



NZ TRANSPORT AGENCY  
WAKA KOTAHI

# VICTORIA PARK TUNNEL

## Project Summary Statement

### January 2010



## **Table of Contents**

- 1. Purpose of Document**
- 2. Strategic Context**
- 3. Benefits**
- 4. Project Scope and Economics**
- 5. Implementation Plan**

# ROAD OF NATIONAL SIGNIFICANCE: VICTORIA PARK TUNNEL

## 1. PURPOSE OF DOCUMENT

This paper provides information on the context, strategic benefits and implementation plan for the completion of the Victoria Park Tunnel project, one of the seven Roads of National Significance (RoNS).

## 2. STRATEGIC CONTEXT

### *2.1 Population, employment and growth*

Boosted by economic growth, tourism and immigration, the population of the Auckland region is projected to grow to two million people within the next 25 years, an increase of over 40% in the current population. This is the equivalent to a city the size of Dunedin being added to Auckland's population every four to five years.

Auckland faces unique transportation challenges because of its geography. The city is located on an isthmus and this means that its motorways are structured around a north south access with two motorway crossings of the Waitemata Harbour providing access between North Shore and Auckland. There is also limited east-west motorway access across the city serving key locations, such as the airport.

Commuters' needs, at this stage of the region's expansion, are only partially accommodated by passenger transport services, while commercial and industrial traffic is almost wholly dependent on the region's existing road system. As a consequence, Auckland's car ownership levels have increased to 1.6 motor vehicles per household, putting it on a par with Southern California, currently the world leader in private car ownership.

The current Auckland network primarily comprises four motorways: SH 1 (Northern and Southern), SH16 (Northwestern, interconnected through the Central Motorway Junction), as well as SH18 (Upper Harbour), and SH20 (Southwestern).

While the region as a whole is very vulnerable to queues and delays, traffic congestion through Auckland's central motorway network is recognised as one of the most serious issues in Auckland. Congestion on the motorway network is no longer specific to morning and afternoon peak periods, with many sections of the network becoming increasingly congested through the middle of the day and on weekends. Without road improvements, congestion and the subsequent delays will continue to worsen, with serious potential consequences for the economic and social wellbeing of the region, and the nation.

### *2.2 Existing routes*

The Victoria Park Tunnel project is one part of a series of projects known as the Central Motorway Improvements (CMI) designed to reduce congestion through Auckland's central motorway network. The Central Motorway Junction & Grafton Gully projects have already been completed. Other elements currently under construction include the Newmarket Viaduct project, and now the Victoria Park Tunnel project.

Future projects, currently not in the programme, required to complete this link include the completion of SH16 to the Port and the completion of an Additional Waitemata Harbour Crossing.

### 2.3 Objectives of the Victoria Park Tunnel RoNS

Within the context of the wider CMI, the objectives of the Victoria Park Tunnel RoNS project are:

- To enhance inter regional and national economic growth and productivity;
- To realise the full capacity of the Auckland Harbour Bridge and adjacent motorway; and
- To improve safety and efficiency of access by road between the North Shore, Central Auckland, Auckland Port and surrounding areas.

**Map 1: Victoria Park Tunnel Projects**



## 3. BENEFITS

### 3.1 National network benefits

The Victoria Park Tunnel project is expected to deliver significant benefits to the national network when it is complete:

- Improving the efficiency of the network by enabling more reliable journey times;
- Reducing congestion across the Auckland Harbour Bridge;
- Improving access to the Auckland City centre.

Evaluations of the Auckland network featuring different scenarios (with and without the Victoria Park Tunnel project improvements) have been completed. These evaluations show that the current capacity of the Victoria Park Viaduct (southbound, AM) is 4,250 vehicles per hour (vph), but demand is in fact much greater. With the Victoria Park Tunnel project in place, capacity will increase to 6,000 vph, which satisfies current and future demand. It is expected that by 2016, the project will deliver journey time savings of up to 20 minutes during peak periods.

The widening along St Mary's Bay will provide upgraded bus priority between the City and Auckland Harbour Bridge. Greater use of the busway reduces the number of vehicles on the North Shore motorway, reducing congestion.

By improving efficiency and reducing congestion, as well as reducing overall driver frustration, safety outcomes for all road users will also be improved as a result of this project. For example, it is anticipated that by reducing 'stop-start' driving conditions (where vehicles are constantly accelerating and decelerating), the potential for nose-to-tail collisions will be reduced.

### ***3.2 Regional growth benefits***

The Victoria Park Tunnel project is expected to deliver significant growth benefits to the region when it is complete, by:

- Increasing the economic efficiency and productivity of the Auckland Region by improving access to markets;
- Enabling freight operators to benefit from more reliable access across the Waitemata Harbour, through to the Port and the Central Business District (CBD).

The Auckland Harbour Bridge is the primary freight route through the region and freight accounts for approximately 5% of the total traffic that uses the Auckland Harbour Bridge (8,300 freight movements per day). The majority of these freight vehicles continue their journey across Victoria Park and through the Central Motorway Junction. It is expected that the Victoria Park Tunnel will enable freight operators to benefit from more reliable travel times with reduced congestion in this area.

The Victoria Park Tunnel will also deliver reduced travel times between producers and their markets. This stimulation of growth through agglomeration will potentially have benefits in the Wairau Valley, Smales Farm and other similar business areas.

In addition, improving accessibility is expected to support economic activity and improved productivity on an intra-regional scale. For example, the new road will enable employees to travel more easily, which means that businesses will be better able to retain existing staff and attract new employees.

### ***3.3 Local network connectivity***

There are a number of improvements to the local road network which will assist in making the Victoria Park Tunnel and the surrounding road network more effective.

This includes 24-hour bus priority widening on Fanshawe Street. This project was completed a number of years ago, but the Victoria Park Tunnel will enable more benefits to be realised as improvements to the intersection of SH1/Fanshawe and Beaumont St will assist with bus movement.

The Wynyard Quarter (located north of Fanshawe Street between Beaumont and Halsey Streets) is the last remaining significant brown-field site within the Auckland CBD. The development of this site is a critical component of the Central Area's growth strategy. To achieve full development it will be necessary to substantially enhance public transport, walking and cycling options, and vehicle capacity into the Quarter. The Victoria Park Tunnel will help to improve vehicle access into Beaumont Street through the provision of a dedicated left turn lane, which Auckland City will add to by providing additional road widening and clearways.

## **4. PROJECT SCOPE AND ECONOMICS**

The Victoria Park Tunnel project will involve constructing a three-lane, northbound tunnel beside the Victoria Park viaduct, and converting the existing viaduct to four southbound lanes. Between the viaduct and the Auckland Harbour Bridge, the number of northbound lanes will increase to five, with provision for bus priority where necessary, and the number of southbound lanes will also increase to five, with a bus lane.

These changes have been developed to enable the Victoria Park Tunnel to provide the same number of lanes approaching and leaving the Auckland Harbour Bridge, and to match the capacity provided by the Central Motorway Junction and Grafton Gully projects.

The forecast outturn costs of the RoNS corridor (in 2009 dollars) at the most likely level is \$396 million within a confidence range of \$ 356 million to \$ 436 million.

The final costs of the RoNS corridor will include future years escalation (normally three percent) due to increases in input costs largely following national economic inflationary pressures. The actual amount of escalation attributed to individual projects depends on the time frame for the construction. If a project is constructed earlier than predicted then the amount of escalation would be lower. Equally if construction is later than predicted the cost of escalation would be higher. However, at a RoNS corridor level the individual project effects are less marked. Thus the forecast outturn cost of the RoNS corridor would be \$ 406 million with a confidence range of \$ 370 million to \$ 466 billion.

The standard benefit cost ratio (BCR), as currently calculated is based on an 8 percent discount rate. Some would argue that this discount rate leads to investment that is too focussed on short term projects at the expense of large long term infrastructure. To review the impact of the discount rate the BCR with discount rates at 6 percent and 4 percent were also tested.

Discount Rate	Standard NZTA BCR
8%	3.2
6%	3.9
4%	4.9

## 5. IMPLEMENTATION PLAN

### 5.1 *Current status*

The Victoria Park Tunnel is one of the first projects to benefit from the Government's decision to increase funding for State Highway construction, which has allowed the construction start date to be brought forward by one year.

The Victoria Park Tunnel project was an ideal candidate for fast-tracking as the investigation/planning phase of the project has been completed, the Designation confirmed and Resource Consents granted. Construction of the project began in October 2009.

The current programmed date for construction completion is early 2013. The construction work has been broken into two sections, St Mary's Bay as the early works package, and the main package of works (Tunnel construction, Fanshawe/Beaumont/SH1 interface and all other main alignment works), which will allow some sections of the project to be completed ahead of the overall programmed completion date.

### 5.2 *Stretch targets*

The NZTA has chosen the Alliance method of delivery for the Victoria Park Tunnel project. The Alliance method is favoured for fast-track projects and provides the ability to manage the complexity of the cut and cover operations whilst maintaining one of the busiest sections of motorway in New Zealand.

While the Alliance planning is still in the early stages, we believe that potential stretch targets could be achieved for delivering components of the work as early as mid-2011 for St Mary's Bay, and by the end of 2011 for the main works.