15. Christchurch to Lincoln Corridor including Prebbleton Summary

15.1 Issues Raised

The issues raised that relate to this corridor have been taken from the Issues and Option Identification Report. The issues have been raised via three methods being, the initial consultation phase, study brief and through technical analysis. The issues that specifically relate to this corridor include:

- Concern regarding the traffic volume on Springs Road especially the volumes through Prebbleton and the effects of the traffic on the safety and ease of accessing and crossing Springs Road in Prebbleton – initial consultation,
- Concern regarding the safety of cyclist travelling between Rolleston and Lincoln – initial consultation,
- Concern regarding the traffic volume along State Highway 75 – initial consultation,
- Capacity issues on Springs Road north of Prebbleton – technical analysis.

15.2 Transport Strategy Works and Hierarchy

The works included in the Transport Strategy for this corridor are over and above the currently programmed works to 2011.

The works included in the Transport Strategy for this corridor are:

- Upgrading the Ellesmere Road, Tosswell Road, Longstaffs Road, Whincops Road route to a wide two lane road,
- Develop Wigram arterial route from the Halswell Junction Road intersection, passing over/under Curletts Road to link with upgraded route of Magdala Place / Birmingham Drive / Wrights Road / Matipo Street to Blenheim Road,
- Possible future south facing ramps from the new link around Awatea / Dunbars Road to the proposed Southern Motorway Extension,
- Extension of Haytons Road at Washbournes Road to Alloy Place via a new railway level crossing,
- All intersections to have priority intersections with priority to the route with the following exceptions:
    - Convert the intersection of Treffers Road and Wigram Road to allow for left turns in and out of Treffers Road only.
    - Construction of a roundabout at the intersection of Haytons Road and Wigram Road.
    - Construction of a roundabout at the intersection of Halswell Junction Road/Whincops Road.
    - Construction of a roundabout at the intersection of Wigram Road/New Link/Awatea Road/Dunbars Road.
    - Construction of a roundabout at the intersection of Whincops Road/Quaifes Road.
- The use of Birchs Road as a route for alternative transport modes such as Public Transport and walking and cycling as provided by the current “Christchurch to Little River Rail Trail” facility.

The works included in the Transport Strategy for this corridor are shown in Figure 29.

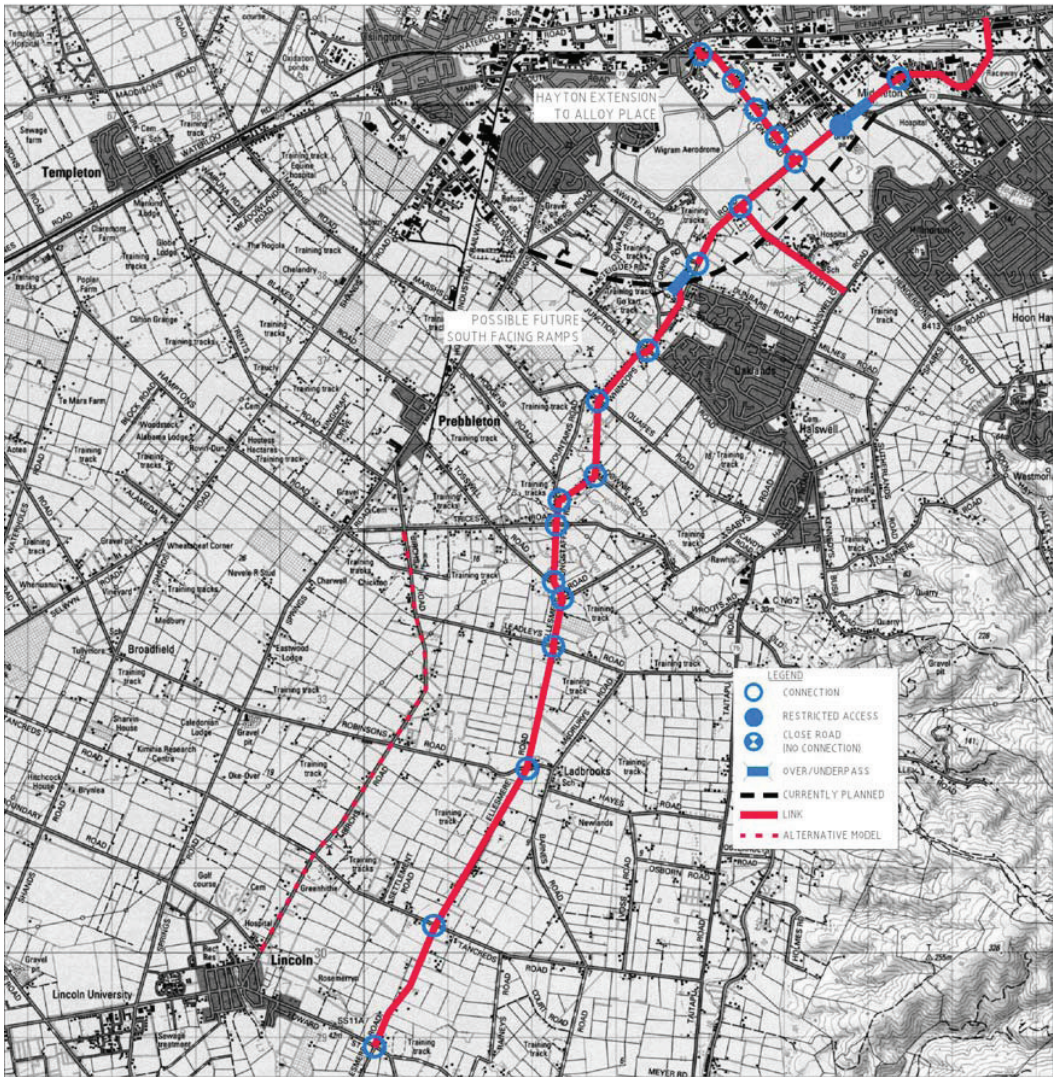

Figure 29

Christchurch to Lincoln Corridor Transport Strategy Works

These works are related to the hierarchy for the greater area in that the Ellesmere Route would become the major link in the corridor and hence would become the District arterial for the area in the hierarchy. This means that the route would be developed to provide for travel between Christchurch and Lincoln. The suggested form (i.e. cross section) and amount of access to the Ellesmere route has specifically been selected to be consistent with the District arterial function. The suggested form will provide for travel along the route with minimised interference from traffic accessing the route.

Springs Road would also be a District Arterial between Prebbleton and Lincoln and also between Prebbleton and Christchurch in the Hierarchy. However, Springs Road would be developed as more of a road for travel between Prebbleton and its surrounds than a road for travel from Christchurch, through Prebbleton and to areas like Lincoln and beyond. The existing cross section is considered appropriate for this function hence, no works have been developed for Springs Road.

There is demand for an alternative modes route between Christchurch and Lincoln. Birchs Road is seen as the alternative modes route providing for buses, walking and cycling, this in large has been developed through the installation of an off carriageway walkway and cycleway connecting between Lincoln and Prebbleton which will then connect to Hornby. Through a recent Structure Plan process options were considered for a Park and Ride facility at

Lincoln. The preferred option for such a facility is to the north of Lincoln on Boundary Road close to the Birchs Road public transport route.

By promoting the Ellesmere Road as the route to travel between Christchurch and Lincoln for private vehicles it will reduce traffic volumes on Springs Road and Birchs Road thereby making them more alternative mode friendly. In addition the proposed second stage of the Southern Motorway extension, which has an interchange connection at the Shands Road/Marshs Road intersection, will draw traffic from Springs Road and onto Shands Road again reducing the demand on Springs Road. It is noted that a new road link between Springs Road and Shands Road from Robinsons Road to Hamptons Road was tested but was found not to generate significant traffic to be justifiable.

The Transport Strategy hierarchy for this corridor is shown in Figure 30.

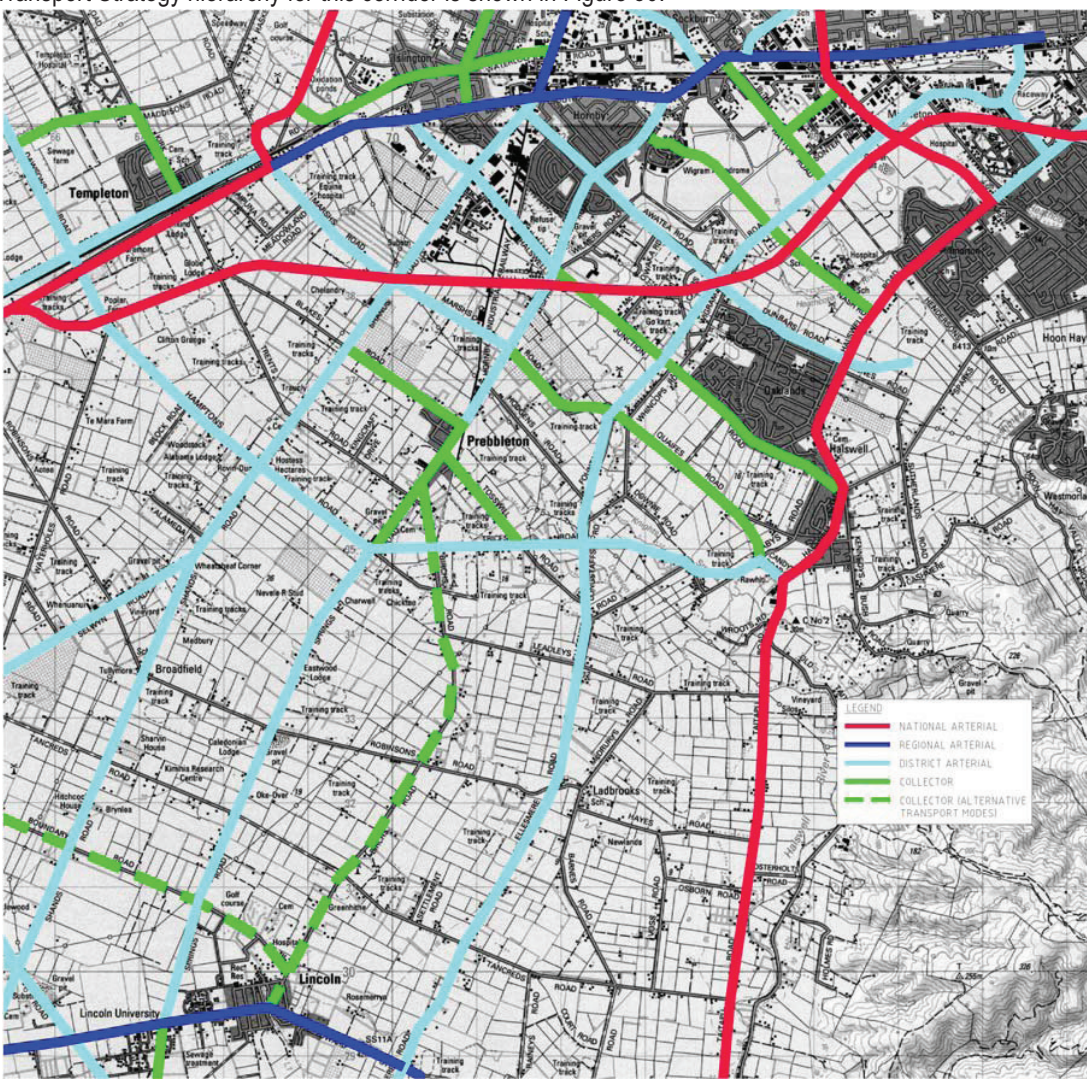

Figure 30

Christchurch to Lincoln Corridor Transport Strategy Hierarchy

The analysis carried out for this study has enabled the following comments to be made regarding the Transport Strategy:

- Due to the significant growth in population and employment predicted there will be a significant increase in the demand for travel. The predicted increase in trips is in the order of 75% for the study area,
- Springs Road north of Prebbleton in both the Urban and Rural Areas is not of a sufficient standard to carry the predicted traffic volumes,

- If Springs Road were upgraded to carry the additional traffic this would result in additional pressure on Main South Road/Blenheim Road in the Sockburn Area. Main South Road/Blenheim Road in the Sockburn Area will receive some relief from the Christchurch Southern Motorway Extension, however, predicted traffic volumes are still high,
- A connection of the Ellesmere Route to the Christchurch Southern Motorway Extension has been considered in detail, however, with this connection in place the traffic volumes on the western end of the Motorway and eastern end of Brougham Street would be very high and are predicted to exceed the capacity of the Motorway and Brougham Street before 2021. A full connection of the Ellesmere Route to the Motorway is not considered to be sustainable into the future, however the benefits of south facing ramps at this location are being considered as a possible future option,
- It is considered that a major increase in traffic volumes through Prebbleton, if allowed, would have a significant detrimental impact on the social and environmental values in Prebbleton. It would require major upgrades, e.g. signals or roundabouts, to a number of the intersections in Prebbleton which would impose delays on traffic travelling along Springs Road. Imposing these delays on Springs Road is not consistent with the function of a district arterial,
- If Springs Road were to be upgraded it would require upgrades, e.g. signals or roundabouts, to a number of the intersections in Prebbleton which would impose delays on traffic travelling along Springs Road. Imposing these delays on Springs Road, which would be regional arterial if upgraded, is not consistent with the function of a regional arterial,
- Ellesmere Road can be upgraded to provide sufficient capacity, together with Longstaffs Road and the other portions of the route,
- The Ellesmere Road Route connects directly with a proposed new bypass/collector road south of Lincoln, thereby encouraging the use of this new road and improving access to the east, south of Lincoln including the University. It also removes some traffic from the roads through the centre of Lincoln.

15.3 Traffic Effects

The traffic effects in terms of vehicle kilometres and minutes travelled have been determined for the Transport Strategy network as a whole. The effects of the works associated with this corridor cannot easily be isolated. Hence, specific details of the effects for this corridor are limited to changes in traffic volumes. Some of the changes in traffic volumes in this corridor are related to works for other corridors, hence the volumes quoted are not necessarily a direct result of the Transport Strategy works for this corridor.

Table 30 is a summary list of the traffic volumes on major links affected by the Transport Strategy works for the corridor.

Traffic Volume Location	2001 (veh per day)	2021 (veh per day)
Birmingham Drive south of Wrights Road	8,900	16,900
Wigram Road south of Haytons Road	3,500	16,700
Realigned Wigram Road to Ellesmere Road south of Awatea Road	NA	12,300
Whincops Road south of Halswell Junction Road	NA	11,000
Longstaff Road south of Trices Road	600	3,400
Ellesmere Road south of Leadleys Road	2,800	5,200
Ellesmere Road south of Tancreds Road	1,600	3,600
Springs Road south of Main South Road	18,000	21,100
Springs Road south of Amyes Road	14,600	15,100
Spring Road south of Halswell Junction Road	10,300	10,500
Springs Road south of Blakes Road	9,200	10,300
Springs Road south of Hamptons Road	4,500	6,300
Springs Road south of Boundary Road	4,700	6,500

Table 30

Christchurch to Lincoln Corridor Transport Strategy Major Link Traffic Volumes

15.4 Social and Environmental Effects

Existing/potential land uses: The Christchurch to Lincoln Corridor element of the Transport Strategy utilises existing roads as well as involving the creation of new roads. The existing roads adjoin a range of different land uses from industrial and service activities, residential, recreational and rural activities. The new roads outlined in this element of the Strategy principally affect rural and rural-residential land uses. The purchase of significant amounts of rural land will be necessary for these new roads. Recent rural-residential developments may require new roads to be aligned around them to minimise adverse social effects.

Designations: Designations will be required for new roads, road widening, and to upgrade intersections, including an important new designation to establish new roads for a link between Whincops Road and Halswell Junction Road and the Magdala – Wigram connection.

Property access severance: Changes to roading hierarchies will seek to consolidate access onto key arterial routes and avoid the creation of new accesses where possible.

Landscape characteristics/quality: The study area is flat terrain consisting predominantly of grassed open farmland, rural-residential allotments, scattered buildings, some shelterbelts and trees. The Strategy involves widening existing roads, establishing new roads, and constructing new structures like roundabouts that will create local adverse visual effects. The Strategy will also require the removal or relocation of existing features in the landscape such as trees and vegetation, dwellings and other buildings, fencing, lighting and power poles.

Mitigation of effects on landscape: To ensure that the roading will be integrated into the existing environment areas of roading improvements will be suitably landscaped where appropriate, as will the intersections that are to be closed. Design and landscaping will assist in mitigating some of the adverse effects arising from the establishment of the new roads, however such measures will have limited positive impacts on raised structures such as the overpass/underpass at Curletts Road, which due to the flat nature of the terrain will change the local landscape of the affected area.

Geological/geotechnical considerations: New roads, widening, and changes at intersections will require detailed geotechnical investigations during the design phase of roading improvements. This is particularly important when establishing new structures such as overpasses/underpasses.

Drainage: The new road link will pass over or near to several waterways which are tributaries to the Halswell River.

Noise: There will be temporary noise effects during the construction phase. New roads will introduce vehicle noise to some houses currently distant from high-volume traffic flows. Other roading improvements will facilitate higher traffic volumes with a consequent rise in traffic-generated noise or increase noise levels at the notional boundaries of existing dwellings by bringing vehicle paths closer to existing dwellings. An increase in traffic-generated noise is to be expected on routes with existing roading designations, the purpose of which is to carry traffic. Increases in traffic-generated noise levels on the new portions of road can be mitigated in areas of higher density residential use through the employment of buffers or barriers.

Maori, archaeological, cultural and heritage sites: There are no known sites of Maori, cultural, historical or archaeological significance affected by the Strategy. However, the Halswell River, its tributaries such as Knights Stream and the surrounding area are well known as significant sites and areas to Ngai Tahu. Therefore, it is recommended that further consultation with the relevant parties be undertaken at a more appropriate time such as the scheme assessment stage.

Social effects, social severance and property severance: This element of the Strategy seeks to minimise social severance within settlements by ensuring existing links are maintained while new roads bypass settlements. The potential removal of some dwellings and/or reduction of the size of properties will have adverse social effects for affected owners and occupiers. At some intersections it is proposed that road links be closed to provide priority to key arterial routes. New roads will lead to the separation of land that is currently in the same ownership or otherwise provide a barrier between neighbours. There will be considerable adverse social effects for the affected owners and occupiers.

Public transport/cycle: The improved highway and roading network will enable public transportation to operate more efficiently. There may also be opportunities to provide for separate cycle lanes or at least improvements to the shoulders of the carriageway and footpaths. By creating a clearer hierarchy of roads, traffic travelling between Christchurch and Lincoln will be encouraged to utilise Ellesmere Road and Shands Road , thereby reducing the level of use of other roads like Springs Road and Birchs Roads making them more suitable for alternative travel modes such as public transport and cycling.

Consultation to date: The following topics were raised in the consultation process undertaken in 2006:

- New roads, including increases in noise. Strong opposition to the use of Fountains Road as an arterial route led the Management Team to redesign this route so as to utilise Whincops Road. This could result in Whincops Road residents taking a greater interest in the projects associated with this element.
- Ecological impacts around the Fountains Road area. Again the use of Whincops road instead may decrease levels of public concern regarding this potential effect.

15.5 Staging and Timing (Also refer section 0)

Providing a new link between Wigram Road and Halswell Junction Road is required to reduce traffic on Springs Road, to and through Prebbleton and to provide a strong link further south to Lincoln. The construction of the section between Wigram Road and Halswell Junction Road is triggered by the LOS reaching mid E on Springs Road between Halswell Junction Road and Prebbleton. This is estimated to be within the medium term.

Upgrading work of the Ellesmere Road route south of Halswell Junction Road including Whincops Road and Longstaffs Road to Lincoln is driven by hierarchy and available road width to cater for the proposed traffic volumes including cyclists. The existing width on Ellesmere Road is approximately 6.0m and the 2001 traffic volume south of Leadleys Road is 2800 vpd and south of Tancred Street is 1600 vpd. The widening to 10.0m along the route to cater for increased traffic and cyclists could be undertaken as a single project, or the width increased in stages as the traffic volume increases.

While the traffic volume will slowly increase between 2001 and 2016, the construction of the new link between Wigram Road and Halswell Junction Road and upgrading to Trices Road will be the main trigger point.

The upgrading of Ellesmere Road south of Trices Road is not required to cater for increased traffic until after 2021. Widening could be carried out prior to 2021 to cater for cyclists, however this would depend on a successful funding application.

15.6 Response to Issues Raised

From the analysis carried out for this study the following points have been made in response to the issues raised:

- The suggested works solve the capacity issues raised for Springs Road in the longer term as well as removing some traffic from the Sockburn area thereby helping to decrease congestion in the area,
- The suggested works will reduce the volume of traffic travelling through Prebbleton, hence, as a result the access to, and the ability to cross Springs Road, will improve. In addition the proposed new Western Orbital route (refer Section 17) between State Highway 1 and State Highway 75 utilising Hamptons Road and Trices Road will assist in distributing traffic to the Ellesmere Road and Shands Road routes to Christchurch.

16. Christchurch to Tai Tapu Corridor Summary

16.1 Issues Raised

The issues raised that relate to this corridor have been taken from the Issues and Option Identification Report. The issues have been raised via three methods being, the initial consultation phase, study brief and through technical analysis. The issues that specifically relate to this corridor include:

- Concern regarding the traffic volume along State Highway 75 – initial consultation,
- Concern regarding the ability to access and cross State Highway 75 – initial consultation,
- Consider a number of forms for State Highway 75 including:
    - A two lane limited access road with passing lanes – study brief.
    - A four lane limited access road – study brief.
    - A four lane controlled access road with service lane frontage roads – study brief.
    - A new two lane limited access road – study brief.
    - A combination of the above forms – study brief.
    - A connection between the Christchurch Southern Motorway near Halswell Junction Road and State Highway 75 near Old Tai Tapu Road – study brief.
- Capacity issues at intersections on Halswell Road including Tankerville Street and Nash Road – technical analysis.

16.2 Transport Strategy Works and Hierarchy

The works included in the Transport Strategy for this corridor are over and above the currently programmed works to 2011. The planning work that has previously been carried out for this corridor, specifically State Highway 75, by Transit New Zealand has been analysed during this study and considered appropriate and sufficient for the corridor south of Halswell. The works Transit New Zealand are considering during their standard practice planning process includes the installation of passing lanes approximately halfway between Halswell and Tai Tapu plus other minor safety works as appropriate. All of these works have been considered and analysed in detail in previous studies. These works have been reconsidered during this study specifically in the context of the hierarchy developed during this study. It is suggested as part of the Transport Strategy that the works be carried out as per the recommendations of the previous studies.

Other works have been considered for State Highway 75 from Halswell north. The works included in the Transport Strategy for this corridor are:

- Upgrading of Halswell Road to a median divided four lane cross section from Dunbars Road to the existing four laned section of road at Curletts Road,
- The four laning requires that the form of many intersections along the route be modified. The changes suggested have been listed below from north to south:
    - Convert Tankerville Road to allow for left turns in and out only.
    - Convert Kinnaird Place to allow for left turns in and out only.
    - Convert Guise Lane to allow for left turns in and out only.
    - Construct right turn bays in the centre median to allow for all movements in and out of Warren Crescent north.
    - Construct right turn bays in the centre median to allow for all movements in and out of Rowley Avenue.
    - Convert Warren Crescent South to allow for left turns in and out only.
    - Convert Kinnaird Place to allow for left turns in and out only.
    - Convert Cardinal Drive to allow for left turns in and out only.
    - Convert Templeton Road to allow for left turns in and out only.

- Deviate Henderson's Road to intersect with Halswell Road at the intersection with the northern Aidanfield Road. The northern Aidanfield Road is to be created as part of the Aidanfield sub divisional process. Construct a set of signals at the new cross roads.
- Construct a right turn bay in the centre median to allow for right turn movements into Nash Road as well as all left turn movements.

The works are not specifically required to provide capacity for the projected traffic volumes as the alternative routes of Sparks Road and the new Wigram Road link provide additional capacity. The works have primarily been promoted as a means of providing an efficient public transport system. The Halswell Road/Lincoln Road route has been identified as a key public transport, namely bus route, and therefore the road form needs to allow for the efficient passage of buses. By developing a four lane road it is easier for buses to enter the traffic stream after picking up passengers and the travel speed along the road will be higher. An example of this type of scenario occurring is the recent upgrade of Fendalton Road, however, the detailed design is not part of this study.

The works included in the Transport Strategy for this corridor are shown in Figure 31.

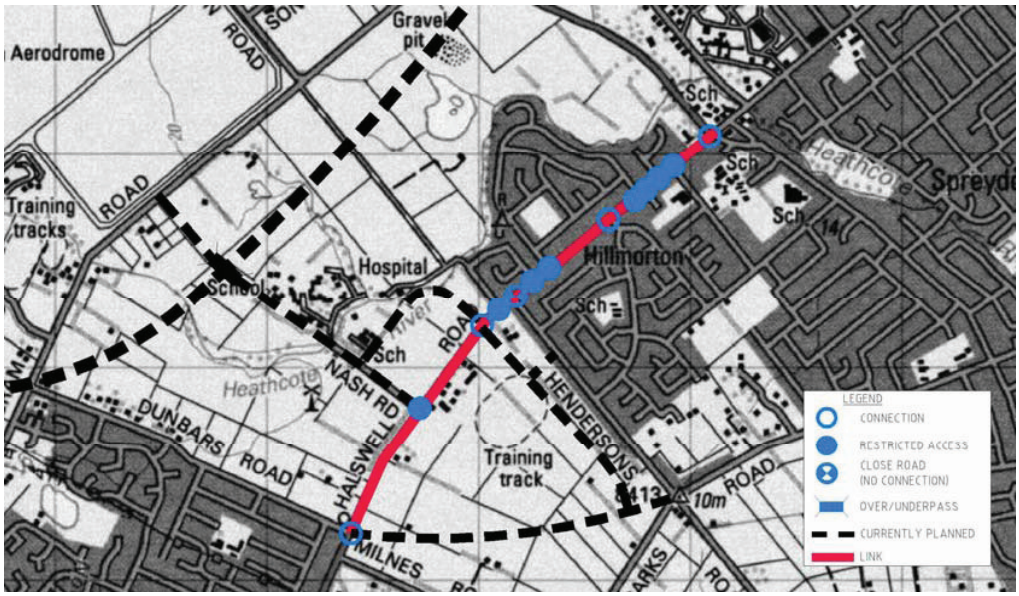

Figure 31

Christchurch to Tai Tapu Corridor Transport Strategy Works

These works are related to the hierarchy for the greater area in that the major link in the corridor (State Highway 75) will become the national arterial for the area in the hierarchy. The works will enable State Highway 75 to better perform its function as a national arterial in the hierarchy.

The Transport Strategy hierarchy for this corridor is shown in Figure 32.

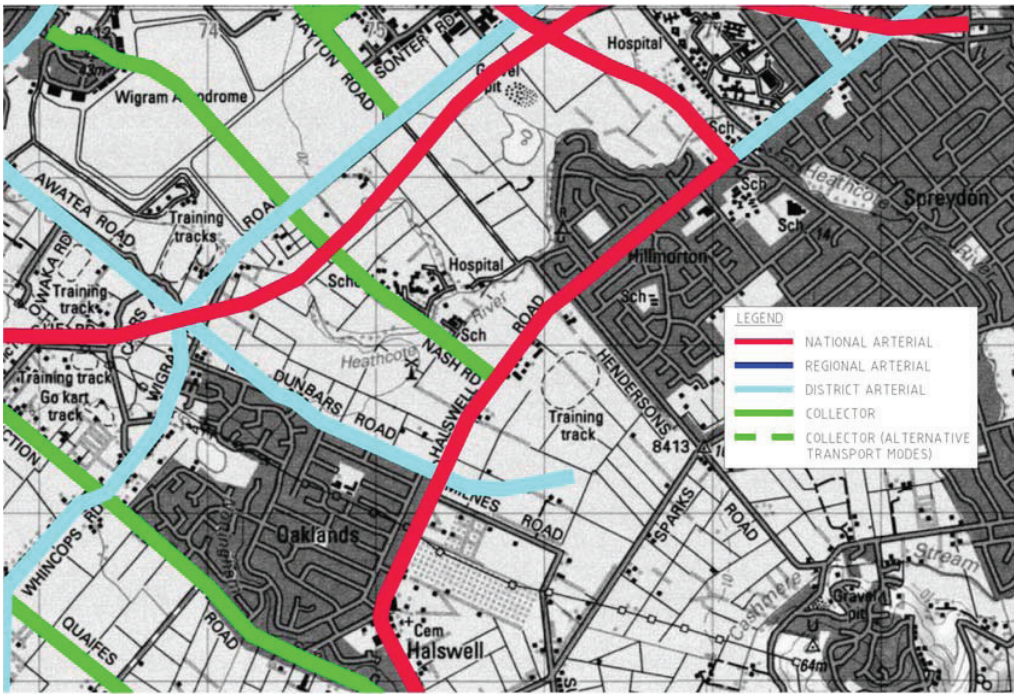

Figure 32

Christchurch to Tai Tapu Corridor Transport Strategy Hierarchy

The analysis carried out for this study has enabled the following comments to be made regarding the Transport Strategy:

- Due to the significant growth in population and employment predicted there will be a significant increase in the demand for travel. The predicted increase in trips is in the order of 75% for the study area,
- The installation of passing lanes is consistent with Transit New Zealand's National State Highway Strategy of installing passing lanes at nominal 5km spacings on routes with traffic volumes in excess of 4,000 vehicles per day in that the traffic volumes are predicted to be above the criteria,
- There is considerable development being considered for the area in the near future. As a result of this development, there are a number of new roads that may be constructed. These roads have been assumed to be in place as part of the Do Minimum. Should these roads not be constructed the situation will change with respect to the demand at some intersections and as a result there may be a need to review the strategy. The most significant road in this respect is the connection between the intersection of Halswell Road/Dunbars Road and the intersection of Sparks Road/Hendersons Road. This link has been discussed in more detail in the Christchurch Outer Suburbs and South Western Orbital Corridor Summary,
- The connection between State Highway 75 and the Christchurch Southern Motorway Extension has been found to attract very low traffic volumes due to the increased travel distance over the existing State Highway 75 route.

16.3 Traffic Effects

The traffic effects in terms of vehicle kilometres and minutes travelled have been determined for the Transport Strategy network as a whole. The effects of the works associated with this corridor cannot easily be isolated. Hence, specific details of the effects for this corridor are limited to changes in traffic volumes. Some of the changes in traffic volumes in this corridor are related to works for other corridors, hence the volumes quoted are not necessarily a direct result of the Transport Strategy works for this corridor.

Table 31 is a summary list of the traffic volumes on major links affected by the Transport Strategy works for the corridor.

Traffic Volume Location	2001 (veh per day)	2021 (veh per day)
Halswell Road south of Curletts Road	23,500	24,600
Halswell Road south of Hendersons Road	18,000	22,400
Halswell Road south of Dunbars Road	13,600	14,800
Halswell Road south of Sparks Road	5,200	5,400
Halswell Road south of Candys Road	5,900	8,000
Halswell Road south of Hayes Road	4,100	5,800
Sparks Road south of Hoon Hay Road	4,900	10,400
Sparks Road south of Hendersons Road	7,200	7,100
Wigram Road – Refer to the Christchurch to Lincoln Corridor Summary		

Table 31

Christchurch to Tai Tapu Corridor Transport Strategy Major Link Traffic Volumes

16.4 Social and Environmental Effects

Existing/potential land uses: The Christchurch to Tai Tapu Corridor element of the Transport Strategy utilises existing roads as well as involving the creation of a new roading link at the Hendersons Road/Halswell Road intersection. The existing roads adjoining land uses range from residential, recreation and rural activities. The new roads outlined in the Strategy principally affect rural and rural-residential land uses. The purchase of some rural land will be necessary for the new road. Recent rural-residential developments may require new roads to be aligned around them to minimise adverse social effects.

Designations: Designations will be required for the new roading link between Hendersons Road and Halswell Road and to upgrade intersections.

Property access severance: This will be an issue with the construction of a four-lane median divided road. Existing properties will have access to the highway in one direction only and cross movements will be limited to the main intersections and u-turn slots. Changes to roading hierarchies will seek to consolidate access onto key arterial routes and avoid the creation of new accesses where possible.

Landscape characteristics/quality: The study area is flat terrain consisting predominantly of residential buildings and grassed open farmland. The relatively minor increases in carriageway widths and intersection improvements over these areas will not result in adverse visual effects of any significance. The Strategy will require the removal or relocation of existing features in the landscape such as trees and vegetation, fencing, lighting and power poles.

Mitigation of effects on landscape: To ensure that the roading will be integrated into the existing environment areas of roading, improvements will be suitably landscaped where appropriate, as will the intersections that are to be closed. Design and landscaping will assist in mitigating some of the adverse effects arising from the establishment of the new roads.

Geological/geotechnical considerations: The new road, widening, and changes at intersections will require detailed geotechnical investigations during the design phase of roading improvements.

Drainage: There are no sensitive waterbodies within the vicinity of the land affected by this element of the strategy.

Noise: There will be temporary noise effects during the construction phase. The new road will introduce vehicle noise to some houses, currently distant from high-volume traffic flows. Other roading improvements will facilitate higher traffic volumes with a consequent rise in traffic-generated noise or increase noise levels at the notional boundaries of existing dwellings by bringing vehicle paths closer to existing dwellings. An increase in traffic-generated noise is to be expected on routes with existing roading designations, the purpose of which is to carry traffic. Increases in traffic-generated noise levels on the new portions of road can be mitigated in areas of higher density residential use through the employment of buffers or barriers.

Maori, archaeological, cultural and heritage sites: There are no known sites of Maori, cultural, historical or archaeological significance affected by the Strategy.

Social effects, social severance and property severance: At some intersections it is proposed that road links be closed or restricted to left in/left out access only to provide priority to key arterial routes. The new section of Hendersons Road will lead to the separation of land that is currently in the same ownership or otherwise provide a barrier between neighbours. There will be considerable adverse social effects for the affected owners and occupiers. The closure or restricted access to some intersections will cause disruption for persons who presently utilise these intersections.

Public transport/cycle: The improved highway and roading network will enable public transportation to operate more efficiently.

Consultation to date: No topics were raised in the consultation process undertaken in 2006 which specifically affect this element of the Strategy, although general matters such as public transport, cycling, access to businesses and noise effects may be of relevance.

16.5 Staging and Timing (Also refer section 0)

The four laning of Halswell Road between Curletts Road and Dunbars Road is required to provide capacity, and has been included to provide an efficient public transport route. The 2001 traffic volume south of Henderson Road is 18,000 vpd and the predicted 2021 traffic volume is 22,400 vpd. This work is an integral part of work within the Christchurch Southern Access corridor and the Christchurch to Lincoln corridor. For this reason the work should be carried out within the medium term.

16.6 Response to Issues Raised

From the analysis carried out for this study the following points have been made in response to the issues raised:

- Other works such as those for the Christchurch to Lincoln Corridor have a significant effect on the traffic volumes along this corridor, to the extent that there is not a significant increase in traffic volumes along State Highway 75,
- The intersection modifications and improvements along with the managed traffic volumes will have a significant effect on the ability to access and cross State Highway 75,
- Slightly more travel on local roads will be required, however, given the grid like nature of the network there will be very little difference in travel distance and time,
- The exception to this is those properties with access directly onto State Highway 75 between Curletts Road and Dunbars Road. These properties will have to travel further and hence take more time due to the turning restrictions on State Highway 75. These effects have been considered against the safety and cost implications of providing for all movements. The suggested works are considered to be the most appropriate for the corridor,
- The upgrades to State Highway 75 will result in improved travel speeds and passing opportunities,
- All of the forms to be considered as specified in the study brief have been considered including upgrades to the existing route, use of alternative roads, construction of new roads and combinations of all. It has been found that the suggested form is the most appropriate,
- The suggested improvements remove the intersection capacity issues predicted during the technical analysis.

17. Christchurch Outer Suburbs and South Western Orbital Corridor Summary

17.1 Issues Raised

This section doesn't include the major roads in the Christchurch Outer Suburbs and the South Western Corridor. The major roads through the Christchurch Outer Suburbs and the South Western Corridor are covered in other summary sections. Refer to the Christchurch Southern Access Corridor, Christchurch to Burnham Corridor, Christchurch to Lincoln Corridor, or Christchurch to Tai Tapu Corridor as they cover the major links.

The issues that specifically relate to the suburbs and corridor include:

- Consider potential routes between State Highway 1 and State Highway 75 with respect to the function of roads in the hierarchy – study brief.

The technical analysis did highlight that the Amyes Road, Awatea Road, Dunbars Road and new link from the intersection of Dunbars Road/Halswell Road to the intersection of Hendersons Road/Sparks Road is an attractive route between the Halswell and Hornby areas. It was therefore determined that this route should be considered from a hierarchy and capacity perspective.

17.2 Transport Strategy Works and Hierarchy

The works included in the Transport Strategy for this corridor are over and above the currently programmed works to 2011. The effects of the major roads through the area has been covered in other corridor summaries namely the Christchurch Southern Access Corridor, Hornby to Burnham Corridor, Christchurch to Lincoln including Prebbleton Corridor and Christchurch to Tai Tapu Corridor. The works and their effects for these corridors have been discussed in other summaries hence have not been repeated here. The relationship between the works for the other corridors and those in this summary has been covered in this summary where necessary.

The works included in the Transport Strategy for this corridor are:

- Upgrading the Waterholes Road, Hamptons Road, Trices Road, Sabys Road, Candys Road route to a wide two lane cross section so that it can function as a District Arterial connecting State Highway 1 and State Highway 75,
- Construct a new length of road that bypasses the sharp corner at the Knights Steam Bridge at the junction of Trices Road and Sabys Road. This bypass would be a short bypass that eases the corner only,
- Construct a new length of road from the bend in Quaifes Road approximately 650m from Sabys Road to the intersection of Sabys Road and Quaifes Road,
- Modify the intersections along the route as follows:
    - Convert the intersection of Waterholes Road and Hamptons Road so that there is priority to travel between Waterholes Road (north) and Hamptons Road and Waterholes Road (south) forms a T intersection.
    - Convert the intersection of Hamptons Road (west) and Trices Road so that Trices Road has priority to Springs Road and Hamptons Road (east) forms a T intersection with Trices Road.
    - Convert the intersection of Trices Road and Birchs Road so that Trices Road has priority through the intersection.
    - Convert the intersection of Trices Road and Tosswill Road so that Trices Road has priority through the intersection.
    - Convert the intersection of Trices Road and Longstaffs Road so that Longstaffs Road has priority through the intersection. This is associated with the Christchurch to Lincoln Corridor Works.
    - Convert the intersection of Trices Road and Ellesmere Road so that Trices Road has priority through the intersection.
    - At the intersection of Sabys Road, Candys Road and the Quaifes Road deviation maintain priority to Sabys Road.

The works included in the Transport Strategy for this corridor are shown in Figure 33.

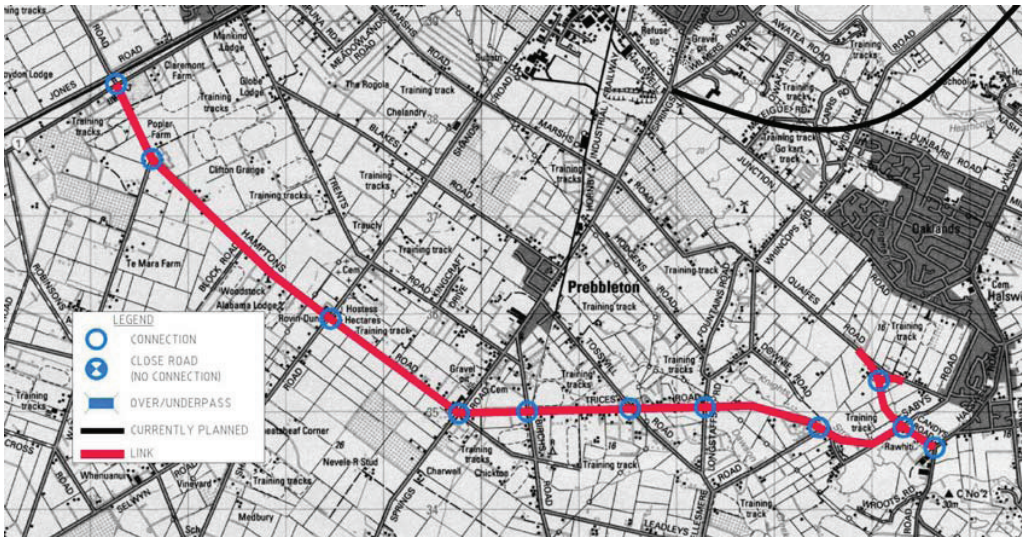

Figure 33

Christchurch Outer Suburbs and the South Western Corridor Transport Strategy Works

These works are related to the hierarchy for the area in that the Waterholes Road, Hamptons Road, Trices Road, Sabys Road, Candys Road route would become the district arterial for the area in the hierarchy. This means that the route would be developed to provide for travel between State Highway 1 and State Highway 75. The suggested form (i.e. cross section) and amount of access to the route has specifically been selected to be consistent with the district arterial function. This route essentially becomes an inner orbital route between State Highway 1 and State Highway 75 picking up Prebbleton, in a similar manner to the existing outer arterial route between State highway 1 at Burnham and State Highway 75 at Tai Tapu passing through Lincoln.

It is suggested that the Amyes Road, Awatea Road, Dunbars Road route become a District Arterial in the hierarchy. The route would therefore provide for travel between Halswell and Hornby. The works necessary for the route to perform this function are not associated with the suburban roads but with the major roads. The works for these major roads have been covered in other Corridor Summaries. Further to this it is suggested that the Marshs Road, Quaifes Road route, between Springs Road and Sabys Road, become a Collector in the hierarchy. This route would collect traffic from the residential and industrial areas accessing it and distribute the traffic to intersecting arterials, i.e. State Highway 1, the Christchurch Southern Motorway, the Ellesmere Road route and State Highway 75.

The Transport Strategy hierarchy for this corridor is shown in Figure 34.

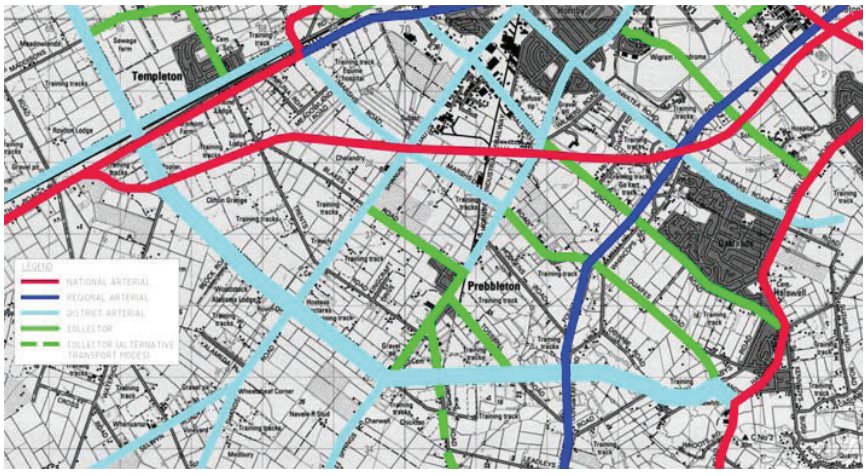

Figure 34

Christchurch Outer Suburbs and the South Western Corridor Transport Strategy Hierarchy

The analysis carried out for this study has enabled the following comments to be made regarding the Transport Strategy:

- The priority changes along the Waterholes Road, Hamptons Road, Trices Road, Sabys Road, Candys Road route are initially based on the hierarchy of the intersecting roads. If a road higher in the hierarchy intersects with the route it has priority. If a road of the same level in the hierarchy (i.e. District Arterial) has a higher traffic volume it has priority. The traffic volume driven priority situation occurs at the intersection of the route with Shands and Springs Road,
- The same hierarchy and traffic volume conditions apply to the Amyes Road, Awatea Road, Dunbars Road route where appropriate,
- Three routes were considered for providing access between State Highway 1 being the three routes mentioned,
- It has been determined that the Amyes Road, Awatea Road, Dunbars Road route would service a function as a district arterial connecting Hornby and Halswell and would primarily carry traffic beginning and ending their trips in the urban area. It is considered inappropriate to use this route as a heavy vehicle route connecting State Highway 1 and State Highway 75,
- There is considerable development being considered for the Halswell/Aidanfield/Wigram area in the near future. The population in the Halswell/Aidanfield/Wigram area is predicted to grow from approximately 13,000 people in 2001 to approximately 32,000 people in 2021. Associated with this growth there will be a commiserate growth in traffic volumes generated by the area,
- As a result of this development there are a number of new roads that may be constructed. These roads have been assumed to be in place as part of the Do Minimum. Should these roads not be constructed the situation will change with respect to the demand at some intersections and as a result there may be a need to review the strategy,
- The most significant road in this respect is the connection between the intersection of Halswell Road/Dunbars Road and the intersection of Sparks Road/Hendersons Road. This link would connect to the end of the Amyes Road, Awatea Road, Dunbars Road route and help distribute the traffic from the Halswell/Aidanfield/Wigram area to the Wigram Road, State Highway 75 arterials and Sparks Road,
- The Marshs Road / Quaifes Road route was considered, however, it was found to be less attractive than the Waterholes Road, Hamptons Road, Trices Road, Sabys Road, Candys Road route for travelling between State Highway 1 and State Highway 75.

17.3 Traffic Effects

The traffic effects in terms of vehicle kilometres and minutes travelled have been determined for the Transport Strategy network as a whole. The effects of the works associated with this corridor cannot easily be isolated. Hence, specific details of the effects for this corridor are limited to changes in traffic volumes. Some of the changes in traffic volumes in this corridor are related to works for other corridors, hence the volumes quoted are not necessarily a direct result of the Transport Strategy works for this corridor.

Table 32 is a summary list of the traffic volumes on major links affected by the Transport Strategy works for the corridor.

Traffic Volume Location	2001 (veh per day)	2021(veh per day)
Amyes Road east of Shands Road	7,700	14,600
Awatea Road east of Springs Road	2,600	15,500
Dunbars Road east of Wigram Road	5,100	11,200
Halswell Junction Road east of Shands Road	6,800	7,300
Halswell Junction Road east of Springs Road	6,500	5,600
Halswell Junction Road west of Whincops Road	5,800	5,800
Marshs Road east of State Highway 1	600	2,500
Marshs Road east of Shands Road	800	3,400
Marshs Road east of Springs Road	1,000	3,200
Quaifes Road east of the Whincops Road	300	500
Waterholes Road east of State Highway 1	300	1,100
Hamptons Road east of Shands Road	400	2,400
Trices Road east of Springs Road	700	3,300
Trices Road east of the Ellesmere Road Route	600	1,200
Sabys Road south of Candys Road	3,200	3,900
Sabys Road south of Halswell Junction Road	2,700	2,900
Candys Road east of Sabys Road	1,100	3,200

Table 32

Christchurch Outer Suburbs and the South Western Corridor Transport Strategy Major Link Traffic Volumes

17.4 Social and Environmental Effects

Existing/potential land uses: The Christchurch Outer Suburbs and South Western Orbital Corridor element of the Transport Strategy utilises existing roads as well as involving the creation of new roads. The existing roads adjoin rural land uses. The new roads outlined in this element of the Transport Strategy principally affect rural-residential land uses. The purchase of significant amounts of rural land will be necessary for these new roads.

Designations: Designations will be required for new roads, road widening, and to upgrade intersections, including an important new designation to establish new roads for a link between Trices Road and Candys Road.

Property access severance: Changes to roading hierarchies will seek to consolidate access onto key arterial routes and avoid the creation of new accesses where possible.

Landscape characteristics/quality: The study area is flat terrain consisting predominantly of grassed open farmland, rural-residential allotments, scattered buildings, some shelterbelts and trees. The Strategy involves widening existing roads and establishing new roads. The Strategy will also require the removal or relocation of existing features in the landscape such as trees and vegetation, dwellings and other buildings, fencing, lighting and power poles.

Mitigation of effects on landscape: To ensure that the roading will be integrated into the existing environment areas of roading improvements will be suitably landscaped where appropriate. Design and landscaping will assist in mitigating some of the adverse effects arising from the establishment of the new roads.

Geological/geotechnical considerations: New roads, widening, and changes at intersections will require detailed geotechnical investigations during the design phase of roading improvements.

Drainage: Those parts of the study area where drainage is a particularly important consideration are where new roads or roading improvements pass over or are near to the tributaries of the Halswell.

Noise: There will be temporary noise effects during the construction phase. The new roads will introduce vehicle noise to some houses currently distant from high-volume traffic flows. Other roading improvements will facilitate higher traffic volumes with a consequent rise in traffic-generated noise or increase noise levels at the notional boundaries of existing

dwellings by bringing vehicle paths closer to existing dwellings. An increase in traffic-generated noise is to be expected on routes with existing roading designations, the purpose of which is to carry traffic. Increases in traffic-generated noise levels on the new portions of road can be mitigated in areas of higher density residential use through the employment of buffers or barriers.

Maori, archaeological, cultural and heritage sites: There are no known sites of Maori, cultural, historical or archaeological significance affected by the Strategy. However, the Halswell River, its tributaries such as Knights Stream and the surrounding area are well known as significant sites and areas to Ngai Tahu. Therefore, it is recommend that further consultation with the relevant parties be undertaken at a more appropriate time such as the scheme assessment stage.

Social effects, social severance and property severance: The Strategy seeks to minimise social severance within settlements by ensuring existing links are maintained while new roads bypass settlements. The potential removal of some dwellings and/or reduction of the size of properties will have adverse social effects for affected owners and occupiers. New roads will lead to the separation of land that is currently in the same ownership or otherwise provide a barrier between neighbours. There will be considerable adverse social effects for the affected owners and occupiers.

Public transport/cycle: The improved highway and roading network will enable public transportation to operate more efficiently. There may also be opportunities to provide for separate cycle lanes or at least improvements to the shoulders of the carriageway and footpaths.

Consultation to date: The following topics were raised in the consultation process undertaken in 2006:

- Ecological impacts around the Quaifes Road/Sabys Road area.
- Wish to remove sharp bend at Knights Stream Bridge.

17.5 Staging and Timing (Also refer section 0)

The upgrading of this route is to provide a strong link between State Highway 1 and State Highway 75 and to provide a link to the Christchurch Lincoln corridor. Upgrading work is driven by hierarchy, safety at the Sabys Road end and completion of the Christchurch Southern Access corridor and the Christchurch to Lincoln corridor. Traffic currently travels this route without too many concerns and the projected traffic problems only marginally increase east of Ellesmere Road, however it would be desirable to complete the required work in conjunction with the Christchurch to Lincoln upgrade, to support the reduction in traffic on Springs Road through Prebbleton. For this reason this work should be completed within the medium term.

17.6 Response to Issues Raised

From the analysis carried out for this study the following points have been made in response to the issues raised:

- A route has been identified for travel between State Highway 1 and State Highway 75 and its function and form considered.