

Chapter 7  
Part D  
VOLUME 2

# Network Utilities

## Overview

This chapter sets out the effects of the Project on network utilities. The chapter further outlines how these effects are managed and what mitigation is proposed.

There are a number of networks within the Project area, however in all cases effects are able to be recognised during construction and managed appropriately.

Further information on measures to address effects on network utilities will guide construction in the form of a Network Utilities Management Plan (NUMP). This will include ongoing liaison with the relevant utility owners. Detail on the NUMP and on network utilities is contained in Technical Report 5, Volume 3.

## 7 Network Utilities

### 7.1 Introduction

There are a number of existing network utilities within the Project area, namely:

- Electricity distribution;
- Telecommunications facilities;
- Water, wastewater and stormwater;
- The Arcus Road Irrigation Scheme;
- Gas distribution; and
- Railways.

### 7.2 Existing Environment – Network Utilities

#### 7.2.1 Electricity Distribution

The sole electricity provider for the Project area is Horowhenua Energy Limited (Electra). Electricity distribution infrastructure will be affected in a number of locations and will need to be protected or relocated. The network consists of above and below ground cables, typically 400V, 11kV and 33kV. There are two locations within the Project where Electra's overhead transmission assets will require relocation. These are at Mary Crest (over a distance of 1.1km) and between the North Ōtaki on ramp and Taylors Road (a distance of about 1.4km). None of the Electra substations are located close to the proposed Expressway alignment.

Transpower's Bunnythorpe to Haywards A (BPE-HAY-A) and B (BPE-HAY-B) 220 kV lines are about 2km to the west of the Expressway and are not affected.

#### 7.2.2 Telecommunications Facilities

There are seven locations, listed below, within the Project area where Telecom has underground copper and/or fibre lines, all of which will require relocating.

- Existing SH1 ramp bridge;
- Rahui Road;
- Ōtaki Gorge Road;
- Old Hautere Road;
- From School Road to Gear Road;
- Mary Crest; and
- Te Hapua Road.

### 7.2.3 Water, Wastewater and Stormwater

KCDC provides water, wastewater and stormwater services for all the urban areas in the Kāpiti district. These services are predominantly located in the road corridors. Several water and stormwater lines will require either protection or relocation within the Project footprint. The only wastewater line that will require relocating or protecting, is along Rahui Road.

### 7.2.4 Arcus Road Irrigation Scheme

The Arcus Road irrigation scheme draws water from a bore 300m to the east of the Expressway alignment on the south bank of the Ōtaki River and then pipes it along the existing rail corridor south to Te Horo. The bore abstraction will be unaffected, however new sections of pipeline will be provided where the scheme crosses the Expressway near Ōtaki Gorge Road and north of Te Horo to ensure that the scheme is maintained.

### 7.2.5 Gas Distribution

There are two locations where local gas distribution assets are situated in the vicinity of the Project area. These assets are owned and operated by Vector Gas Limited. The first location is along Rahui Road in the existing carriageway which will require relocation or additional protection installed if they remain under the proposed overbridge embankment. The second location is from Te Horo Beach Road (chainage 7,200m) running south along the existing SH1 to Mary Crest (chainage 10,000m) where the Vector Gas pipeline is located in the western verge and may require local protection, however, no major relocation works are required.

### 7.2.6 Railway

The Expressway is parallel, and in close proximity, to the NIMT from Peka Peka Road northbound and will deviate away from the NIMT (arching away in a westerly direction) just south of the proposed Ōtaki southern interchange at chainage 4500m. Through Ōtaki the railway must be realigned to provide space for the Expressway. A new line is proposed, including a second track (that includes the replacement of a passing loop at the railway station) from Ōtaki to just south of the Waitohu bridge (chainage 900m).

All associated signals, utilities and controls associated with the realignment section will be relocated, or replaced, as part of the Project.

## 7.3 Assessment of Effects on Network Utilities

The Project philosophy towards planning for existing network utilities is to avoid disruption to services, where practicable. However, given the large scale of the Project and the presence of network utility infrastructure along the alignment, not all potential disruption effects can be avoided and various utilities will require protection or relocation during construction, which is likely to result in some disruption.

The intensity of network utilities near or within the residential area of Ōtaki is higher than in the rural or rural residential areas of Te Horo and Mary Crest and a greater number of network utilities in Ōtaki will be affected by the construction of the Project.

Concept solutions have been discussed with all affected network utility providers. The following approaches form the basis of the Project design response:

- To maintain full operation of services during construction of the Project;
- To protect existing services from potential damage caused by the Project operation or its construction;
- To protect the proposed Project from future damage and disruption caused by possible service failures (for example, burst water mains);

- To maintain accessibility to the services (for example, for maintenance and repairs);
- To relocate overhead services underground where they cross the Project;

The process for further engaging with network utility operators and exchanging information will be set out protocols in the NUMP. This will include the requirement for NZTA's contractors to work closely with the relevant utility owners' contractors to undertake the necessary protection and/or relocation works. The process will be undertaken in accordance with the NUMP, the preparation of which is proposed as a condition of the designation.

The NUMP will include:

- Protocols for liaison and information exchange between network utility providers and the NZTA;
- A process for network utility operator approval of proposed works on their utilities;
- Protocols for onsite works and responsibilities for both NZTA's contractors and the network utility operator;
- Protocols for utility operator design and supervision services; and
- Protocols for inspections and final approval of works by network utility operators.

### 7.3.1 Electricity Distribution

Consultation has taken place with Electra to identify where the Project will affect its services and how these services will be maintained during construction and operation.

Where the above-ground network crosses the Project, cables will likely be buried underground (for example, within ducting); existing below-ground services that cross the Project will require relocation or protection. Solutions for maintaining services will be incorporated into the Project and will be implemented during construction. Protocols for managing this process with network utility providers will be set out in the NUMP.

During construction there is potential for dust to settle on insulators, which may interfere with the lines. This will be managed through use of appropriate dust suppression which is outlined in Appendix C, Volume 4: Draft ESCP.

### 7.3.2 Telecommunications Infrastructure

Telecom has fibre optic cables that will be affected by the Project. Telecom also has copper lines that cross the Project. NZTA has consulted with Telecom to identify the number of cables affected and options for maintaining these utilities during construction and operation of the Project.

The options available are protection of cables where they cross the alignment, and / or realigning the cables so they are not affected. These solutions will be incorporated into the Project and will be undertaken during construction works. Any adverse effects on telecommunications infrastructure will be avoided or appropriately mitigated.

### 7.3.3 Water, Wastewater and Stormwater Infrastructure

No particular issues are anticipated with re-alignment of these services. A number of pipes cross the Project, and the NUMP will guide how these relocations are to be carried out during the construction period. Any potential adverse effects on local water, wastewater and stormwater systems will be avoided or appropriately mitigated.

### 7.3.4 Arcus Road Irrigation Scheme

New sections of pipeline will be provided where the scheme crosses the Project near Ōtaki Gorge Road and north of Te Horo to ensure that the scheme is maintained.

### **7.3.5 Gas Distribution**

As outlined above, Vector has a gas pipeline corridor that crosses the alignment at Rahui Road and between Te Horo Beach Road and Mary Crest. Vector has been consulted on the Project design and its implications for its pipelines.

Any required protection or re-alignment of the gas pipelines and/or point where gas is delivered to a property, is intended to be co-ordinated with the construction of the Project. NZTA will work closely with Vector to avoid and mitigate potential adverse effects on their gas pipeline network to an acceptable level.

### **7.3.6 Rail Infrastructure**

The Expressway requires the realignment of the NIMT through the Ōtaki township. The NIMT realignment is expected to be completed before the construction of the Expressway starts and once the Expressway is operational there will be no adverse effects on the operation of the NIMT corridor.

As noted above, the Expressway is parallel, and in close proximity, to the NIMT. Without mitigation, the operation of the NIMT could be adversely affected during the construction period. Potential effects include dust settling on railway infrastructure and interfering with its operation. Dust control will be appropriately managed in accordance with the CEMP (for example, by the use of dust suppressants, or damping down surfaces). Subject to implementation of the CEMP, any adverse effects on the operation of the NIMT will be avoided or mitigated to an acceptable level.

## **7.4 Measures to Avoid, Remedy or Mitigate Adverse Effects**

The adverse effects on network utilities are likely to occur during construction of the Expressway, and will be avoided, remedied or mitigated using the methods discussed in 7.3 above. A number of the utility services that cross the Expressway alignment have not had potential relocation plans finalised, these plans are to be completed in conjunction with the NUMP and further liaison with the utility authorities, prior to construction of the Expressway. Conditions detailing the measures to mitigate construction effects, including in relation to the NUMP, are described in Part H, Chapter 31 of this AEE report.