments, and road users. (f) Enhanced accessibility to the road network for people with disabilities. (g) Adequate provision for parking. (h) Opportunity for non-motorised travel. (i) Amenity not unduly impacted by roads, including street lights.
<p>8.10.2 Design, construction, maintenance and operation</p>	<ul style="list-style-type: none"> (a) Minimal disturbance to landforms, soils, and cultural and heritage sites. (b) Avoidance or mitigation of run-off effects on water quality. (c) Retention of physical connections within and between communities. (d) Minimal noise attributable to use of roads.
<p>8.10.3 Urban expansion</p>	<ul style="list-style-type: none"> (a) Future road networks, especially on the urban fringe, are not compromised by subdivision, use or development.