

6 Existing Environment

6.1 Topography

The topography of the study route is generally rolling to flat as the road traverses the plains of the Waikato River with minimal use of cut and fill. Generally the route follows the near level plains formed by the Taupo pumice alluvium. There are numerous stream and drain crossings, some in deep gullies.

6.2 Land Use

The land use along the road can generally be described as:

- Pastoral farming through the majority of the study length;
- Urban activity in the settlements of Reporoa and on the outskirts of Taupo;
- Urban, industrial and community activities around the settlement of Broadlands;
- Lifestyle blocks;
- Small amounts of relatively isolated industrial activity. (for example Ravensdown Fertiliser Storage);
- Urban industrial activity on Miro Street;
- Forestry;
- Timber processing;
- Geothermal Power Station;
- Small amounts of crop farming;
- Small amounts of sheep farming;
- Recreational activity (Pony Club, Riding for Disabled, Centennial Raceway).

The economy of the area serviced by Broadlands Road is strongly dependent upon agriculture and to a lesser extent forestry. The predominant economic activity along much of Broadlands Road is dairy farming. This can generate high numbers of HCVs with daily tanker collections to farms. In addition, the growing, tending and harvesting of planted forests and the Geothermal Power Station have an impact on the transportation network.

There is a proposal to expand the Centennial Park raceway adjacent to the Broadlands Road/Centennial Drive intersection. This will impact on the traffic function of the road during major events. Details of the traffic effects from the assessment of environmental effects for this proposal are included in Appendix 5 of this report.

6.3 Ecology

Broadlands Road passes through a landscape that has been highly modified by farming practices and other human activities. Much of the forest habitat that would once have occupied the corridor has been replaced by vegetation characteristic of intensive agriculture, for example pasture.

The Waikato River and its tributaries form the principal natural drainage system for the study area. Many of its tributaries pass under the existing road. Artificial drains have also been cut in farmland adjacent to the existing highway. Maps of the area also indicate that small ponds may be present although this requires verification in the field. These rivers, streams and ponds will provide habitat for aquatic plants, fish, birds and aquatic invertebrate communities. They may also have associated terrestrial plant species and communities in their riparian margins. The main potential issues associated with rivers, streams and ponds are:

- loss of habitat,
- impacts on wildlife corridors, particularly passage of migratory fish in rivers and streams,
- management of construction activities to avoid/control downstream effects of sedimentation.

6.4 Landscape

The landform of the project area is that of the Waikato River alluvial flood plain. The majority of the route parallels the Waikato River, which is located to the west. The topography along the project length is flat to gently undulating. The majority of the route has been developed for either agricultural or forestry purposes with the occasional farm shelterbelt or hedgerow and clumps of mature trees. The route also traverses three urban areas, which include Reporoa, Broadlands and the eastern fringes of Taupo.

An effective way of integrating road changes into the surrounding pastoral landscape is to maintain as much as possible of the road margins in pasture. Any borrow or spoil disposal areas that may be required should be managed so that the resultant surface can be rehabilitated and returned to productive use. Landscape impacts can be minimised during the design phase by limiting vegetation removal, limiting the extent of earthworks, providing gentle grades and well rounded profiles for batters, shaping the tops of cut batters, rehabilitating riparian margins impacted by the proposal, limiting the bulk of structures and top soiling and grassing, or planting batters as appropriate.

6.5 Archaeological Sites

The District Plan, Historic Places Trust Register and the New Zealand Archaeological Association database have all been searched. No directly affected sites have been identified in the immediate vicinity of Broadlands Road. However, archaeological surveys may be required as part of any further detail design works, because although sites in the vicinity of works have not been identified in the existing information sources this is not a guarantee that there are no sites, only that the sites are not known.