



# Hastings District Council

## Whakatu Arterial Link

### Traffic Management Plan

June 2014



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# 1. Introduction

## 1.1 Purpose of this report

The purpose of this report is to describe how the Whakatu Arterial Link (WAL) between SH2 North and Pakowhai Road can be constructed without adversely affecting the safe and efficient operation of the current roading network.

The successful contractor appointed to construct the works will produce their own Site Specific Traffic Management Plans (SSTMP) as part of the overall Construction Environmental Management Plan (GHD 2014i), in consultation with landowners and agreement with the relevant road controlling authorities (RCA), i.e. Hastings District Council and NZ Transport Agency, for each section and stage of work. This report provides a methodology as to how the contractor may choose to undertake the traffic management for key stages of the works, however the contractor is not obliged to follow this method and may adopt its own sequencing and traffic management plans that better suit its intended works programme.

The contractor will not be able to undertake any traffic management on the road network until its SSTMPs have been approved by the relevant RCAs.

This traffic management plan indicates how the WAL can be constructed whilst maintaining safe operation of the roading network and allowing access to the businesses to be maintained.

## 1.2 The Whakatu Arterial Link

The WAL will run between SH2 North and Pakowhai Road, with a connection at Whakatu Road, providing a direct link to the Whakatu Industrial Area and the Hawkes Bay Expressway.

The WAL will be a new two lane carriageway approximately 3.5 kms in length and will be constructed predominantly off line (i.e. not over the alignment of an existing road). The road follows the Karamu Stream for much of its length however it intersects with the following roads:

- Intersection of State Highway 2 and Napier Road;
- Whakatu Road; and
- Pakowhai Road.

In addition to the above intersections the following two roads are being diverted or closed:

- Pilcher Road prior to its intersection with State Highway 2 is to be diverted to the Napier Road and SH 2 intersection;
- Ruapahia Road is being closed at the railway crossing and at Pakowhai Road.

The construction of the WAL is expected to take 18 months with work undertaken at several sites simultaneously to optimise the construction programme.

The critical elements in terms of managing effects on road users will therefore be the intersections, where the staging of construction will need to be carefully considered in order to maintain traffic flow and minimise adverse effects on existing road users. The other major consideration is maintaining property access, particularly to the industrial properties located around Whakatu Road.

## 2. Traffic Management

### 2.1 Objectives and Strategy of Traffic Management Plan

The objectives of the traffic management plan are to:

1. Ensure the safety of road users including pedestrians and cyclists during the construction works;
2. Ensure safe access is maintained to properties and businesses affected by the works; and
3. Show that the new road can be constructed whilst maintaining connectivity within the existing roading network.

The strategy for the Traffic Management Plan is to keep all delays to road users to a minimum as far as reasonably practical without compromising road worker and road user safety, not unduly delaying the contractor's programme, nor increasing costs unreasonably.

Construction of the project is expected to take around 18 months (or two construction seasons) with works carried out concurrently at various locations to optimise the construction process while seeking to minimise disruption to existing road users, land owners and the local community.

The construction period is a guide at this stage. As the majority of the project will be carried out off line there is flexibility around the scheduling of work with opportunity to condense or extend this construction period.

It is envisaged that the construction of the main alignment can be undertaken concurrently with the key aspects described below and not be opened to traffic until the intersections are completed.

The key aspects of the construction are considered to be:

- SH2 / Napier Road roundabout including realignment of Pilcher Road;
- Karamu Stream bridge;
- Whakatu Road roundabout
- Pakowhai Road roundabout;
- Rail crossing; and
- Property access particularly at Whakatu Road (Apollo Pac).

The contractor appointed through the tendering process will be required to finalise a CEMP (GHD 2014i) which will include an outline construction programme identifying and sequencing all the key parts of the Contract Works. This baseline programme shall clearly indicate which parts of the works are to be under construction at any time and the total planned duration of each part. The total planned duration shall include all reinstatement works, including sealing, where this is required.

The specific comprehensive construction methodology will be identified by the contractor in the final CEMP. The contractor will specify how the contract works will be delivered on time and to the standard and requirements specified in the Contract Documents. The methodology must clearly state how the work is to be carried out with minimum disruption to the users of the businesses in the project area and the public.

The contractor's construction methodology will also indicate how they will ensure that the site, including any traffic management is maintained in a safe and useable condition during the period of the work and any close down periods.

## 3. Traffic Management Plans

In addition to the contract requirements for the contractor's works programme, the Road Controlling Authorities (RCAs) will require Site Specific Traffic Management Plans (SSTMPs) showing how traffic will be safely guided through the work sites or diverted around them. Without approval from the relevant RCA the contractor's Carriageway Access Request (CAR) application to work on the roading network would not be granted by the RCA.

This section contains methodologies for carrying out the construction works and managing the traffic around them. It is however for the appointed contractor to devise SSTMPs that best accommodate the contractor's proposed method and sequences of working.

SSTMPs are required for all works on the roading network including surveying prior to construction start and for small works such as erection of advance warning signs and resealing. These are relatively straight forward procedures that are not expected to result in any significant issues, and will need to be developed in consultation with affected landowners, and are therefore not covered in this report. All traffic management is to be in accordance with the Traffic Control Devices, Part 8, Code of Practice for Temporary Traffic Management (CoPTTM).

### 3.1.1 Intersection Traffic Management

The three key sites that require careful traffic management planning are those that are being constructed online, namely:

- Pakowhai Road roundabout
- Whakatu Road roundabout
- SH2 Roundabout.

Construction at these locations needs to be carefully planned to avoid any adverse effects on the safe operation of the roading network and ensure use of residential roads by heavy industrial traffic is kept to the minimum.

To reduce the impact of the construction works on motorists using the roading network the contractor will be expected to ensure that both Pakowhai Road and SH2 intersections are not concurrently affected by traffic management measures that may result in delays to road users.

### 3.1.2 Property Access

During construction, property access will be affected to some properties. The impacts are expected to be caused by one of the following:

- worksites blocking direct access or delaying access to properties;
- access being within a road closure; or
- property access being on a nominated detour route.

The following business will have access directly affected by the construction works:

- Apollo Pac Limited.
- Nimon's (Lucknow)

- Beasley

SSTMPs will contain details identifying the proposed mitigation measures for all relevant impacts on the properties for acceptance by the Hastings District Council. Consultation with the owners and occupiers of all affected properties will be undertaken prior to the SSTMPs being submitted to HDC and the NZ Transport Agency as appropriate.

The SSTMPs will provide specific provisions for access to affected properties. Consultation will also be undertaken through the development of these plans to ensure the residents and businesses have appropriate access to meet their needs, for example with respect to heavy vehicle provisions. It is expected that all access issues can be effectively managed through the development and implementation of SSTMPs.

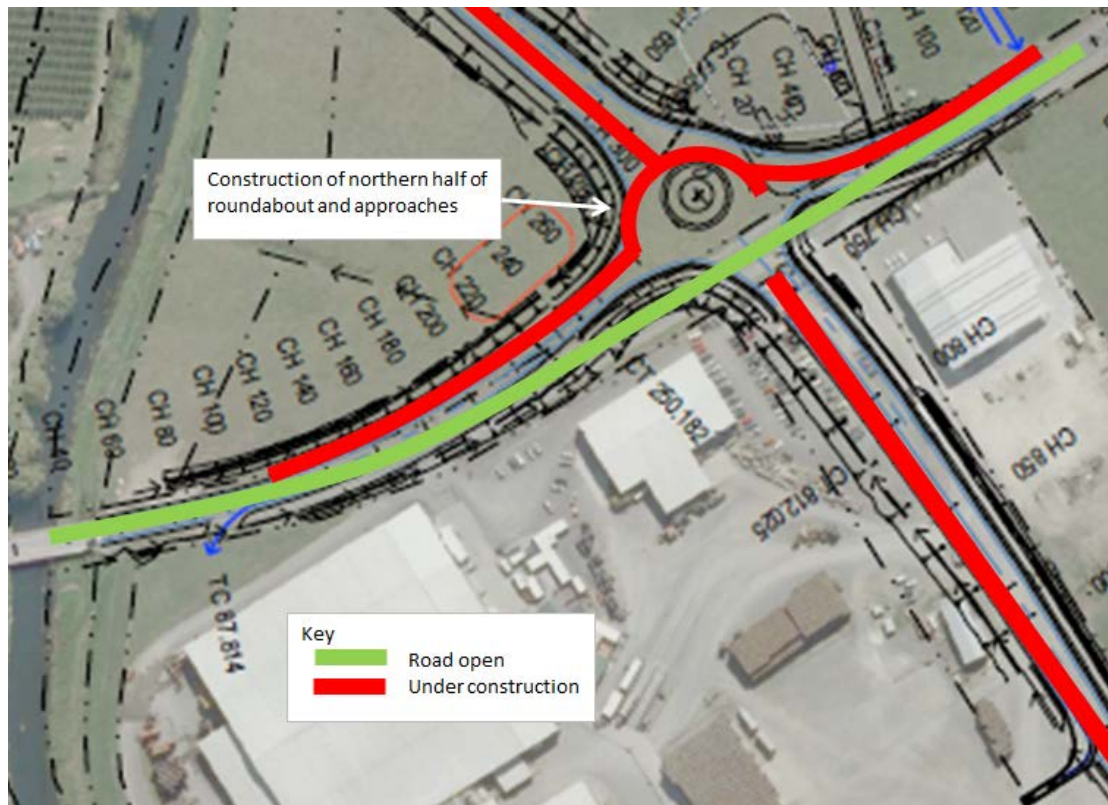
### 3.2 Whakatu Road Roundabout

There are a number of large industrial businesses on the western side of Whakatu whilst the eastern side is predominantly residential. Access along Whakatu Road and Anderson Roads to Ruahapia Road enables heavy trucks to access Pakowhai Road and the Hawkes Bay Expressway without running through residential areas.

Closing Whakatu Road off for the construction of the WAL will result in all heavy traffic passing through the residential areas of Whakatu. To avoid this, construction should be phased to keep Whakatu Road open as a through route with the possible exception being for road layout change overs.

A phased construction of the Whakatu Road roundabout intersection is possible which will allow Whakatu Road to remain open to traffic. The northern half of the roundabout together with the Whakatu Road approaches could be constructed first as shown in Figure 1 below. To accommodate the two-way operation of Whakatu Road during later construction phases it may be necessary to provide some temporary widening on the new approaches to the roundabout.

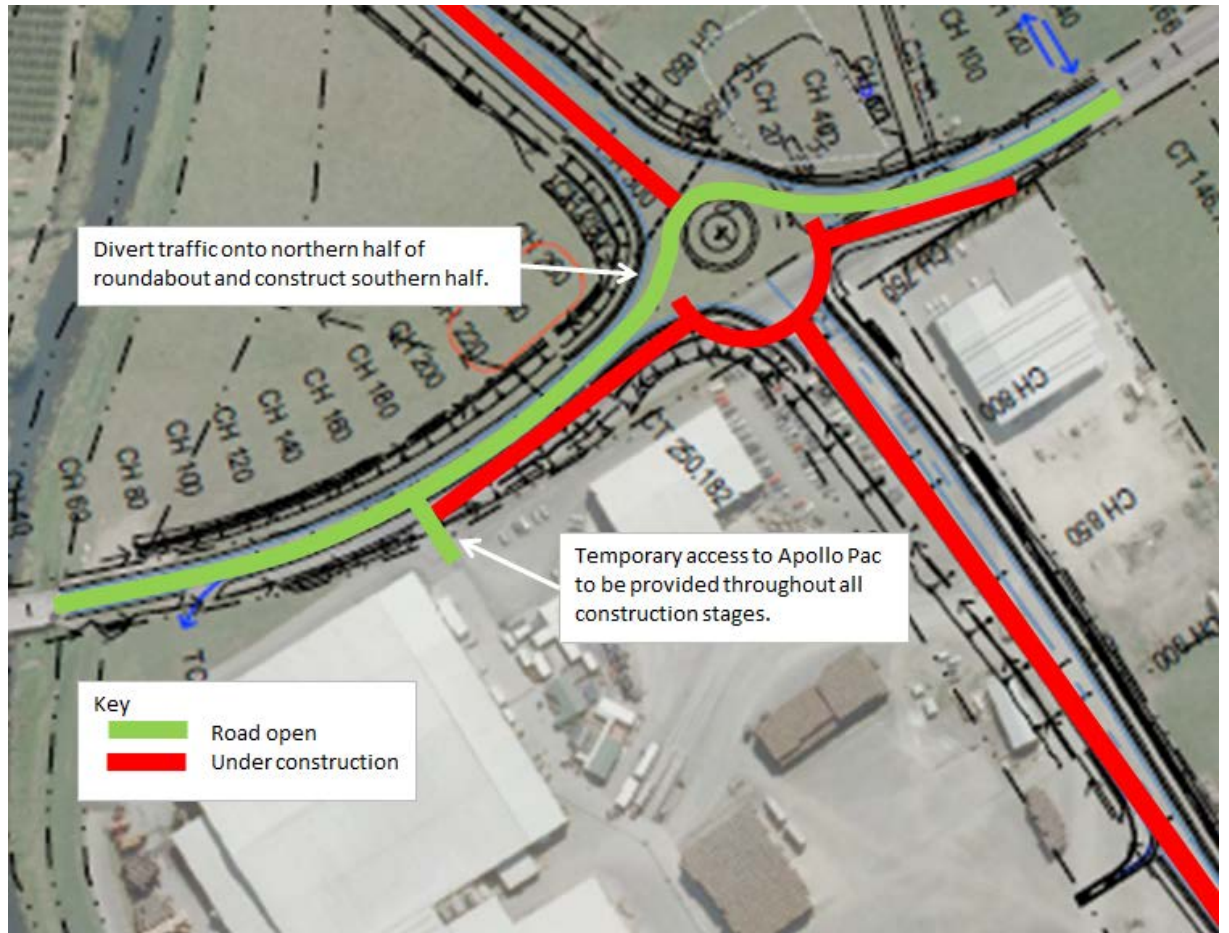
Figure 1 Whakatu Road - Stage 1 Traffic Management



Upon completion of the Stage 1 works, traffic would be directed onto the newly constructed approaches and northern half of the roundabout. This would then enable the construction of the southern half of the roundabout and approaches over the existing Whakatu Road alignment as shown in Figure 2.



Figure 2 Whakatu Road - Stage 2 Traffic Management Layout



The final stage, not shown, is to then open the whole roundabout and approaches to traffic and eventually the WAL itself.

### 3.2.1 Apollo Pac Ltd

One of the most challenging access issues exists at the Apollo Pac site which is located off Whakatu Road and adjacent to the Karamu Stream. Access to this busy industrial site will be directly affected by the construction of the new road and roundabout layout. The revised access arrangements are subject to discussions with Apollo Pac.

To ensure business disruption is minimised, the section of Whakatu Arterial through this site will only be constructed once an alternative access is established.

The potential construction staging illustrated above will provide temporary access arrangements, the details of which are to be established with Apollo Pac during development of the SSTMP.

### 3.3 SH2 / Pilcher Road / Napier Road Roundabout

The construction of the five leg roundabout will be the most complex element in terms of traffic management. This roundabout could be constructed at any stage of the construction period – either towards the end and immediately tied in to the main alignment or at the start and operating without the WAL leg in its initial stages. To avoid driver frustration major works restricting the flow of traffic at this intersection should not be undertaken at the same time as major works restricting traffic flow at the Pakowhai Road Intersection. This is to enable at least one route to remain free of major obstructions for motorists travelling to and from Napier.

A likely sequencing of construction is detailed below:

1. Construct the eastern side of the roundabout off line including constructing the Napier Road and Pilcher Road approaches (it may also be possible to construct part of the north-western side of the roundabout at this stage);
2. Divert SH2 traffic over the newly constructed section, tying in Napier Road from its new approach. The Pilcher Road approach will remain unopened at this stage
3. Construct/complete North-western side of the roundabout, including the tie in to the Whakatu Arterial.

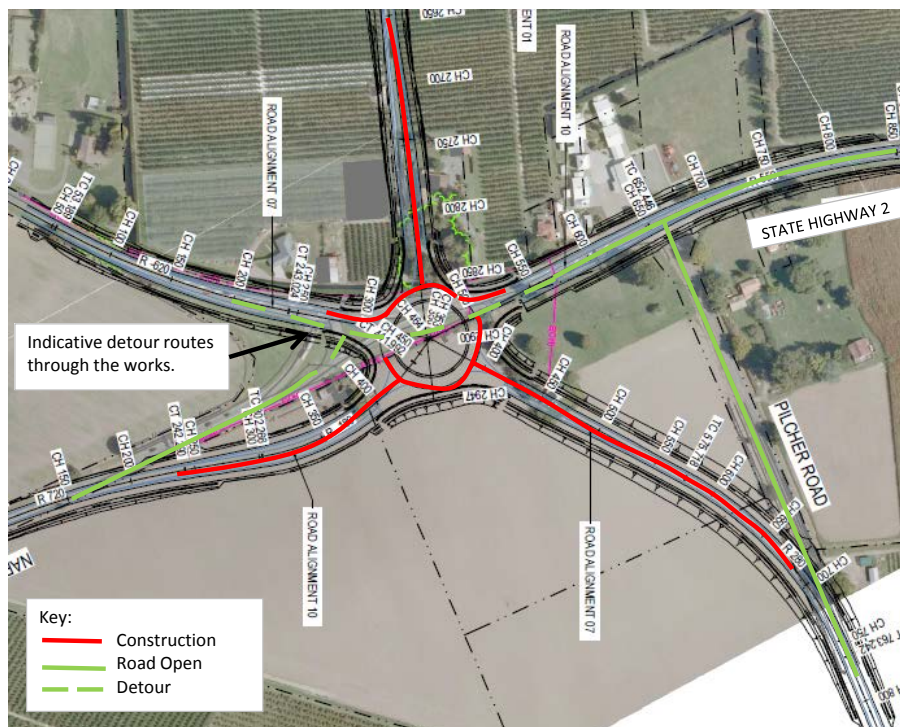
During on line construction of this roundabout various temporary traffic management elements will be in place such as lane diversions and advanced signage.

Motorists will be encouraged to use alternative routes through public information campaigns both prior to works commencing and during construction. Traffic may need to be managed during the peak hours with temporary traffic signals to assist the Napier Road traffic movements. However this will be confirmed through development of the SSTMP.

There are several properties in the immediate vicinity of the works and temporary access will need to be maintained at all times. This can be achieved by the construction of temporary access routes.

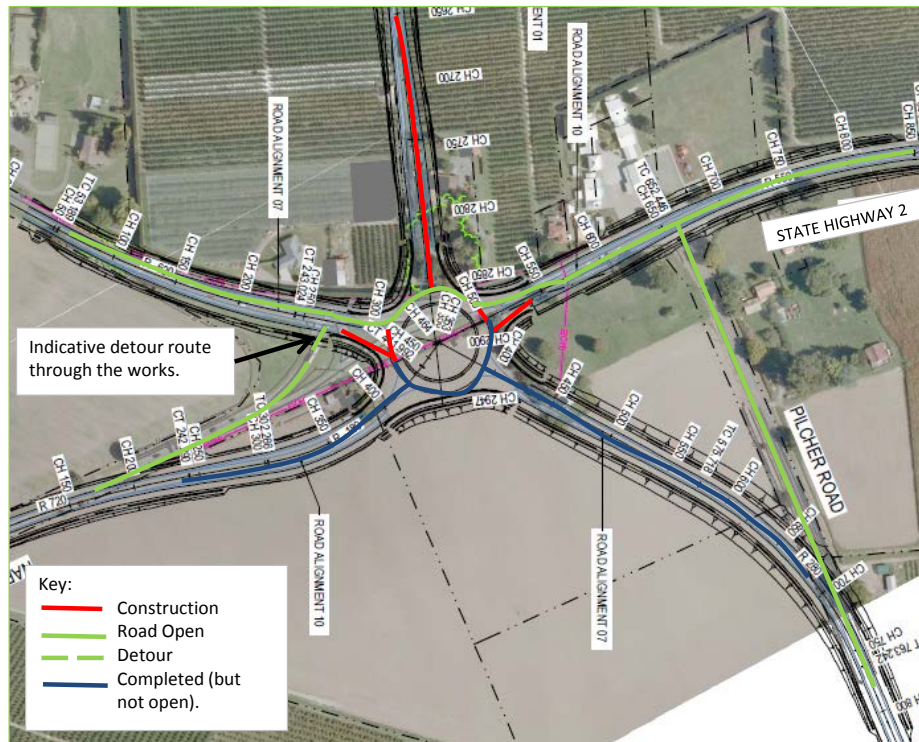
An indicative diversion configuration for construction of on-line works is shown in the Figure 3 below.

Figure 3: SH2-Napier Road Roundabout – Stage 1 Traffic Management



The Figure above shows how construction can proceed during the first phase of the traffic management. The construction of the temporary detour road may enable work on the north-western section of the roundabout to proceed at the same time as the Napier Road and Pilcher Road approaches are built.

Figure 4 SH2 - Napier Road Roundabout - Stage 2 Traffic Management



When the south-eastern half of the roundabout is completed traffic can be diverted onto it whilst the north-western half is completed. Alternatively if the contractor has also constructed part of the north-western half, traffic can be diverted on to this as shown in Figure 4 above and the remaining elements of the roundabout completed.

Any constructed links would remain closed to traffic until the roundabout is substantially completed. The actual staging and sequence of construction will be determined by the appointed contractor through a SSTMP with approval of the RCAs.

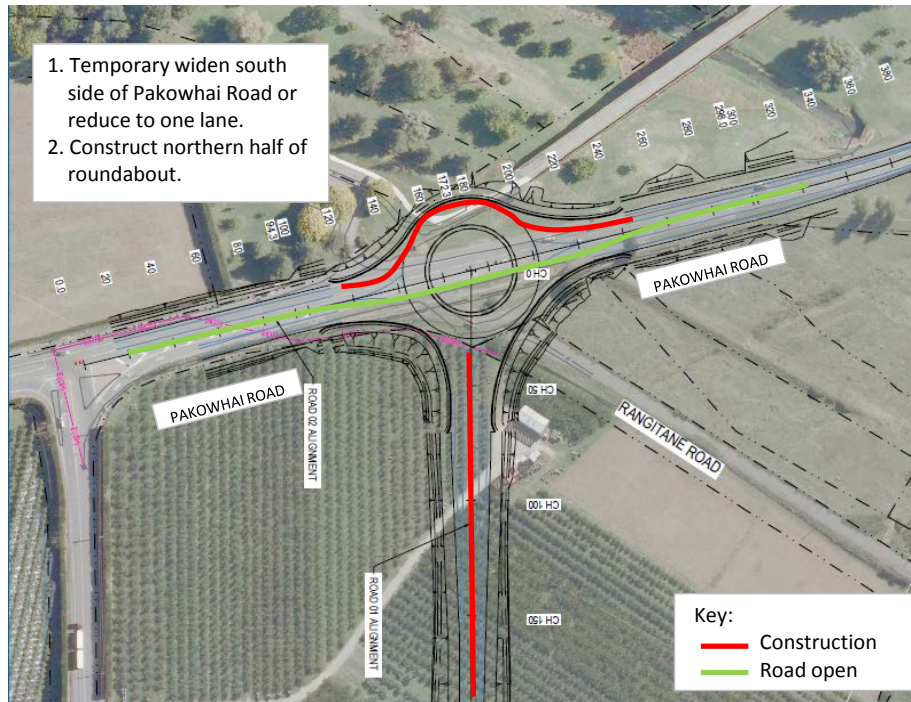
### 3.4 Pakowhai Road / Whakatu Arterial

The section of Whakatu Arterial to the west of the bridge will be constructed through to the intersection tie in prior to construction of the roundabout. The key consideration with respect to this roundabout is managing traffic flows on Pakowhai Road during construction. Two-way flow will need to be maintained which can be achieved through construction phasing and temporary traffic management elements such as lane diversion and advanced signage. These particular initiatives will be confirmed through the development of the SSTMP.

Pakowhai Road forms an appropriate alternative north-south route to SH2. Therefore construction of this roundabout should be scheduled so that the works do not coincide with those for the SH2 and Napier Road Roundabout.

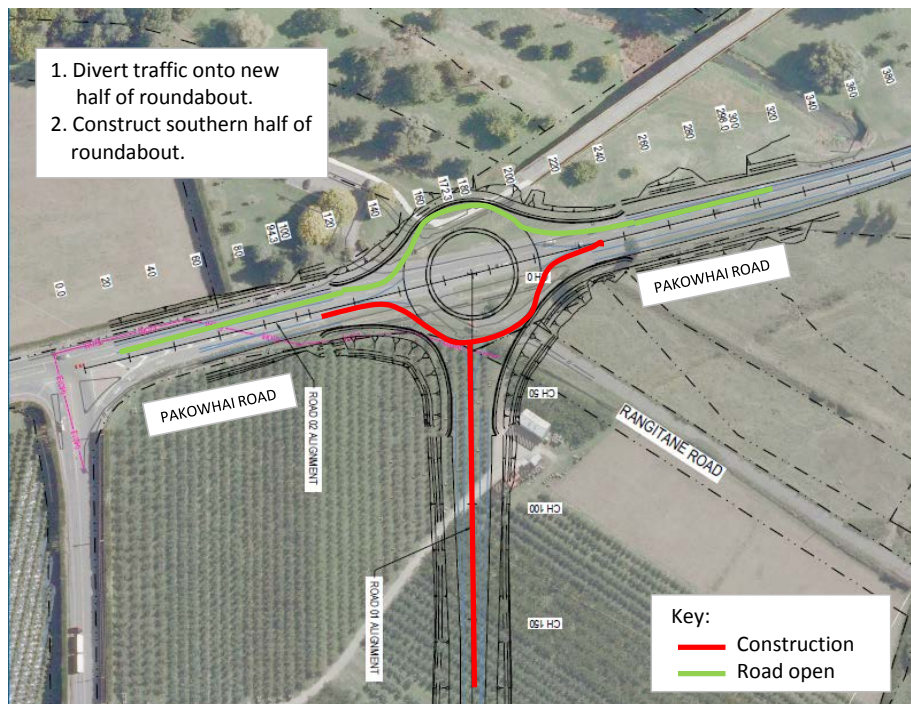
It is anticipated that construction of the western side of the roundabout will be constructed first and traffic shifted to the east, conversely once completed, the newly formed western side will be used and construction of the remainder of the intersection undertaken. This is illustrated in Figure 5 and Figure 6 below.

Figure 5 Pakowhai Road Roundabout - Stage 1 Traffic Management



For Stage 1 traffic is either reduced to one lane shuttle working or the road is temporary widened to accommodate two way traffic past the works.

Figure 6 Pakowhai Road Roundabout - Stage 2 Traffic Management



For stage 2, traffic (in both directions) is diverted onto the completed half roundabout whilst the remaining half is constructed, including the tie in to the arterial road.

### 3.5 Bridge Works

The bridge construction will be scheduled during the initial phases of the construction period and is expected to take between 9 to 12 months. In order to construct the bridge the contractor

is likely to require construction of temporary access roads from either Pakowhai Road along the route of the arterial road or from Ruahapia Road. From the Whakatu Road side temporary access is expected to be off Whakatu Road. Works on the bridge could begin following the construction of the temporary access roads.

Where the temporary roads join the existing roads, intersection sightlines are to be provided together with adequate turning radii and surfacing to accommodate construction plant. Appropriate temporary traffic management measures will be provided when and where necessary.

### 3.6 Railway Crossing

One of the key considerations for construction will be the crossing of the Palmerston North to Gisborne Line (PNGL) railway. A new railway crossing will be constructed on the Whakatu Arterial to the south of the Whakatu Road roundabout.

This work will require cutting the existing rails to provide the isolation for the level crossing circuits in addition to providing the signalling cabling, barriers and control gear. For the road crossing the track bed may need renewal before placing the road surfacing.

Through initial consultation with KiwiRail it has been indicated that the construction of the new railway crossing will be undertaken by KiwiRail (at a cost to the project), which will ensure that any impacts on the rail network can be managed directly and avoided.

Concurrent with the opening of the WAL, the existing railway level crossing on Ruahapia Road will be closed except for pedestrians and cyclists. As with the construction of the WAL rail crossing, its removal could be carried out at weekends when there are no trains running.

## 4. Conclusion

By careful staging of construction works, local access can be maintained and detours kept to a minimum.

After award of the WAL construction contract, the contractor will be required to prepare SSTMPs for each stage and section of the works. These will cover in detail items such as the level of traffic signs, lane widths, measures for pedestrian and cycle access across the works, detour routes and the maintenance of access for impacted properties. SSTMPs will be developed in consultation with affected landowners.

The contractor will not be able to put any traffic management measures in place without the prior approval of either Hastings District Council or NZ Transport Agency as RCA appropriate for the section of road affected.

The two major intersections at each end of the arterial road should not be programmed such that significant traffic management resulting in vehicle delays are concurrent at both sites.

### 4.1 Scope and limitations

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