Caversham Valley Safety Improvements
Social Impact Assessment

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Date: July 2011
Reference: 6CM015.02
Status: Final

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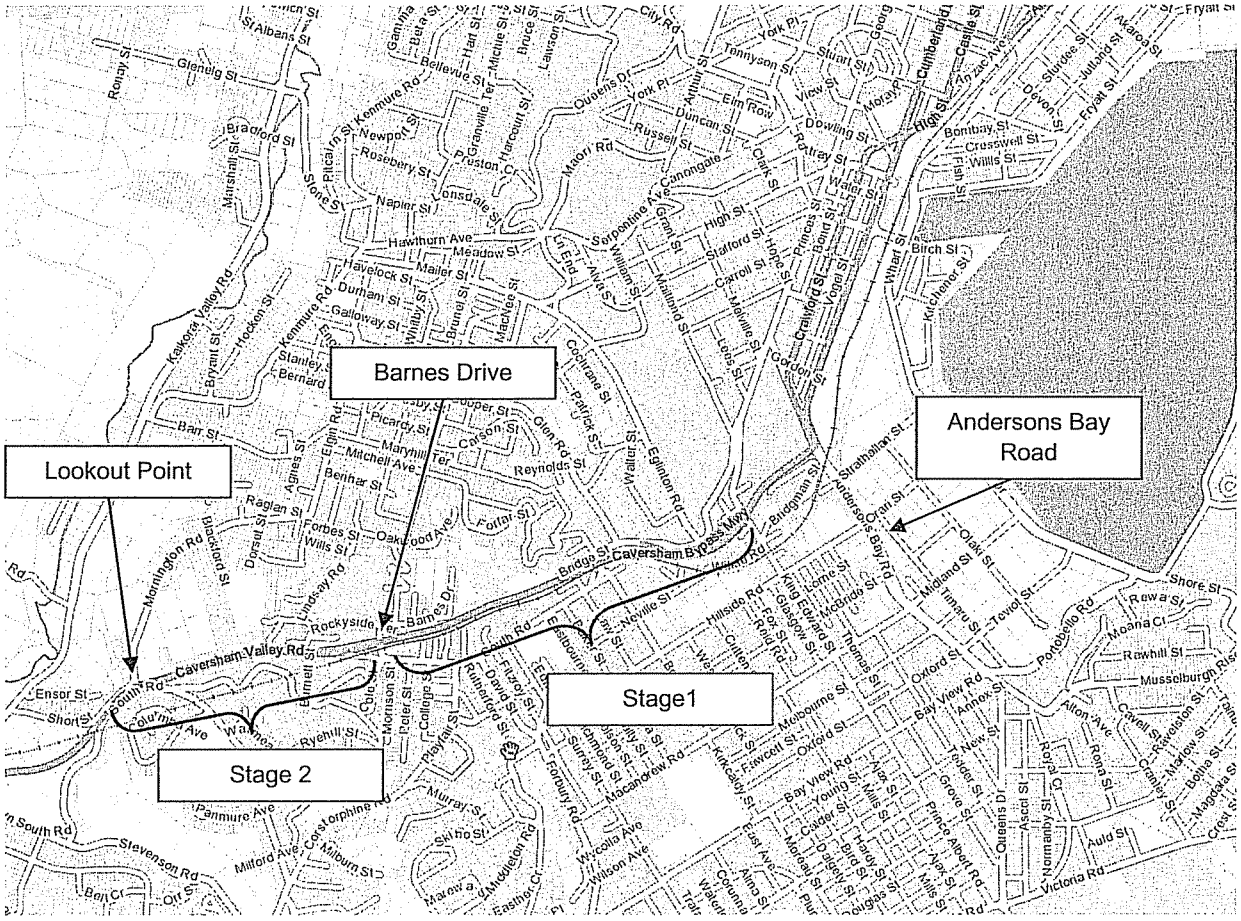
Appendixes

1 Introduction

The New Zealand Transport Agency (NZTA) has engaged Opus International Consultants (Opus) to carry out a social impact assessment (SIA) to identify any potential social impacts associated with Stage 2 of the Caversham Highway Improvements Project (the Project) in Dunedin. Stage 2 forms part of a wider NZTA project to improve the safety and efficiency of SH1 through the Caversham Valley from Andersons Bay Road to Lookout Point (see map 1 below).



Map 1: Stages 1 and 2 of the Project (Source: http://www.dunedin.govt.nz/council-online/webmaps/street-map)

Stage 1 of the Project is to four-lane SH1 between Andersons Bay Road and Barnes Drive. This stage is currently under construction. Stage 2 of the Project is to improve the safety and efficiency of SH1 between Barnes Drive and Lookout Point by:

- undertaking improvements to the highway corridor by way of widening and realigning the highway and separating east and westbound traffic lanes with a central median; and
- constructing a new intersection at Lookout Point where three options are proposed being the base option, alternative 1 and alternative 2.

The key objectives for Stage 2 of the Project are to:

- Improve the safety of the intersection at Lookout Point.
- Improve the safety of the highway corridor between Barnes Drive and Lookout Point.
- Improve connectivity between the suburbs of Mornington and Calton Hill/Caversham to the north and south of the highway respectively.
- Provide a moderate operating speed increase between the Barnes Drive intersection and Lookout Point from 50km/h to 60km/h.
- Increase traffic capacity on the highway

This report assesses the social impacts of the proposed works for Stage 2 of the Caversham Highway Improvements Project (see section 5 below) and forms one of a series of technical working reports to assist in the evaluation of the proposal on the community. It forms part of the supporting documents for the Notice of Requirement to alter the State highway 1 (SH1) Designation to provide for the Project.

The SIA involved the following main steps:

1. Understanding the proposal through a briefing with the project team and a site visit.
2. Project scoping to set the parameters of the assessment where the RMA context was defined, the SIA framework was determined, potentially affected parties were identified and the exclusions and limitations were identified.
3. Understanding the social environment using a combination of desk top research methods and site visits.
4. Consultation with the affected community, the wider community and stakeholders. Consultation has been ongoing since Project inception in 2008.
5. A review of other specialist reports from a social perspective. Specialist reports include the Traffic Assessment; the Urban Design, Landscape and Visual Assessment; and the Noise Assessment.
6. Identifying the assessment criteria using information gathered from the above steps.
7. Assessment of effects based on the assessment criteria.
8. Identifying potential mitigation and making recommendations.

Separate technical specialists have addressed issues such as traffic, visual impacts and noise. Where the social assessment identifies the issues relating to the above, the evaluation of these issues is made by the appropriate technical specialist. Impacts on property values are not addressed in this assessment and cultural impacts on iwi have not been considered. Consideration has been given to the extent to which the project satisfies Part 2 of the Resource Management Act 1991 (RMA).

2 Description of the Project

The project area is located along the route of the current southern motorway, from Lookout Point (western end of the Project) to Barnes Drive (eastern end of the Project), in an area to the south west of the city of Dunedin (see Figure 1 below).

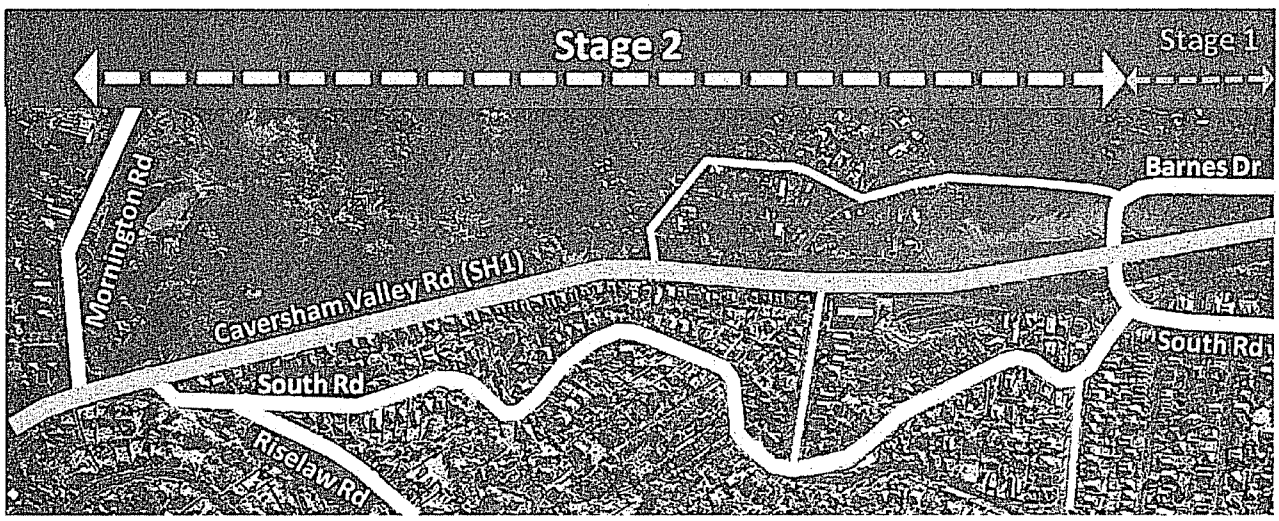


Figure 1: Stage 2 Project Area

This project is the second stage of the Caversham Highway Improvements. Stage 1 (Caversham Four Laning) of the project is currently being constructed. Stage 2, the Caversham Valley Safety Improvements (CVSI), is being progressed between Barnes Drive and Lookout Point. At Lookout Point there are 3 options for the upgrade of the Lookout Point intersection:

- The Base Option
- Alternative 1
- Alternative 2

The improvements to the highway corridor and a description of the intersection improvement options are fully described in the Integrated Transport Assessment ('transport report') (Appendix J of the NOR) and are summarised from this report below.

2.1 Improvements to the Highway Corridor

The horizontal curve at the crest of the hill at Lookout Point will be eased to improve the sight lines for vehicles driving from Mosgiel towards Dunedin.

The highway will be widened to increase lane widths to 3.5m and to provide for a kerbed central median separating east and west bound traffic. Roadside shoulders will be widened to between 1.5m – 2.1m.

Houses will be removed along Caversham Valley Road from Burnett Street to 109 Caversham Valley Road to provide for the project (see Designation Plan in Appendix B of the NOR). The remaining houses along Caversham Valley Road (from approximately 119 to 163 Caversham Valley Road) will have a southbound separated service lane for improved access and parking.

At Burnett Street only left turn movements onto SH1 will be able to be made and the left turn into Burnett Street from SH1 will be removed. The connection onto the highway from Short Street will be closed. The intersection at Aberfeldy Street will be modified but there will be no change to the access currently available.

At Barnes Drive separate lanes for left turning traffic will be introduced for westbound traffic and the current traffic signals will be modified to take into account those additions. Increased stacking length for turning traffic will also be provided.

Footpaths will be improved on both sides of SH1. The footpath to the north of SH1 will be a joint walk/cycle way. A pedestrian refuge will be provided in the central median opposite 107 Caversham Valley Road.

The speed limit will increase from 50km/h to 60km/h.

There will be a new intersection layout at Lookout Point. Three options have been identified being the base option, alternative 1 and alternative 2. The base option has been assessed by NZTA as the preferred option meeting the project objectives while addressing the issues at Lookout Point. Key aspects of each option considered are described below, as summarised from the transport assessment:

2.2 Base Option

The base option includes a new overbridge at Lookout Point that connects Riselaw Road to Mornington Road. There is provision for pedestrians and cyclists along the overbridge.

There will be no right turning movements into or out of Mornington Road and Riselaw Road.

At South Road there will be no direct access to the highway although access to South Road from the highway will be maintained. Connectivity for pedestrians and cyclists between South Road and Riselaw Road will be maintained.

At Riselaw Road turning options will only be available for west bound traffic and include left turns from Riselaw Road onto SH1 and left turns onto the over bridge from SH1. There will be no right turns onto SH1 from Riselaw Road and east bound highway traffic will not be able to turn right directly onto Riselaw Road.

At Mornington Road the only turning options available will be to eastbound traffic including left turns onto SH1 from Mornington Road and left turns onto Mornington Road from SH1. There will be no right turns onto SH1 from Mornington Road and west bound highway traffic will not be able to turn right directly onto Mornington Road. The fire service maintains its access to the highway via a dedicated laneway.

2.3 Alternative 1

Alternative 1 also includes an overbridge, however, the turning options are more limited compared to the base option. As with the base option, there will be no right turning movements into or out of Mornington Road and Riselaw Road. At Riselaw Road vehicles will be able to turn left onto SH1 but west bound vehicles on SH1 will not be able to turn left into Riselaw Road. At Mornington Road

east bound vehicles on SH1 will be able to turn left into Mornington Road but vehicles on Mornington Road will not be able to turn left onto SH1.

Fire service vehicles will maintain their existing arrangement via a dedicated laneway across the Mornington Road/SH1 intersection.

Access to South Road from the highway and between South Road and Riselaw Road for motorists, pedestrians and cyclists is the same as the base option.

2.4 Alternative 2

Alternative 2 proposes either a pedestrian/cycle overbridge or a pedestrian/cycle underpass. The turning options at Riselaw Road and Mornington Road are more limited than they are at present and South Road maintains its connectivity to the highway.

At Riselaw Road vehicles will be able to turn left onto SH1. West bound vehicles on SH1 will be able to turn left onto Riselaw Road and east bound vehicles on SH1 will be able to turn right into Riselaw Road. The access options that are restricted at Riselaw Road are a right turn out onto SH1 travelling east and vehicles will not be able to cross the highway from Riselaw Road to Mornington Road. At Mornington Road vehicles will be able to turn left onto the highway travelling east. Eastbound vehicles on SH1 will be able to turn left into Mornington Road and vehicles will also be able to travel across the highway from Mornington Road to Riselaw Road. Vehicles will not be able to turn right onto the highway from Mornington Road or turn right into Mornington Road from the highway

3 Statutory and Policy Framework

The Resource Management Act 1991 ('RMA') and the policy contexts of the Dunedin City Council ('DCC') and the Otago Regional Council ('ORC') are considered below.

3.1 The Resource Management Act 1991

The social impacts of the project were assessed against Part 2 matters under the RMA. The relevant sections are section 5 (Purpose and Principles of the Act) and sections 7(b), (c) and (f) (Other Matters).

Section 5 reads as follows:

> *(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.*
> *(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while—*
> *(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
> *(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
> *(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

Of particular relevance in section 5 is the mandate to enable people and communities to provide for their well-being and their health and safety.

The relevant social parts of section 7 read as follows:

> *(b) the efficient use and development of natural and physical resources.*
> *(c) the maintenance and enhancement of amenity values.*
> *(f) the maintenance and enhancement of the quality of the environment.*

The RMA provides a framework for considering the effects of a project on people and communities in terms of their wellbeing, health and safety and the quality and amenity of their environment. It also identifies the importance of efficiently developing natural and physical resources. In section 5 part of the analysis of the social impacts are considered in respect of sections 5, 6 and 7 of the RMA.

3.2 Dunedin City Council

The relevant DCC documents that provide a context for the development of the project and what it means for the Dunedin community include the Draft Community Plan; the Transportation Strategy and the District Plan.

3.2.1 Dunedin City Council Community Plan 2009/10 – 2018/19

The Dunedin City Council's Community Plan (CCP) outlines the goals and values of the community and puts forward a strategic outlook for the next ten years (2009/10 – 2018/19).

Projects in the CCP of relevance to the assessment are: continued work on cycleway and walkway networks around the city and the four-laning of the State Highway 1 at Caversham which is Stage 1 of the Caversham Highway Improvements Project. Stage 1 is under construction at present.

The Community Plan focuses on community outcomes identified by community members and these are used to formulate goals and priorities for the city. Those that are relevant to the assessment include:

- "Accessible City: a city with a transport system that supports economic development and where people move about easily and safely.
- Safe and Healthy People: a city where residents feel safe and enjoy a healthy lifestyle.
- Supportive Community - A city where residents feel included and connected with their wider community.
- Active City – a city that provides and encourages participation in a broad range of sporting, recreational and leisure activities". (DCC: Community Plan, 2009, p. 27)

Based on the above priorities and in relation to the Project, the community desires to maintain a safe, accessible and efficient transport network while providing an environment that supports community health and safety. The objectives of the Project that align with the community outcomes are outlined in table 8 below:

Table 1: Comparison of Community Outcomes and Project Objectives

Community Outcome	Project Objective
Accessible City	- Improve safety at Lookout Point and along SH1 between Barnes Drive and Lookout Point. - Improve connectivity between Mornington and Calton Hill/Caversham. - Increase traffic capacity on the state highway and avoid traffic detouring through local roads. - Improve the amenity of the corridor for pedestrians and cyclists.
Safe and Healthy People	- Improve safety at Lookout Point and along SH1 between Barnes Drive and Lookout Point. - Improve the amenity of the corridor for pedestrians and cyclists. - Improve the visual amenity and environmental quality of the corridor as a whole.
Supportive Community	- Improve the visual amenity and environmental quality of the corridor as a whole.
Active City	- Improve the amenity of the corridor for pedestrians and cyclists.

Based on Table 4 above, it is considered that the Project objectives support the community outcomes that are relevant to this project.

3.2.2 DCC Transportation Strategy 2006

The 2006 transportation strategy relates back to the Community Plan setting a direction for transport. In relation to the "Safe and Healthy People" outcome, the strategy aims to:

> *"Support sustainable transportation that minimises energy consumption and engine emissions into the environment, is an efficient use of Dunedin's infrastructure, and encourages physical activity."*

The strategy identifies "congestion at key points on the network" as a key issue to resolve to meet this objective. Caversham Valley Road is listed as a key route and one of the most congested points in the city; hence, an upgrade to the Caversham Valley Road is anticipated in the DCC Transportation Strategy. The social impacts of alleviating congestion are less time spent commuting and reduced vehicle running costs. Alleviating congestion on Caversham Valley Road is one of the objectives the Caversham Highway Improvements Project, hence, the objectives of the DCC Transportation Strategy and the objectives of the Caversham Valley Safety Improvements Project are in agreement and they support the social impact of alleviating congestion.

3.2.3 Dunedin City Council District Plan

Two sections of the District Plan were considered, being the transportation section and the residential section. The transportation section of the District Plan is considered relevant as it sets out what is important about transport infrastructure for Dunedin. Similarly, the Residential section of the District Plan is considered important as it sets out the qualities that are important in a residential area and need to be retained or improved.

(a) Transportation

The transportation section of the District Plan (section 20) outlines the council's policy for transport issues. Policy 20.3.9 is the overarching policy which is to:

> *sustainably manage transport infrastructure, particularly that of national or regional importance, in a way which will provide for its effective operation and preserve its capacity to meet the reasonably foreseeable needs of future generations, while avoiding, remedying or mitigating any adverse effects resulting from the operation of this infrastructure.*

SH1 through the Caversham Valley is a regionally important transport link from Dunedin to Otago and it connects the port to the airport and beyond. At present SH1 though the Caversham Valley is operating under capacity as identified by NZTA and confirmed in the Transport Assessment. NZTA wishes to improve this situation through the Caversham Highway Improvements Project which aligns with Policy 20.3.9 above.

The social impact of a transport system that operates effectively and has sufficient capacity for future generation is fewer crashes and reduced congestion. Fewer crashes results in fewer injuries and death and reduced congestion results in less time spent commuting and reduced vehicle running costs. At the same time, NZTA wishes to avoid, remedy and

mitigate any adverse effects. An important part of this process has been NZTA's consultation with stakeholders, residents and the wider community. As a result of consultation, NZTA has included design changes to avoid, remedy or mitigate adverse effects some of which will have social impact implications that are outlined further in section 5 of this report. Hence, transport policy 20.3.9 aligns with the Project objectives and supports changes to roading infrastructure in a way that will have positive social impacts and/or will avoid remedy or mitigate adverse social impacts.

(b) Residential Zone

Most of the land around the highway is zoned Residential 1. The District Plan recognises that the enhancement of amenity in residential areas is important to enable the people who live there to provide for their wellbeing. The ways in which amenity can be preserved and/or enhanced is to provide access to sunlight, adequate parking, privacy, peace and quiet, landscaping and space between buildings. The District Plan also notes that "land use activities and development in residential areas that adversely affect the character and amenity of those areas is a major concern" (DCC District Plan: 2006, p8:1).

Two of the Project's objectives are to improve the amenity of the corridor for pedestrians and cyclists and to improve the visual amenity and environmental quality of the corridor as a whole. The Project design process has been mindful of the changes the highway upgrade will have on the amenity of adjoining residential areas and where possible features have been included to lessen the impact of the highway such as:

- landscaping to soften the look of the highway,
- the inclusion of a proposed service lane which will improve parking and access for some properties on Caversham Valley Road, and
- noise mitigation.

The social impacts of improving the visual amenity and environmental quality of the corridor are increasing the pleasantness of living in an area and increasing the pleasantness of travelling on the highway. It is considered that the project objectives and the inclusion of measures to improve the look and feel of the highway will provide some social impact benefits and will support the intent of the Residential Zone.

3.3 Otago Regional Council

ORC policy documents of relevance to the project include the ORC's Long Term Council Community Plan (LTCCP) 2009-2019, the Otago Regional Land Transport Strategy 2005 and the Otago Regional Land Transport Programme 2009-2012.

3.3.1 LTCCP

The LTCCP has Key Actions Measures and of relevance for this project is the provision of connections to other regions and other parts of the world. Continued access to the airport, port, rail and road are specifically mentioned. When the Project is finished it will complete the four-laning of SH1 from Mosgiel to Andersons Bay Road in Dunedin. This will improve a portion of the route from Dunedin to the airport and from the Port to the Region. The social impact of improving access from the Port to Dunedin to the airport is reduced time spent

commuting. Hence, the Project aligns with Key Action Measures in the ORC's LTCCP resulting in the positive social impacts of reducing commuting.

3.3.2 Otago Regional Land Transport Strategy 2005

The Otago Regional Land Transport Strategy 2005 includes provision of a continuous 100km/h route from the Andersons Bay Road/SH1 intersection in Dunedin to the Dunedin Airport entry road. Upgrading SH1 though the Caversham Valley will go some way towards achieving this goal. However, providing a 100km/h route through the Caversham Valley is considered too costly at present with insufficient travel demand on the highway to justify the cost. The social impact of providing a 100km/h corridor from Dunedin to the airport is less time spent commuting.

3.3.3 Otago Regional Land Transport Programme 2009 - 2012

One of the priorities stated in the Otago Regional Land Transport Programme 2009 – 12 is "programmes supporting, in an effective manner, a reduction in deaths and injuries as a result of road crashes" (p. 2). Improving the Caversham corridor is listed as a priority programme. The social impact of reducing crashes is fewer injuries and death. Hence, the upgrade to SH1 through the Caversham Valley is in line with the priorities of Otago Regional Land Transport Programme as a Project that aims to improve the safety of the corridor and will have positive social impacts.

3.4 Summary

Upgrading SH1 through Caversham Valley is identified as a key priority in the DCC's Community Plan and Transportation Strategy. Upgrading SH1 is also highlighted in the ORC's LTCCP, Otago Regional Land Transport Strategy and Otago Regional Land Transport Programme. Maintaining the amenity of residential areas and providing for the health and wellbeing of the community is also identified in the District Council's planning documentation. The social impacts of the DCC's and ORC's policy and planning environment include:

- Supporting a safe transport system with fewer crashes and hence, fewer injuries and death;
- Supporting an efficient transport system with less congestion and more capacity and, hence, less time spent commuting and reduced vehicle running costs; and
- Improving visual amenity and environmental quality in residential areas which increases the pleasantness of living and travelling in an area.

It is considered that the Project objectives align with the objectives of the documents outlined above by:

- improving the efficiency and safety of the highway corridor and the Lookout Point intersection;
- improving the amenity of the highway corridor through landscaping improvements;
- Improving connectivity for pedestrians and cyclists; and
- consulting with stakeholders, the local community and the wider community to identify concerns and avoid, remedy or mitigate adverse effects where possible.

Hence, it is considered that the Project will contribute to the outcomes sought by the DCC and the ORC.

4 Social Environment and Community Profile

This section of the report summarises the relevant aspects of the Project setting including the physical environment and demographic characteristics of the area (see Location and Social Community Infrastructure Plan in Appendix 1). The purpose of this section is to provide a context of the Project environment which will assist in defining the parameters against which to assess the social effects of the Project.

4.1 Land Use

4.1.1 Wider Environment

Dunedin City lies to the northeast of the project area and to the east lies the industrial and big box retail area of South Dunedin along Andersons Bay Road. Between Caversham and Andersons Bay Road lies the residential area of South Dunedin and to the west of the Project area from Lookout Point is the start of the Southern Motorway. It extends down the hill towards Green Island and Mosgiel and thereafter to the Dunedin airport.

4.1.1 Project Environment

The eastern end of the Project is at the Barnes Drive/SH1 intersection. Around Barnes Drive to the south of the highway is Caversham Village which has a mix of retail and community services. There are continuous narrow footpaths on both sides of the highway.

Continuing west the land use north and south of the highway is largely residential with the communities of Caversham, Calton Hill and Corstophine West to the south and the communities of Lookout Point and Balaclava to the north. The form of residential development is predominantly single dwelling older style houses and the density of development is medium. Most of the houses south of SH1 are built close to the highway and they mostly have no vehicle access with residents using the highway shoulder for parking.

As the valley ascends towards Lookout Point the land on the north side of the road is a mix of residential uses and open space. At Lookout Point the highway is intersected by South Road and Mornington Road. Adjacent to the intersection of the State highway and Mornington Road is the Lookout Point Fire Station. There are a number of schools in the project environment (pre, primary, intermediate and high schools).

4.1.2 State highway 1

SH1 is one of the major land uses within the Project environment. It is part of a strategic route running from Picton to Bluff, which provides for the transportation needs of the South Island. It is also the major southern portal for Dunedin and in terms of local access it acts as an important link for trips between Dunedin South and the Green Island Area.

In terms of the history of the route, by the late 1840s Caversham Valley Road existed as a formed road through the Caversham Valley and it was constructed to connect Dunedin to the wider region and vice versa. The location of Caversham Valley Road between Barnes Drive and Lookout Point is in much the same location as it was in the mid 1800's. South

Road connected to Caversham Valley Road at where Barnes Drive is now and it completed the route through Caversham Village to Dunedin as shown in figure 7 of the Heritage Assessment (Appendix L of the NOR).

Having a four lane transport corridor to Dunedin Airport has been considered desirable since the 1950's, however, only sections of the route have been upgraded and/or widened to four lanes due to high costs and insufficient travel demand along the route. In the 1980's a new section of SH1 was constructed from Andersons Bay Road to Barnes Drive and South Road was no longer the main route from Dunedin through Caversham Village to Lookout Point. In 1999 SH1 from Barnes Drive to Lookout Point was four-laned and in 2003 SH1 was four-laned from Lookout Point to Mosgiel. SH1 between Andersons Bay Road and Barnes Drive is now being 4 laned.

The route has been designated in the Dunedin City Council (DCC) District Plan (D456) for state highway purposes since 1995 when the District Plan was notified and, Caversham Valley Road has been gazetted as State highway 1[1] since 1960 (NZGZ 20, p 390). Hence, there has been an expectation since the 1960's that there would be a major transport route in this location. Although the route is designated, further assessment has identified that additional land is required for inclusion in the highway designation to complete the Project (see Designation Plan - Appendix B in the NOR).

4.1.3 Services and Facilities

The number and type of services and facilities within a community provides an indication of the resources available to support that community, whether people within that community need to travel to access services and facilities, whether they will need to travel for work and if so how far away those services, facilities and places of work are located.

The services and facilities within the project environment include: a local village with shops; a medical centre, pharmacy and churches; primary and high schools; recreation reserves and access to public transport.

There are two bus routes in the vicinity:

- Corstophine – Lookout Point; and
- Pine Hill – Caversham – Lookout Point.

The Corstophine-Lookout Point route crosses Caversham Valley Road at Lookout Point (via Mornington Road and Riselaw Road) to provide service to Mornington Road and only operates on evenings and weekends. The second bus route does a loop via South Road, Sidey Street, Ryehill Street, Riselaw Road and back to South Road. This route operates on weekdays between 6.30am and 7.00pm.

The services and facilities are not extensive meaning that the people who live in the Project environment are likely to have to travel beyond their local community for some social/community resources and support and for work. Providing access to community

[1] Caversham Valley Road, State highway 1 (SH1) and "the highway" are terms that are used interchangeably in this report.

facilities, places of work and retail areas is important for people's quality of life as it enables them to provide for their health and wellbeing by purchasing goods and services, accessing work opportunities, buying food, going the doctor and/or the pharmacy etc. Retaining access to the services, facilities and work opportunities in wider Dunedin and beyond will be an important indicator of whether community members are able to provide for their wellbeing.

4.2 Demographic Characteristics

Information about the community within the Project environment was gathered at Meshblock and census area unit (CAU) levels using Statistics New Zealand 2006 census of population and dwellings and the Ministry of Education.

4.2.1 Population

A total of 5703 people live in the Project environment with 2343 occupied dwellings. Population density is fairly evenly spread across the affected communities. The population on land directly adjacent to the Project alignment is medium density with approximately 640 people in 270 households. In terms of population change the communities in the Project environs are not growing and/or have declined since 1996. The implications of a community with a declining population are that, over time, the services and facilities within that community may become less viable and decline. Declining service provision may result in potential adverse social impacts such as a requirement to travel further to access services and facilities and/or less use of services and facilities where services and facilities assist people and communities to provide for their wellbeing.

4.2.2 Age and Family Structure

Data from Statistics New Zealand indicates that Caversham has may have a smaller percentage of families and a higher percentage of retirees. This may have implications for public transport use and the provision of services and facilities for older people who are generally less mobile than the general population. Statistics New Zealand data also indicates that Corstophine West may have a higher percentage of young families and a smaller percentage of retirees. A higher percentage of young families may have implications for service provision particularly around schooling, childcare and the safety and accessibility of the transport network as young people are generally less mobile than the general population. Given the above, it will be important to maintain accessibility for the less mobile members of the community within the project environment.

4.3 Summary

The communities adjacent to the highway both north and south are primarily residential with some services and facilities including shops, churches, schools and public transport. The population has declined since 1996 with implications for the viability of services and facilities in the area. The area has a higher percentage of young families and the elderly compared to Otago hence the area is likely to have a greater proportion of the less mobile members of society being the elderly and the young. Retaining the access currently provided within and beyond the Project environment and retaining the services and facilities in the Project environment will be important to allow the community to provide for their wellbeing.

5 Assessment of Social Impacts

To develop the assessment criteria, best practice social impact assessment principles from the International Association of Impact Assessment; the Resource Management Act 1991 ('RMA'); results from the other specialist reports (noise assessment, transport assessment and urban design and visual landscape assessment) and consultation feedback was used. Synthesising the information gathered from the above sources[2], the following assessment criteria were identified to evaluate the positive and adverse social impacts of the Project on the local and wider community:

1. Personal and property rights in terms of:
    (a) Property acquisition
    (b) Land stability
2. People's way of life i.e. how people live, work and play and interact with one another on a day to day basis and how this may be affected by the Project in terms of changes to:
    (a) Accessibility for motorists.
    (b) Accessibility of passenger transport
    (c) Accessibility for pedestrians and cyclists
3. Community quality as a result of changes to:
    (a) The social fabric of the community
    (b) Services and facilities
    (c) Noise levels
    (d) Amenity Values
4. Health and safety in terms of changes to:
    (a) Accessibility for emergency services
    (b) Traffic safety on the local road network
    (c) Traffic safety on SH1
    (d) Pedestrian and cyclist safety

The social impacts of the Project will be assessed against the criteria identified above at three different geographic scales. Those scales are the local, the city wide and the regional scale. The Project is divided into four parts for assessment which include an assessment of the changes to the highway corridor, which will be covered in section 5.1 below, and an assessment of the three intersection options at Lookout Point being:

- the base option, which is the preferred option and is assessed in section 5.2 below
- alternative 1 which is assessed in section 5.3 below
- alternative 2 which is assessed in section 5.4 below

No alternative options were considered for the highway corridor upgrade.

[2] Best practice social impact assessment principles from the International Association of Impact Assessment; the Resource Management Act 1991 ('RMA'); results from the other specialist reports and consultation feedback.

5.1 Changes to the Highway Corridor

The proposed changes to the highway corridor are described in section 2.1 above. The changes to the corridor extend from Barnes Drive at the east end of the Project to Lookout Point at the west end of the Project. The proposed upgrades to the intersection at Lookout Point are not considered here but are considered in sections 5.2 - 5.4 below.

5.1.1 Personal and Property Rights

The potential social impacts of the Project in terms of personal and property rights relate to property acquisition and land stability. They primarily relate the planning phase of the project and although this phase is nearly complete it is important to acknowledge these effects and identify where the effect has been mitigated

(a) Property Acquisition

The form of the Project and the land required for the Project has gone through a number of iterations over the years. Although the proposed alignment has altered through the various iterations the general location of the highway has not and the residents are aware of the location of the highway within their community. Hence, the highway upgrade and its location have not been unexpected. NZTA has also consulted throughout the process and consultation is ongoing (see Appendix F in the NOR for the consultation report).

Approximately 40 parcels of residential land are required for the corridor improvements. The majority are in Crown, NZTA or DCC ownership. 7 properties are still under negotiation and have not been purchased by NZTA. Although there has been uncertainty in the past this has largely been mitigated by property purchases. The social impacts generated by the loss of properties and concerns around relocating are localised and have been mitigated by compensating property owners under the Public Works Act 1981 (PWA) and by extensive and thorough consultation with affected parties. The properties still under negotiation will also be compensated for under the PWA.

(b) Land stability

Some residents adjacent to the proposed works were concerned about the stability of their land as a result of the proposed earthworks to widen the highway. NZTA has acknowledged those concerns and advised residents that any slope stability issues will be avoided by appropriate engineering design. Hence, it is considered that the social effect of safety around the stability of the slopes adjoining residential land will mitigated by appropriate engineering design. It is considered that social impact of safety around land stability are localised and are not significant city wide or regionally.

5.1.2 People's Way of Life

This assessment criterion relates to how people go about their lives including where they go to recreate, work, shop and visit friends; how they get there; and how they interact with one another on a daily basis. The criteria below represent the ways in which the Project may impact on people's way of life.

(a) Accessibility for motorists

Changes to the highway corridor will have impacts on the following:

- How people access the properties that remain on SH1.
- How people use the Barnes Drive/SH1 intersection.
- How people use the Burnett Street/SH1 intersection.
- Accessibility along SH1 east to west.

Service lane - The properties that remain on SH1 will gain access via a new service lane. Consequently, accessing properties along the service lane will be easier as the driveways will be separated from the highway. It will also make parking easier as there is provision for parking along the service lane. The social impact of easier access and improved parking is increased safety accessing those properties. It is considered that providing a service lane for the properties remaining on SH1 will have a positive social impact for adjoining residents and the people that visit those properties. It is considered that the service lane's social impacts are localised and are not significant city wide or regionally.

Barnes Drive/SH1 intersection - The changes to the highway corridor will alter how people use the Barnes Drive/SH1 intersection. The changes to the Barnes Drive intersection are likely to result in less than minor changes in accessibility. Hence, the social impacts that relate to accessibility at the Barnes Drive/SH1 intersection are considered less than minor.

Burnett Street/SH1 intersection – The changes to the highway corridor will alter how people use the Burnett Street/SH1 intersection by banning left turn movements into Burnett Street. The implication for residents and users of Burnett Street is that they will now be required to use the Barnes Drive/SH1 intersection to access Burnett Street. The detour will result in increased travel distances of approximately 200m. The potential social impact is inconvenience with a change in travel patterns and increased commuting distance. This distance is considered small and will generate less than minor social effects.

East to west accessibility - The improvements to the highway corridor are also intended to improve travel times along the highway east to west by increasing the speed limit from 50km/h to 60km/h. An increase in speed limit will allow traffic to flow faster. It will also better match the 80km/h speed limit from the King Edward Street overbridge to Barnes Drive and the improvements made to the capacity of SH1 by the construction of Stage 1. The potential social impacts of improved access along SH1 are reduced congestion and commuting times to social services and facilities, shops, places of work and recreation areas in other parts of Dunedin. It is considered that the changes to the highway corridor will have positive social impacts for road users by improving access to the places that people shop, work, live and recreate and by reducing commuting times. These positive impacts will be experienced locally, city wide and regionally.

(b) Accessibility of passenger transport

The changes to the highway corridor will not affect passenger transport, hence, there are no social impacts to consider.

(c) Accessibility for pedestrians and cyclists

Changes to the highway corridor for pedestrians and cyclists include:

- Widening roadside shoulders to between 1.5m – 2.1m
- Improving footpaths on both sides of SH1 where the footpath to the north of SH1 will be a joint walk/cycle way.
- Providing a pedestrian refuge in the central median opposite 107 Caversham Valley Road.

In terms of widening roadside shoulders, although the shoulders are not specifically provided for cyclists, they provide a safer and more pleasant environment for cyclists as the additional space allows cyclists to separate themselves from vehicles. Providing a separate cycle way north of the highway also provides an improved environment for cyclists in terms of safety. Overall, there are more options that are safer for cyclists in the area as a result of widening highway shoulders.

Improving existing footpaths may increase the uptake of walking in the area as the footpaths may be more pleasant to walk on. Further, the pedestrian refuge in the central median provided on a pedestrian desire line opposite 107 Caversham Valley Road provides more options for pedestrians to cross the highway.

The above changes will improve connectivity and accessibility for pedestrians and cyclists along the highway corridor and provide more options that are more pleasant for walking and cycling. Providing pleasant options for walking and cycling is likely to have positive social impacts in terms of:

- Supporting physical activity which increases health and wellbeing.
- Increasing independence for young people who are not old enough to drive.
- Creating options and choices for travelling that are safer.
- Supporting social connectedness by creating more opportunities for face to face meetings.

Hence, it is considered that the social impacts of the improvements to the highway corridor for pedestrians and cyclists are positive. The positive social impacts of improved walking and cycling in the area will be experienced both locally and city wide. Locally, it will improve connectivity for pedestrians and cyclists within the Caversham Valley. City wide, it will support connectivity between the Dunedin City and the Caversham Valley as the above improvements will connect with existing walking and cycling infrastructure and the walking and cycling infrastructure that is currently being built as part of Stage 1 of the Project. Positive social impacts will not be experienced regionally.

5.1.3 Community Quality

The Project may have social impacts in terms of changes to the social fabric of the community, changes to the services and facilities available to residents and changes to noise levels.

(a) The social fabric of the community

The principal change to the physical fabric community as a result of the Project that may have social impacts is the removal of housing along Caversham Valley Road from Burnett Street to 109 Caversham Valley Road and the removal of properties north of SH1. The loss of housing has the potential to generate changes to the social fabric of the community as properties are removed and residents have to relocate as a result.

There has been an expectation that a major transport route would exist in this location since the 1960's and the route has been progressively upgraded since the 1980's. Therefore, the upgrade of SH1 through the Caversham Valley has not been unexpected. NZTA has been negotiating with property owners and consulting with owners and occupiers of properties in the area that may require removal since 2008. This process has afforded property owners and occupiers time to make decisions about their future. Now, most of the properties that require removal are in NZTA, Crown or DCC ownership and property owners have been compensated under the PWA. Property owners of those properties that are still under negotiation will also be compensated for under the PWA.

Although mitigation by way of consultation and compensation under the PWA coupled with the knowledge that there would be a transport corridor in this location does not change that people will need to move, it has provided some warning that the area will change. Further, this has provided affected residents with an opportunity to make plans for the future in line with these changes. Hence, it is considered that the social impacts of changing the social fabric of the community as a result of removing properties are less than minor.

(b) Services and facilities

The changes to the highway corridor will not affect the services and facilities in the area, hence, there are no social impacts to consider.

(c) Noise

The speed limit of SH1 will be increased from 50km/h to 60km/h and the carrying capacity of the highway will be increased. As a result of these changes, residents have raised concerns about whether noise levels will also increase. Feedback from residents through consultation is that the existing noise environment is undesirable and any increase in noise will adversely impact on their quality of life and wellbeing.

The noise assessment (attached as Appendix H in the NOR) identifies some of the social effects of noise where higher noise levels can impact on "health, perhaps indirectly by causing stress or by reducing the quality of sleep" (p.3).

The noise assessment concludes that "overall the noise impacts of the project are small in part because a number of properties that could have experienced large increases in noise levels are in fact removed so as to accommodate the project" (p. 44). In particular:

- *Noise levels from operation of road-traffic in Caversham Valley will be substantially unchanged for many properties that are near to the*

Project, relative to the noise levels that would exist without the Project having been built.

- *The Project decreases noise levels for properties that will remain on the south side of Caversham Valley Rd as the project moves the main carriageways further away from those houses*
- *The Project does substantially increase the road-traffic noise levels for some properties through the Project's removal of some buildings that currently provide those properties with screening although the resulting noise levels are reasonable in terms of applicable New Zealand Standards*

The noise assessment recommends "a service lane barrier, approximately 235 metres long and 1.8 metres high" (p. 44) to mitigate road noise for affected properties along the service lane. The noise assessment also identifies that for three houses (8 Burnett Street, 67 Caversham Valley Rd, and 472 South Rd) the removal of properties along Caversham Valley Road causes their noise levels to increase to a level where mitigation requires investigation under NZS6806:2010. The noise assessment recommends that these houses are further investigated to identify whether "some form of acoustic treatment of the building would be a practicable mitigation of the potential effects of this increased noise" (p. 44).

Hence, any social impacts as a result of noise will alter similarly to noise levels as follows:

- Social impacts will be less than minor for those properties that experience noise increases but not to a level where noise is considered unacceptable as per NZS6806:2010.
- Social impacts will be neutral for those properties where noise levels remain the same.
- Social impacts will be positive for those properties where noise levels decrease.
- For those properties that experience noise levels that require mitigation as per NZS6806:2010, the noise effects will be mitigated as far as practicable.

This assessment concurs with the findings of the noise assessment that the overall impact of the Project in relation to noise is small and it is considered that the social impacts of noise will be either less than minor, neutral, positive, mitigated or mitigation is being investigated.

(d) Amenity Values

Amenity values are defined in the RMA as "those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes". The highway corridor upgrade includes a landscaping concept design as described in the Urban Design and Visual Landscape Assessment (UDVLA) that will improve the visual quality of the corridor. The social impact of improving the visual quality of the corridor is an increase in amenity value along the corridor. Enhancing the visual quality of the corridor and will have positive social impacts on the adjoining community and on the users of the highway. The impact will be experienced locally, city wide and regionally.

5.1.4 Health and Safety

(a) Accessibility for emergency services

The changes to the highway corridor will have no effects on accessibility for emergency services, hence, there are no social impacts to consider.

(b) Traffic safety on the local road network

The changes to the highway corridor will not affect traffic safety on the local road network, however, changes to the highway corridor will alter the Burnett Street/SH1 intersection where only left turns onto the highway from Burnett Street will be able to be made. Reducing turning movements at an intersection improves the safety of that intersection. The social impact of improved road safety is a reduction in crashes and injuries. Hence, the social impact of reducing turning movements at Burnett Street is considered positive.

(c) Traffic safety on SH1

The purpose of the proposed changes to the highway corridor is to improve the safety of the route by constructing a kerbed central median, increasing lane widths, remove roadside parking and increasing the width of highway shoulders. The transport assessment comments on the safety implications of the above changes as follows:

- The installation of the kerbed central median will reduce the risk of vehicles crossing the centre line or attempting to complete U-turn manoeuvres.
- The removal of parking, installing wide shoulders and installing the service lane will mitigate the risk of collisions involving parking and parked cars (p. 9).

The social impacts of fewer crashes are fewer injuries and deaths. It is considered that the safety improvements to the highway corridor will have positive social impacts that will be experienced locally, city wide and regionally.

(d) Pedestrian and cyclist safety

The changes in the highway corridor for pedestrians and cyclists are considered in section 5.1.2.3 above. This assessment considers that the changes to the highway corridor for pedestrians and cyclists in terms of safety are likely to have positive social impacts that will be experienced locally and city wide but not regionally.

5.1.5 Summary and Conclusion

The social impacts of the changes to the highway corridor are as follows:

- Loss of properties and concerns around having to relocate which have been mitigated.
- Concerns around land stability which will be mitigated.
- Safer access and parking for residents along the service lane.
- Changes to the Barnes Drive/SH1 intersection where the effects are considered less than minor.

- Changes to the turning movements at Burnett Street/SH1 intersection where the effects are considered less than minor.
- Reduction in commuting times on the highway.
- Improved access for pedestrians and cyclists along and across the highway corridor.
- Changes to the social fabric of the community as a result of removing properties, which is considered less than minor.
- Noise effects will be either less than minor, neutral, positive, mitigated or mitigation is being investigated.
- Improvements in amenity as a result of landscaping along the highway corridor.
- Improved safety at the Burnett Street/SH1 intersection by removing a turning movement.
- Improved safety for motorists on the highway.
- Improved safety for pedestrians and cyclists on the highway.

Most of the social impacts of the corridor improvements are either positive or are less than minor. Any adverse impacts have been mitigated by NZTA as follows:

- Property acquisition has been mitigated by compensating property owners under the Public Works Act 1981 (PWA) and by extensive and thorough consultation between NZTA and affected parties. The properties still under negotiation will also be compensated for under the PWA.
- Concerns with slope stability have been mitigated by consultation with and acknowledgement of residents' concerns coupled with advice that any slope stability issues will be avoided by appropriate engineering design.
- Noise effects have been mitigated by noise barriers. Additional measures to mitigate road noise for three properties via acoustic insulation are still being investigated.

The upgrade to the highway corridor aligns with the DCC's planning and policy documents as follows:

- The Community Plan outcome of "accessible city"
- The Transportation Strategy's objective to alleviate congestion on Caversham Valley Road
- The District Plan's transportation policy to sustainably manage transport infrastructure.
- The District Plan's residential policy to enhance amenity in residential areas.

The highway corridor upgrade also aligns with the ORC's planning and policy documents as follows:

- The Long Term Council Community Plan's action measure which is to provide continued access to the airport, port, rail and road.
- The Regional Land Transport Strategy where the aim is to provide a continuous 100km/h route from Andersons Bay Road/SH1 intersection to the Dunedin airport entry road.

The upgrade to the highway corridor will have a number of positive social impacts locally, city wide and regionally. The potential adverse social impacts are localised and have either

been mitigated or are being investigated. It is considered that the upgrades to the highway corridor are consistent with the purposes and principles of the RMA as the upgrades will enable people and communities to provide for their health and wellbeing while avoiding remedying and mitigating adverse effects on the environment. The highway corridor upgrade will also enhance amenity values and will not detract from the quality of the environment. On balance, it is considered that the positive social impacts experienced locally, city wide and regionally outweigh any potential adverse social impacts that may be experienced locally.

5.2 Base Option

The base option is one of the three options considered by NZTA to upgrade the intersection at Lookout Point. It involves the construction of a vehicle overbridge over SH1 at Lookout Point with provision for pedestrians and cyclists. The base option is described in further detail in section 2.2 above and is assessed against the assessment matters below.

5.2.1 Personal and Property Rights

(a) Property acquisition

Similarly to the issues identified in section 5.1.1.1 above, the social impact of property acquisition is the loss of properties and concerns around relocating. The social impacts as a result of property acquisition for the base option will be similar to alternative 1 but more significant than alternative 2 as more land is required for the base option and alternative 1 than alternative 2. As noted in section 5.1.1.1 above it is considered that overall, the process undertaken by NZTA to acquire properties has been extensive and thorough and the social impacts of loss of property and concerns with relocating have been mitigated by compensating property owners under the Public Works Act 1981 (PWA). The properties still under negotiation will also be compensated for under the PWA .

(b) Land stability

Concerns around land stability were only in relation to the changes to the highway corridor. Hence, there are no social impacts in relation to land stability to consider.

5.2.2 People's Way of Life

(a) Accessibility for motorists

The construction of the base option will alter people's connectivity to the highway as well as their connectivity across the highway. People's travel patterns will alter as a result.

People travelling from Calton Hill or Caversham to Mornington and vice versa will be able to travel directly across the highway with no delays. People travelling east along the highway and wanting to access Riselaw Road will have to exit the highway at Lookout Point onto Mornington Road and turn right onto the new bridge heading south to Riselaw Road. People wanting to travel east from Riselaw Road to Dunedin City will have to drive north over the bridge and turn left onto Mornington Road and left again onto the highway.

People travelling west along SH1 and wanting to access Mornington Road will need to exit the highway at Lookout Point onto Riselaw Road and turn left onto the new bridge heading north to Mornington Road. People wanting to access the highway from Mornington Road to travel west (towards Mosgiel) will need to drive south over the new bridge and turn right onto the Riselaw Road exit to the highway.

People wanting to access the highway from South Road will have to drive east down South Road, turn left onto Barnes Drive and access the highway at the Barnes Drive/SH1 intersection. Vehicles travelling west along SH1 will still be able to access South Road via the service lane.

The fire service will retain its access to the highway via a laneway which will mean quick access to the highway for the fire service heading east.

Short Street will be closed to allow for the creation of a higher priority left turn deacceleration lane for Mornington Road. Residents of Short Street wishing to access the highway will need to use the Kaikorai Valley Road/Short Street intersection.

The implications of the base option include:

Improved north/south connectivity - the transport assessment notes that people will be able to cross over SH1 with no delay. The social impacts of being able to cross over SH1 with no delays are:

- Increased travel convenience;
- Less time commuting; and
- Improved access to services, facilities, work and recreational opportunities on either side of the highway.

It is considered that the social impacts will be positive and will be experienced locally and city wide but not regionally.

Increased travel distances to access SH1 – Accessing SH1 at Lookout Point via the overbridge will increase travel distances by approximately 200m. It is considered that this distance is small and will generate less than minor social effects.

Accessing SH1 from South Road will increase travel distances by a maximum of approximately 1.6km as motorists will be required to use the Burnett Street/SH1 intersection or the Barnes Drive/SH1 intersection. Accessing SH1 from Short Street will increase travel distances by a maximum of approximately 1.3km. The potential social impact is inconvenience with a change in travel patterns.

The distances that residents are required to detour to access SH1 and vice versa are not large. Further, the transport assessment notes that "since currently crossing SH1 at Lookout Point is challenging and unsafe some motorists may choose to complete a trip all on one side of SH1 instead of crossing it" (p.18). Hence, the numbers of affected motorists who would usually have used the Lookout Point/SH1 intersection and who will now need to undertake these detours are likely to be small. Hence, the social effect of inconvenience with a change in travel patterns is considered less than minor.

Reduced traffic on South Road – Severing South Road from Riselaw Road will result in fewer vehicles using South Road. The transport assessment predicts a reduction in use of South Road of 67% both eastbound and westbound (p. 17). The potential social impacts of a reduction in traffic on South Road include:

- Improvements in residential amenity with fewer cars and less noise.
- Improvements in road safety.

It is considered that reducing vehicle numbers on South Road will have positive social impacts.

Overall, it is considered that construction of the base option will either have social impacts that are less than minor or positive social impacts that will be experienced locally and city wide but not regionally.

(b) Accessibility of passenger transport

The changes to the way the Lookout Point intersection operates and the severance between South Road and Riselaw Road will impact on passenger transport. The transport assessment notes that buses will be able to cross SH1 at Lookout Point safely and with no delay. Improved connectivity over SH1 for buses is an opportunity to provide an improved bus service to Lookout Point. This assessment concurs with the transport assessment. However, the Pine Hill – Caversham – Lookout Point service will need to be re-routed as a result of the severance of South Road from Riselaw Road. The proposed bus route plan is shown in the transport assessment. The traffic assessment describes the re-routing:

> *The route can be altered to create a loop from South Road going north on Burnett Street to SH1, to the new southbound Service Lane, back along SH1 to the off-ramp, then southbound on Riselaw Road then along Waimea Avenue, Ryehill Street, and Sidney (sic) Street back to South Road (p. 9).*

The change that bus users face is a loss of service on South Road between Sidey Street and Riselaw Road where 8 bus stops will be lost. The re-routing of the bus service is likely to result in inconvenience for those who use the Pinehill – Lookout Point bus service as residents on South Road west of Sidey Street will have to walk further to catch the bus.

Car ownership in Caversham is less than in Otago and more residents may rely on the bus service in Caversham than in other parts of Dunedin to access the shops, to go to work, to recreate, exercise, access social services, visit friends etc. Loss of mobility can reduce quality of life and is particularly problematic for the less mobile members of society being:

- the elderly, who may no longer be able to drive and who may experience difficulty walking; and
- the young who are not be old enough to hold a drivers licence.

Effects to the bus service mentioned by residents were:

- Concern over the loss of the local bus service and bus stops.
- Inconvenient location of bus stops in places where there are no houses.
- Loss of a bus stop for an elderly neighbour.

Proposed mitigation outlined in the transport assessment is the provision of new bus stops on Burnett Street, in the new service lane and on Riselaw Road close to the overbridge. However, the proposed location of new bus stops, particularly on Riselaw Road and the service lane may be problematic for the elderly residents of South Road. South Road is fairly steep and the proposed pedestrian connection between South Road and Riselaw Road may be difficult for the elderly to use.

Overall it is considered that the potential effect of eliminating 8 bus stops on South Road will have a more than minor social impact on local residents that rely on the bus service.

Through concerns raised in consultation about the change in bus routes, NZTA is proposing an enhancement to the base option which is to create a new intersection between South Road and SH1. This enhancement is being assessed at present.

It is recommended that if the construction of an intersection between South Road and SH1 is feasible that the intersection is constructed and the bus service continues to run to the top of South Road.

(c) Accessibility for pedestrians and cyclists

The Project provides cycle and pedestrian access across the overbridge and maintains a pedestrian and cycle link between South Road and Riselaw Road. The implications of providing connectivity for pedestrians and cyclists on the overbridge are:

- More options for walking and cycling in the area that are safe.
- Improved safety for pedestrians and cyclists crossing over SH1.
- Improved convenience for pedestrians and cyclists crossing over SH1.

The implications of maintaining pedestrian and cycling connectivity between South Road and Riselaw Road is that walking and cycling options are not reduced.

Similarly to the impacts identified in 5.1.2.3 above, the social impacts of improving and maintaining pedestrian and cycling connectivity include:

- Supporting physical activity which increases health and wellbeing.
- Increasing independence for young people who are not old enough to drive.
- Creating options and choices for travelling in the area that is safer.
- Supporting social connectedness by creating more opportunities for face to face meetings.

Overall it is considered that the pedestrian and cycling improvements will have positive social impacts that will be experienced locally and city wide.

5.2.3 Community Quality

(a) The social fabric of the community

Changes to the social fabric of the community as a result of removing properties are considered in 5.1.3.1 above where it was considered that the social impacts of changing the social fabric of the community as a result of removing properties are less than minor.

(b) Services and facilities

The construction of the base option will not remove any services and facilities. Also, as noted in 5.2.2.1 above, improving connectivity across SH1 will enable people to access services and facilities across the highway that they may not have chosen to access previously due to the challenges with crossing SH1 at Lookout Point. The construction of the overbridge will improve connectivity across the highway and hence will have positive

social impacts in terms of accessing services and facilities on either side of the highway. This impact will be experienced locally and city wide.

(c) Noise

The impacts of noise are considered in section 5.1.3.3 above where the overall impact of the Project in relation to noise is considered small and the social impacts of noise will be either neutral, positive, less than minor or mitigated by NZTA.

(c) Amenity Values

The construction of the overbridge will change the outlook of properties in proximity to the overbridge and the batter/abutment slopes. The potential social effect of introducing a new structure into a residential environment is a reduction in residential amenity depending on the look and design of the structure. The UDVLA notes that "there is some potential to screen/green the structure and integrate it into the landform" (p. 6). The UDVLA also considers that the effect of the overbridge on views and outlook from properties closest to the overbridge "can be ameliorated by good bridge design and well located planting" (p. 7). This assessment concurs and considers that the potential adverse social impact of a reduction in residential amenity can be mitigated by appropriate landscaping and good bridge design.

5.2.4 Health and Safety

(a) Accessibility for emergency services

The construction of the overbridge may have impacts on the Lookout Point Fire Station in terms of the fire service's ability to access the highway. NZTA has consulted with the fire service as there were concerns around access to the highway. A laneway has been provided which will maintain the fire service's access to the highway. Hence, it is considered that the potential social impacts of a loss of connectivity for the fire service have been mitigated.

The severance of South Road from Riselaw Road will mean that emergency services will have further to travel to access the residents of South Road. As noted in 5.2.2.1 above, the social impacts of reduced accessibility and increased travel distances at South Road are considered less than minor.

(b) Traffic safety on the local road network

The construction of the overbridge will increase northbound traffic volumes on Riselaw Road by 79%, southbound traffic volumes on Riselaw Road by 60% and southbound traffic volumes on Mornington Road by 93% (see table 7.1 of the transport assessment, p. 17). Increasing traffic volumes and speeds on Riselaw Road as a result of the construction of the overbridge was identified as a concern by local residents. The implications of increased traffic include an increase in traffic noise and a potential reduction in road safety. The potential social impact is a reduction in residential amenity which reduces the pleasantness of living in an area.

The transport assessment notes that Mornington and Riselaw Roads are collector roads and while the "relative change in demand on these links appears large the total daily volume remains relatively low and is within the volume that can be expected on a collector road" (p. 18). Hence, although the traffic environment is likely to change, the change is not unexpected for a collector road and the collector road has been constructed to accommodate that increase. Hence, the social impact is considered less than minor.

(c) Traffic safety on SH1

The transport assessment of the base option concludes that the safety of Lookout Point will be improved with an anticipated reduction in crashes. This increase in safety is a positive social effect where the effects will be experienced locally, city wide and regionally.

(d) Pedestrian and cyclist safety

Pedestrian and cyclist safety is considered in 5.2.2.3 above where the social impacts were considered positive.

5.2.5 Summary and conclusions

The social impacts of constructing the base option are:

- Loss of properties and concerns around relocating that has been mitigated.
- Improved north/south connectivity over SH1 at the Lookout Point intersection resulting in increased travel convenience, less time commuting and improved access to services, facilities, work and recreational opportunities on either side of the highway.
- Increased travel distances for motorists wishing to access SH1 from South Road and Short Street and vice versa where the effects are considered less than minor.
- Reduction in traffic on South Road resulting in improvements in residential amenity with fewer cars and less noise and improvements in road safety.
- A more than minor social impact on the community's access to passenger transport which will impact on the less mobile members of the community being the elderly and the young. Mitigation is being investigated.
- An improved environment for pedestrians and cyclists in terms of safety, convenience and choice with positive social impacts being: increased physical activity which increases health and wellbeing; increased independence for young people, increased options and choices for travelling in the area that are safer and increased social connectedness by creating more opportunities for face to face meetings.
- Changes to the social fabric of the community through the removal of properties which is considered less than minor.
- An improvement in accessing services and facilities on either side of the highway.
- Noise effects around the bridge will be either less than minor, positive or neutral.
- A change in outlook for properties in proximity to the overbridge where mitigation is proposed.
- The potential loss of connectivity for the fire service to SH1, which has been mitigated.
- A decrease in connectivity for South Road for motorists, which is considered less than minor.

- An increase in traffic on Mornington and Riselaw Roads with a potential reduction in residential amenity. The increase is within the capacity of the road's collector road status and is considered less than minor.
- Fewer crashes at the Lookout Point intersection resulting in fewer injuries and deaths.

The social impacts of the base option are either positive or can be mitigated apart from the loss of passenger transport on South Road which NZTA is investigating providing mitigation for. Proposed mitigation is a new intersection between South Road and SH1. Other impacts that have been mitigated include:

- Property acquisition and concerns around relocating have been mitigated by compensating property owners under the Public Works Act 1981 (PWA) and the properties still under negotiation will also be compensated for under the PWA.
- Access for the fire service has been mitigated by providing a laneway.
- Changes in outlook as a result of the overbridge will be mitigated by good bridge design and well located planting.

The construction of the base option aligns with the DCC's planning and policy documents as follows:

- The Community Plan outcomes of: Accessible City; Safe and Healthy People and Active City.
- The District Plan transportation policy to sustainably manage transport infrastructure.
- The District Plan residential policy to enhance amenity in residential areas.

The construction of the base option will have a number of positive social impacts locally, city wide and regionally. The potential adverse social impacts are localised and have been mitigated apart from the impact on passenger transport which being investigated. Overall, it is considered that with mitigation for passenger transport the construction of the base option is consistent with the purposes and principles of the RMA as it will enable people and communities to provide for their health and wellbeing while avoiding, remedying and mitigating adverse effects on the environment. The construction of the base option will also enhance amenity values and will not detract from the quality of the environment. On balance, it is considered that the positive social impacts experienced locally, city wide and regionally outweigh any potential adverse social impacts that may be experienced locally.

5.3 Alternative 1

Alternative 1 is one of the three options considered by NZTA to upgrade the intersection at Lookout Point. It is similar to the base option in that it involves the construction of a vehicle overbridge over SH1 at Lookout Point with provision for pedestrians and cyclists. The difference between the base option and alternative 1 is that fewer turning options are provided onto SH1 at Lookout Point with alternative 1. Alternative 1 is described in more detail in section 2.3 above.

5.3.1 Personal and Property Rights

Impacts on personal and property rights are the same as the base option and are considered in 5.2.1 above. The social impacts have been mitigated by NZTA.

5.3.2 People's Way of Life

(a) Accessibility for motorists

Alternative 1 requires motorists to use the local road network if they want to:

- Travel east on the highway from Riselaw Road.
- Travel west on the highway from Mornington Road.
- Access Riselaw Road travelling west on the highway.
- Access Mornington Road travelling west on the highway.

The implications of alternative 1 include:

- Improved connectivity across the highway.
- An increased use of the local road network and detours using the local road network of between a maximum of approximately 1.5km and 3km.

The social impacts of improved connectivity across the highway include:

- Increased travel convenience;
- Less time commuting; and
- Improved access to services, facilities, work and recreational opportunities on either side of the highway.

It is considered that the social impacts will be positive and will be experienced locally and city wide but not regionally

The potential adverse social impacts of having to make detours using the local road network include:

- Inconvenience with a change in travel patterns; and
- Increased vehicle running costs.

Given the relatively short distances involved in terms of detours (a maximum of approximately 1.5km – 3km) the adverse social impacts outlined above that relate to a

change in travel patterns, increased vehicle running costs and increased time to access services and facilities are considered less than minor.

(b) Accessibility of passenger transport

The transport assessment identifies that the Corstophine - Lookout Point bus route has improved connectivity similarly to the base option. However, alternative 1 provides less connectivity to the highway than the base option. The transport assessment notes that re-routing the bus service will be challenging and is likely to result in long detours.

The social impacts of altering passenger transport accessibility are covered in 5.2.2.2. Given that alternative 1 will provide less connectivity to the highway and will also remove the bus stops on South Road the adverse social impacts are likely to be greater than the base option. Further, the proposed mitigation for the impacts on passenger transport as a result of severing South Road from Riselaw Road (providing an intersection from South Road to SH1) is only proposed for the base option and is not proposed for alternative 1. Hence, the adverse social impact of alternative 1 on passenger transport is more than minor and has not been mitigated.

(c) Accessibility for pedestrians and cyclists

Accessibility for pedestrians and cyclists is the same as the base option. This criterion was considered in 5.2.2.3 above where the social impacts were considered positive.

5.3.3 Community Quality

The changes to community quality as a result of alternative 1 are very similar to the base option apart from access to services and facilities. The social impacts to the social fabric of the community, noise and amenity values are either less than minor or have been mitigated by NZTA.

(a) The social fabric of the community

The social impacts on the social fabric of the community are similar to the social impacts of the base option (see 5.2.3 (a))

(b) Services and facilities

In terms of access to services and facilities, alternative 1 improves connectivity across the highway from what exists at present and hence access to services and facilities will be similar to the base option. Alternative 1 also increases commuting times because alternative 1 provides less connectivity than the base option for travel east west along the highway. Hence, the adverse social impacts on access to services and facilities as a result of alternative 1 will be greater than the base option but given the relatively short distances involved in terms of detours (1.5km – 3km) the adverse social impacts are considered less than minor.

(c) Noise

The social impacts as a result of noise are similar to the social impacts of noise from the base option (see 5.2.3 (c)).

(d) Amenity values

The social impacts on amenity values are similar to the social impacts on amenity values of the base option (see 5.2.3 (c)).

5.3.4 Health and Safety

The changes to health and safety as a result of alternative 1 are very similar to the base option where the impacts were considered less than minor or positive.

5.3.5 Summary and conclusions

The implications of this option are similar to the base option in terms of property acquisition; the social fabric of the community, noise, amenity values, accessibility for pedestrians and cyclists and health and safety. The differences between the base option and alternative 1 are as follows:

- Accessing the highway from Riselaw Road and Mornington Road will be less direct than the base option as the turning options onto the highway are more limited. This will increase travel distances for some motorists and may have impacts on people's access to services and facilities. The impacts are considered less than minor.
- Finding an alternative route for the Pinehill – Caversham - Lookout Point bus service will be more difficult and the social impacts are considered more than minor. Mitigation for the loss of service for passenger transport is only proposed for the base option, hence, the impacts on passenger transport have not been mitigated.

The construction of alternative 1 aligns with the DCC's planning and policy documents as follows:

- The Community Plan's outcomes of: Accessible City; Safe and Healthy People and Active City.
- The District Plan's transportation policy to sustainably manage transport infrastructure.
- The District Plan's residential policy to enhance amenity in residential areas.

Although alternative 1 and the base option are similar, alternative 1 provides less connectivity to the highway than the base option and the adverse social impact on passenger transport is more than minor with no mitigation developed at this point. Alternative 1 is less preferred than the base option and may require further development to mitigate any potential adverse social impacts if implemented.

5.4 Alternative 2

Alternative 2 is the third option to upgrade the Lookout Point intersection and the upgrade involves banning three of the four right turn movements at Lookout Point and constructing either a pedestrian/cycle overbridge or underpass. More detail on alternative 2 is provided in section 2.4 above.

5.4.1 Personal and Property Rights

Fewer properties will be required for the intersection alterations as a result of implementing alternative 2, hence, the social impacts on personal and property rights will be less than the base option and alternative 1 and have been mitigated.

5.4.2 People's Way of Life

(a) Accessibility for motorists

Alternative 2 results in increases in travel distances for people wanting to access Mornington Road from Riselaw Road and people travelling west on the highway wanting to access Mornington Road. Motorists will have to use the local road network and the distances will be similar to alternative 1, i.e. between 1.5km and 3km. The adverse social effects of alternative 2 include:

- Inconvenience with a change in travel patterns;
- Increased time commuting;
- Increased vehicle running costs; and
- Increased time to access services, facilities, work and recreational opportunities

The transport assessment summarises the travel times for motorists across SH1 as a result of implementing alternative 2. The travel times for alternative 2 are greater than the travel times for the base option and alternative 1. The transport assessment also identifies a significant increase in journey times for motorists wishing to travel from South Road to Mornington Road as the option of travelling directly over the highway is no longer available and detours are required (p. 25). Hence, alternative 2 does not have the benefits of improved accessibility across the highway from north to south. There are few positive social effects in terms of accessibility to recommend this option.

(b) Accessibility of passenger transport

Access across the highway from south to north is not possible, hence, the Corstorphine – Lookout Point bus route will not be able to operate. The transport assessment considers that "the loss of this bus route will further compound the severance caused by the highway currently" (p. 16). This assessment concurs.

The social impact of a loss of passenger transport accessibility includes a loss of mobility for the least mobile members of the community being the elderly and the young. A loss of mobility can reduce quality of life. The loss of passenger transport services in this community across the highway is considered more than minor.

The Pinehill – Caversham – Lookout Point service will still be able to operate without changes, hence, there are no social impacts for this service.

(c) Accessibility for pedestrians and cyclists

Alternative 2 proposes connectivity for pedestrians and cyclists by way of an overbridge or an underpass. The implications with providing improved connectivity for pedestrians and cyclists across SH1 include:

- More options for walking and cycling in the area.
- Improved safety for pedestrians and cyclists crossing over SH1.
- Improved convenience for pedestrians and cyclists crossing over SH1.

Similarly to the impacts identified in 5.1.2.3 above, the social impacts of improving pedestrian and cycling connectivity include:

- Supporting physical activity which increases health and wellbeing.
- Increasing independence for young people who are not old enough to drive.
- Creating options and choices for travelling in the area.
- Supporting social connectedness by creating more opportunities for face to face meetings.

The Urban Design and Visual Landscape Assessment (UDVLA) identifies that there may be disincentives to the use of an overbridge or underpass as neither option is at grade requiring pedestrians and cyclists to expend more effort. Hence, the positive social impacts identified above are likely to be experienced less significantly than the positive social impacts of providing pedestrian and cyclist connectivity as a result of the base option and alternative 1.

The UDVLA also notes that "an underpass is inherently less safe for users as an overview of the route is restricted" (p. 2). This assessment concurs with the UDVLA. Although providing connectivity for pedestrians and cyclists across the highway using an underpass provides road safety and connectivity benefits it is less preferred than providing an overbridge due to concerns over personal safety using an underpass. The social impact of a reduction in personal safety is considered more than minor.

5.4.3 Community Quality

(a) The social fabric of the community

The changes to the social fabric of the community as a result of alternative 2 are likely to be less significant than the base option and alternative 1 as less land is required to construct alternative 2. The social impacts include:

- Changes to the social makeup of an area.
- Changes to people's everyday routines and social networks

The social impacts as a result of alternative 2 have been assessed as less than minor.

(b) Services and facilities

The construction of alternative 2 will not remove any services and facilities, however, it does remove some of the connectivity across SH1 from what exists at present. Hence, alternative 2 will make it more difficult to access services and facilities on either side of the highway. The social impact is a reduced ability to access services, facilities, work and recreational opportunities. The social impacts on connectivity to services and facilities are likely to be greater with alternative 2 than the base option and alternative 1 and hence, alternative 2 is not recommended.

(c) Noise

The impacts of noise are considered in section 5.1.3.3 above. It was considered that the social impacts of noise would be less than minor, neutral, positive or appropriately mitigated.

(d) Amenity Values

The construction of a pedestrian/cycle overbridge will introduce a lighter structure into the visual landscape around Lookout Point. The UDVLA considers that "the structure would have some effect on views from neighbouring houses, but to a lesser extent than a road bridge" (p. 3). It is considered that any social impacts to amenity values as a result of the construction of the pedestrian/cycle overbridge will be less than minor.

5.4.4 Health and Safety

(a) Accessibility for emergency services

Alternative 2 does not provide a laneway for fire service vehicles to access SH1 heading east. Further, the elimination of 3 out of 4 right turns at Lookout Point and the significant increases in journey times identified by the transport assessment as a result of implementing alternative 2 will result in reduced accessibility to the highway for the fire service from what exists at present. The social impact of a reduction in accessibility for the fire service is a potential reduction in health and safety for the community. A reduction in health and safety is considered a more than minor adverse social impact. No mitigation has been identified at this point.

(b) Traffic safety on the local road network

The construction of alternative 2 will reduce northbound traffic on Mornington road by 19% and southbound traffic on Mornington Road by 46%. It will reduce northbound traffic on Riselaw road by 34% and will increase southbound traffic on Riselaw Road by 2%. Hence, the construction of alternative 2 will either reduce traffic on the local road network or the increase will be less than minor. Less traffic on the local road network has the following social impacts:

- Improvements in residential amenity with fewer cars and less noise.
- Improvements in road safety

Hence, the social impacts of alternative 2 on road safety on Mornington Road and Riselaw Road are likely to be positive and will be experienced locally but not city wide or regionally.

(c) Traffic safety on SH1

The transport assessment of alternative 2 concludes that there will be some safety improvement over the current layout with an anticipated reduction in crashes. This increase in safety is a positive social effect where the effects will be experienced locally, city wide and regionally.

(d) Pedestrian and cyclist safety

The construction of a pedestrian/cyclist overbridge will improve the safety of pedestrians and cyclists similarly to the base option and alternative 1. Hence, alternative 2 is likely to have the same positive impacts as the base option and alternative 1 in terms of safety.

The construction of an underpass is identified by the UDVLA report as inherently unsafe because users of the underpass are unable to see and be seen outside of the underpass. The social impacts of using unsafe infrastructure are reduced personal safety. This adverse impact is considered more than minor.

5.4.5 Summary and conclusions

The implications of this option are

- The social impacts on personal and property rights have been mitigated similarly to the base option and alternative 1.
- Reduced accessibility across the highway and onto the highway at Lookout Point than what exists at present.
- The loss of passenger transport services across the highway, which is considered a more than minor social impact with no proposed mitigation.
- An improved environment for pedestrians and cyclists in terms of safety, convenience and choice with positive social impacts being: increased physical activity which increases health and wellbeing; increased independence for young people, increased options and choices for travelling in the area that are safer and increased social connectedness by creating more opportunities for face to face meetings. The overpass is less recommended that the pedestrian/cycle facilities provided by way of a vehicle overbridge as the overpass is not at grade and will require more effort to use.
- The pedestrian/cycle underpass provides road safety and connectivity benefits; however, it is less preferred than providing an overbridge due to concerns over personal safety.
- Impacts on the social fabric of the community will be less significant than the base option and alternative 1 as less land is required to construct alternative 2 and fewer houses require removal. The social impacts are less than minor.
- Reduced ability to access services, facilities, work and recreational opportunities that is more significant than the base option and alternative 1.
- Noise impacts are considered less than minor, neutral, positive or have been mitigated.
- The change in outlook as a result of the pedestrian overbridge will be less than minor

- A reduction in accessibility for the fire service with a potential reduction in health and safety for the community, which is a more than minor adverse social impact and no mitigation is proposed at this point.
- A reduction in vehicle numbers on Mornington and Riselaw Roads with a corresponding increase in road safety and residential amenity.
- Improvements in safety at Lookout Point

The construction of alternative 2 aligns with the DCC's Community Plan outcomes of: Accessible City; Safe and Healthy People and Active City.

Overall, alternative 2 is the least preferred option from a social perspective. Alternative 2 has fewer positive social impacts to recommend it and more adverse social impacts that are more than minor where no mitigation has been identified at this point.

6 Conclusion

This report has assessed the proposed upgrade to the highway corridor through the Caversham Valley from Barnes Drive to Lookout Point and three options for the Lookout Point intersection upgrade.

6.1 Highway Corridor Upgrade

The social impacts are either positive or are less than minor and any adverse impacts have been mitigated by NZTA. The positive social impacts include:

- Safer access and parking for residents along the service lane.
- Reduction in commuting times on the highway
- Improved access for pedestrians and cyclists along and across the highway corridor.
- Improvements in amenity as a result of landscaping along the highway corridor.
- Improved safety at the Burnett Street/SH1 intersection by removing a turning movement
- Improved safety for motorists on the highway
- Improved safety for pedestrians and cyclists on the highway

The adverse social impacts that have been mitigated include:

- Property acquisition has been mitigated by compensating property owners under the Public Works Act 1981 (PWA) and by extensive and thorough consultation between NZTA and affected parties. The properties still under negotiation will also be compensated for under the PWA.
- Concerns with slope stability have been mitigated by consultation with and acknowledgement of residents' concerns coupled with advice that any slope stability issues will be avoided by appropriate engineering design.
- Noise effects have been mitigated by noise barriers. Additional measures to mitigate road noise for three properties via acoustic insulation are still being investigated.

The upgrade to the highway corridor aligns with the DCC's and the ORC's planning and policy documents and it is considered that the upgrade to the highway corridor supports the purposes and principles of the RMA.

6.2 Lookout Point Intersection Upgrades

Three options are proposed to upgrade the intersection at Lookout Point, being the base option, alternative 1 and alternative 2. The base option is the preferred option and it provides the greatest positive social impacts and the least adverse social impacts than alternative 1 and alternative 2. The base option involves the construction of a vehicle overbridge with connectivity for pedestrians and cyclists. All turning movements onto and off the highway are provided albeit with slightly greater distances than at present. The positive social impacts of the base option include:

- Improved north/south connectivity over SH1 at the Lookout Point intersection resulting in increased travel convenience, less time commuting and improved access to services, facilities, work and recreational opportunities on either side of the highway.

- Reduction in traffic on South Road resulting in improvements in residential amenity with fewer cars and less noise and improvements in road safety.
- An improved environment for pedestrians and cyclists in terms of safety, convenience and choice with positive social impacts being: increased physical activity which increases health and wellbeing; increased independence for young people, increased options and choices for travelling in the area that are safer and increased social connectedness by creating more opportunities for face to face meetings.
- An improvement in accessing services and facilities on either side of the highway.
- Fewer crashes at the Lookout Point intersection resulting in fewer injuries and deaths.

The base option's adverse effects have been mitigated as follows:

- Property acquisition and concerns around relocating have been mitigated by compensating property owners under the Public Works Act 1981 (PWA) and the properties still under negotiation will also be compensated for under the PWA.
- Access for the fire service has been mitigated by providing a laneway.
- Changes in outlook as a result of the overbridge will be mitigated by good bridge design and well located planting.

The base option results in one adverse social impact, being a reduction in the community's access to passenger transport, which will impact on the less mobile members of the community being the elderly and the young. This impact is considered more than minor and has not been mitigated at present but mitigation is being investigated by way of constructing a new intersection between South Road and SH1.

The base option aligns with the DCC's and the ORC's planning and policy documents and it is considered that the construction of the base option supports the purposes and principles of the RMA.

Alternative 1 is similar to the base option in that a vehicle overbridge is provided with provision for pedestrians and cyclists. The differences relate to:

- Access to the highway from Riselaw Road and Mornington Road will be less direct than the base option
- Finding an alternative route for the Pinehill – Caversham - Lookout Point bus service will be more difficult as the turning options at Lookout Point are more limited. The social impacts are considered more than minor and no mitigation is proposed.

Alternative 1 is less preferred than the base option from a social perspective.

Alternative 2 involves the construction of a pedestrian/cycle overbridge or underpass and three out of four right turns are restricted at the Lookout Point intersection. Alternative 2 provides less connectivity to the highway at Lookout Point than the present configuration. Further, there are more adverse social impacts as a result of alternative 2 than the other options and no mitigation is proposed at this point. Alternative 2 is less preferred than the base option and alternative 1 from a social perspective.

Overall it is considered that if the base option and the highway corridor improvements are constructed the changes to SH1 through the Caversham Valley will meet the objectives of Stage 2 of the Caversham Valley Safety Improvements Project and it will have positive social impacts locally, city wide and regionally.

References

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Statistics New Zealand (2006). Census of Population and Dwellings. http://www.statisticsnz.govt.nz/Census/2006CensusHomePage.aspx

Appendix 1 – Location and Community Infrastructure Plan