



## SH1 Caversham Valley Safety Improvements Notice of Requirement for an Alteration to Designation

This report has been prepared for the benefit of the NZ Transport Agency (NZTA). No liability is accepted by this company or any employee or sub-consultant of this company with respect to its use by any other person.

This disclaimer shall apply notwithstanding that the report may be made available to other persons for an application for permission or approval or to fulfil a legal requirement.

#### Quality Assurance Statement

Project Manager: Simon Underwood

Prepared by: Julie McMinn

Reviewed by: Shane Roberts

Approved for issue by: Ian McCabe

#### Revision Schedule

Rev. No	Date	Description	Prepared by	Reviewed by	Approved by
1	.../5/11	Draft	JM	SR/SU	
2	26/5/11	Draft	JM	SR/IM	

## Contents

1.	Introduction.....	1
2.	Background to Caversham Safety Improvements Project.....	3
3.	Problem Description .....	4
4.	Site Description.....	5
5.	Proposal Description .....	6
5.1	Alteration to Designation.....	6
5.2	The Proposed Works .....	6
5.3	Timing of Construction.....	8
5.4	Maintenance .....	8
5.5	Outline Plan.....	8
6.	Consideration of Alternatives .....	9
6.1	Original Proposals .....	9
6.2	2009 Interim Scheme Assessment Options (SAR) .....	9
6.3	Do-minimum Option .....	10
6.4	Option Development.....	10
7.	Consultation .....	11
7.1	2008 -2010: Early Consultation .....	11
7.2	2011 Community Consultation .....	12
7.3	Statutory Authority and Agency Consultation.....	14
7.4	Directly Affected Party Consultation.....	15
8.	The Alteration to Designation Process under the RMA.....	16
9.	Assessment of Effects on the Environment.....	17
9.1	Positive Effects .....	17
9.2	Effects on Urban Design and Landscape Values .....	17
9.3	Effects from Operational Noise .....	20
9.4	Effects on Caversham Valley Bush and Lookout Point Reserves Ecology.....	22
9.5	Effects on traffic and traffic safety .....	23
9.6	Proposed Traffic Improvements .....	23

9.7	Traffic Demands .....	24
9.8	Closure of Short Street and Restriction of the Left Turn into Burnett Street.....	24
9.9	Conclusion .....	25
9.10	Effects on People and the Community.....	25
9.11	Effects from Earthworks.....	26
9.12	Effects from Construction .....	27
10.	Statutory Assessment.....	29
10.1	Part II of the RMA.....	29
10.2	Notification.....	30
10.3	Regional Land Transport Strategy 2005 .....	30
10.4	Regional Policy Statement.....	31
10.5	Dunedin City District Plan .....	33
11.	Summary of Mitigation Measures .....	40
12.	Conclusion.....	42
Appendix A: Location Map		
Appendix B: Designation Plan		
Appendix C: Land Requirement Plan and Certificate of Titles		
Appendix D: Proposed Options		
Appendix E: Option Development Diagram		
Appendix F: Consultation Report		
Appendix G: Urban Design, Landscape and Visual Assessment Report		
Appendix H: Noise Assessment		
Appendix I: Ecological Assessment		
Appendix J: Integrated Traffic Assessment		
Appendix K: Social Impact Assessment		
Appendix L: Heritage Report		

## NOTICE OF REQUIREMENT FOR AN ALTERATION TO DESIGNATION PURSUANT TO SECTION 181 OF THE RESOURCE MANAGEMENT ACT 1991

**TO:** Dunedin City Council  
PO Box 5045  
DUNEDIN 9058

**FROM:** NZ Transport Agency  
P O Box 5245  
DUNEDIN 9058

**(Note: different address for service)**

The NZ Transport Agency (NZTA), as a requiring authority, hereby gives notice to alter D456: SH1- Caversham Valley Road (from Sydney Street to Lookout Point) – **“State Highway Purposes”** and D457: SH1 – Southern Motorway (from Lookout Point to between Abbotsford Rd and Sunnyvale Lane) - **“Motorway Purposes (SH1)”**.

The NZTA seeks to alter both these designations in the District Plan. D-456 will be modified to include the land required to construct the project. The NZTA also seeks to alter the area of D457 affected by the project and other required land around this section of the designation and include this within D 456 to be more accurately described as “State Highway Purposes”.

The alteration is required to facilitate the construction and completion of the Dunedin southern arterial route between the central city and Mosgiel for the purposes of ensuring the safety and efficiency of State Highway 1. The proposed works will include a four lane median divided route. The new state highway construction will be directly alongside the existing carriageway. The existing state highway will continue to form part of the new widened carriageway, or be utilised as a service lane for those remaining properties alongside the uphill carriageway. The proposed works will include a Riselaw Road to Morningson Road bridge as an overpass to State Highway 1 (SH1).

The site to which the requirement applies is as follows:

Street	Street Number	Owner	Legal Description	Title
Caversham Valley Road	61	Her Majesty the Queen	Lot 36 DP 1822	212/172
Caversham Valley Road	63	Her Majesty the Queen	Lot 37 DP 1822	10C/1126
Caversham Valley Road	65	Her Majesty the Queen	Lot 38 DP 1822	7D/258
Caversham Valley Road	67	William Mosley	Pt Lot 39 DP 1822	159/147
Caversham Valley Road	71	Her Majesty the Queen	Pt Lot 39 DP 1822	153/136
Accessway Caversham Valley Rd		Arthur Sidey, Thomas Sidey	Pt Lot 29 Blk VI Town SD	164/153
Caversham Valley Road	75	Her Majesty the Queen	Lot 1 DP 1914	10D/768
Caversham Valley Road	77	Her Majesty the Queen	Lot 2 DP 1914	148/255
Caversham Valley Road	79	Her Majesty the Queen	Lot 3 DP 1914	7D/970
Caversham Valley Road	81	Her Majesty the Queen	Lot 4 DP 1914	18B/462

Street	Street Number	Owner	Legal Description	Title
Caversham Valley Road	83	Her Majesty the Queen	Lot 44 DP 1822	4D/1356
Caversham Valley Road	87	Her Majesty the Queen	Lot 45 DP 1822	153/35
Caversham Valley Road	89	Her Majesty the Queen	Lot 46 DP 1822	10D/1140
Caversham Valley Road	91	Her Majesty the Queen	Lot 47 DP 1822	143/136
Caversham Valley Road	93	Her Majesty the Queen	Lot 48 DP 1822	144/135
Caversham Valley Road	95	Her Majesty the Queen	Lot 49 DP 1822	144/22
Caversham Valley Road	97	Her Majesty the Queen	Lot 50 DP 1822	146/260
Caversham Valley Road	99	Her Majesty the Queen	Lot 51 DP 1822	166/142
Caversham Valley Road	103	Her Majesty the Queen	Lot 52 DP 1822	10D/713
Caversham Valley Road	105	Her Majesty the Queen	Pt Lot 53 DP 1822	B2/188
Caversham Valley Road	107	Her Majesty the Queen	Lot 54 DP 1822	10D/789
Caversham Valley Road	109	Her Majesty the Queen	Lot 68 DP 1822	240/213
South Road	540	Glenda Skipper	Lot 2 DP 4638	291/111
Caversham Valley Road	169	David O'Connor	Lot 1 DP 4638	274/154
Caversham Valley Road	171	June Walton	Lot 3 DP 3476	224/126
South Road	546	Colin Wollestein, Leonie & Peter Robinson	Lot 2 DP 3476	224/135
South Road	550	Gwendoline Moffat, Michael & Anthony Wannacott	Lot 1 DP 3476	234/282
Sidey Park		DCC	Legal road by s317 LGA; formerly Part Lot 2, DP 5996 and Section 1, SO 23279.	15C/1066 and 5653064.1
Sidey Park		DCC	Section 119, Blk VI, Town SD.	A2/956

Street	Street Number	Owner	Legal Description	Title
Barnes Drive		DCC	Land to be road vested in the DCC	NZG 1991/1271
Caversham Place	25	Her Majesty the Queen	Railway Land - Proc 2030, GN 1906 p3133.	NZG 1906/3133 Plan 15452
Caversham Valley Road	53	PEAJAE LIMITED	Allotment 24 DP 2342 (168/181), Lot 32 Block III DP 1822 (159/81), Allotment 33 Block III DP 1822 (171/32), Pt Allotment 34 DP 1822 (238/261), Pt Allotment 34 DP 1822 (238/262), Allotment 25 DP 2342.	168/181, 159/81, 171/32, 238/261, 238/262, 190/103
Caversham Valley Road	90	Her Majesty the Queen	Part Lot 5, DP 573	12C/710
Aberfeldy Street		Her Majesty the Queen	Road on deposit of DP 573	N/A
Aberfeldy Street	2	Her Majesty the Queen	Legal Road, being formerly Section 173, Block VI, Town Survey District.	11B/1273
Caversham Valley Road	94	Her Majesty the Queen	Legal Road, being formerly Section 144, Block VI, Town Survey District.	10C/1467
Caversham Valley Road	96	Her Majesty the Queen	Legal Road, being formerly Section 136, Block VI, Town Survey District.	11A/458
Caversham Valley Road	100	Her Majesty the Queen	Legal Road, being formerly Section 141, Block VI, Town Survey District.	10C/723
Caversham Valley Road	102	Her Majesty the Queen	Legal Road, being formerly Section 1, SO 300203 as comprised in CFR OT14A/487 (cancelled).	Pt 14A/487
Caversham Valley Road	104	Her Majesty the Queen	Legal Road, being formerly Section 137, Block VI, Town Survey District.	10A/1494

NZ Transport Agency  
SH1 Caversham Valley Safety Improvements  
Notice of Requirement for Alteration to Designation

Street	Street Number	Owner	Legal Description	Title
Caversham Valley Road	106	Her Majesty the Queen	Legal Road, being formerly Lot 1, DP 8641.	390/172
Caversham Valley Road	108	Her Majesty the Queen	Section 142, Block VI, Town Survey District, and Lot 1, DP 8015.	10A/1496
Caversham Valley Road	110	Her Majesty the Queen	Section 140, Block VI, Town Survey District.	13A/822
Caversham Valley Road	112	Her Majesty the Queen	Section 139, Block VI, Town Survey District.	13A/821
Caversham Valley Road	114	Her Majesty the Queen	Section 138, Block VI, Town Survey District.	10A/1469
Caversham Valley Road	132	Dunedin City Council	Pt Section 172, Blk VI, Town SD (Park in terms of s138 LGA).	15D/462
Caversham Valley Road		Her Majesty the Queen	Pt Sec 35-36 Blk VI Town SD	146/131 149/111
Caversham Valley Road		Her Majesty the Queen	Pt Section 34 and 732R Blk VI, Town SD	GN 342489
Caversham Valley Road	138	Her Majesty the Queen	Section 150, Block VI, Town SD.	13A/826
Caversham Valley Road		Her Majesty the Queen	Pt Lot 1 DP 5211	GN 307288
Caversham Valley Road	140	Her Majesty the Queen	Section 149, Block VI, Town SD.	13A/825
Caversham Valley Road	Pt 140	Her Majesty the Queen	Pt Lot 6 DP 8495	GN 308601
Caversham Valley Road	142	Her Majesty the Queen	Legal Road, being formerly Section 148, Block VI, Town SD.	13A/824
Caversham Valley Road	144	Her Majesty the Queen	Legal Road, being formerly Section 147, Block VI, Town Survey District.	13A/823
Caversham Valley Road		Her Majesty the Queen	Pt Lot 4 DP 8495	GN 552215
Caversham Valley Road		Her Majesty the Queen	Pt Lot 5 DP 8495	GN 389310



Street	Street Number	Owner	Legal Description	Title
Caversham Valley Road	146	Mr D Randle	Pt Section 36-37 and Pt Section 1508R Block VI Town Survey District.	387/28
Caversham Valley Road	150	Her Majesty the Queen	Legal Road being formerly Section 146, Block VI, Town SD as comprised in CFR OT11D/361 (cancelled).	11D/361
Caversham Valley Road	Pt 150	Her Majesty the Queen	Pt Lot 3 DP 8495	GN 433062
Caversham Valley Road	152	Her Majesty the Queen	Lot 2, DP 8495, Block VI, Town SD.	401/125
Caversham Valley Road	154	Her Majesty the Queen	Legal Road, being formerly Allotment 7, DP 3888.	15C/874
Caversham Valley Road	158	Her Majesty the Queen	Legal Road, being formerly Allotment 7, DP 3888. 240/268	5715534.1
Caversham Valley Road	160	Her Majesty the Queen	Legal Road, being formerly Allotment 6, DP 3888.	240/267
Caversham Valley Road	162	Her Majesty the Queen	Legal Road, being formerly Allotment 5, DP 3888	240/149
Caversham Valley Road	Pt 163	Her Majesty the Queen	Pt Lot 9 DP 3888	8D/898
Caversham Valley Road		Her Majesty the Queen	Pt Lot 7 DP 3888. Declared road by special order of DCC pursuant to Section 320:5715534.1	5715534.1
Caversham Valley Road	164	Her Majesty the Queen	Lot 4, DP 3888.	276/140
Caversham Valley Road	166	Her Majesty the Queen	Legal Road, being formerly Lot 3, DP 3888.	249/294
Caversham Valley Road	168	Her Majesty the Queen	Pt Lot 2, DP 3888.	281/5
Caversham Valley Road	170	Her Majesty the Queen	Legal Road, being formerly Lot 1 and Pt Lot 2, DP 3888.	242/249

NZ Transport Agency  
SH1 Caversham Valley Safety Improvements  
Notice of Requirement for Alteration to Designation

Street	Street Number	Owner	Legal Description	Title
Caversham Valley Road		Mr B Walsh	Section 145 Block VI Town SD.	11A/1178
Caversham Valley Road	176	DCC/DoC	Pt Section 41, Blk VI, Town SD - Recreation Reserve subject to Reserves Act.	192762
Caversham Valley Road	192	Burnside (Dunedin) Ltd	Pt Section 41 & 42, Block VI, Town SD.	13B/1239
Mornington Rd		Crown	Crown Grant Road SO 2. Proc NZ Gaz 1950/242	NZG 1950/242
South Road		DCC	Road by Conveyance pre 1900's. SO 10988.	N/A
South Road		DCC	Road By Proc 6602	Proc 6602
South Road	527	L Taylor	Lot 1 DP 1947	7D/1220
South Road	545	T & L Browne	Lot 12, DP 7145.	6B/1498
South Road	555	L & K van Rens	Lot 11, DP 7145.	5C/1482
Riselaw Road	2	M Proctor	Lot 1, DP 7462	3428
Riselaw Road	4	G McDougall	Lot 2, DP 7462	B2/573
Riselaw Road	6	P Whitson, W Whitson	Lot 3, DP 7462	3A/902
Short Street		DCC	Crown Grant Road SO 2602	SO 2602
Dunedin Southern Motorway		NZTA	Legal road by conveyance 17458	SO 11739
Dunedin Southern Motorway		NZTA	State Highway Road by NZG 2000/2187	NZG 2000/2187
Dunedin Southern Motorway		DCC	Pt Lot 1 DP 3493	NZG 2002/1037
Main South Rd		Baptist Union of New Zealand	Pt Lot 2 DP 387923	352058

Street	Street Number	Owner	Legal Description	Title
Dunedin Southern Motorway		NZTA	SO Plan 24774	NZG 2002/1037
South Road	572	W McLean, P McLean	Lot 1 Do 8375	13C/1017

The notation requested for the area covered by these alterations to designation is “**State Highway Purposes**”.

Refer to Appendix A of the attached assessment for the Location Map, Appendix B for the Designation Plan and Appendix C for the Land Requirement Plan.

No resource consents are required from the Otago Regional Council to undertake the proposed works.

An outline plan of the works will be lodged with the Dunedin City Council. This will be lodged once detailed design has been undertaken and prior to the construction of the proposed works being commenced.

An archaeological authority will also be required from the NZ Historic Places Trust for the proposed works and will be obtained prior to commencement of work.

Alternative options have been considered in the attached report.

The consultation undertaken with the community regarding the designation is outlined in the attached report.

The actual and potential effects that the proposed work will have on the environment, and the proposed mitigation measures, are described in the attached report.

The term sought to give effect to the designation is **10 years**, in accordance with Section 184 of the Resource Management Act 1991.

Additional information, in addition to that above, is set out in the following report.

---

Ian Duncan  
Acting State Highway Manager,  
Otago/Southland

Pursuant to authority delegated by NZ  
Transport Agency Board

Date.....

**Address for service:**

Opus International Consultants Ltd  
P O Box 1913  
DUNEDIN

Attn: Julie McMinn

Ph (03) 471 5591  
Fax (03) 474 8995  
Email julie.mcminn@opus.co.nz

## 1. Introduction

The NZ Transport Agency (NZTA) proposes to construct a four lane median divided full priority carriageway on State Highway 1 (SH1) between Barnes Drive and Lookout Point. The works also include either a bridge or pedestrian over pass or underpass between Riselaw Road and Mornington Road across state highway. Together these works constitute the Caversham Valley Safety Improvements (CVSI).

SH1 over the project route is designated by two designations:

- D456: SH1- Caversham Valley Road (from Sydney Street to Lookout Point) –“State Highway Purposes; and,
- D457: SH1 – Southern Motorway (from Lookout Point to between Abbotsford Rd and Sunnyvale Lane) - “Motorway Purposes (SH1).

The NZTA seeks to alter both these designations in the District Plan. D 456 will be modified to include the land required to construct the project. The NZTA also seeks to alter the area of D457 affected by the project and other required land around this section of the designation and include this within D 456 to be more accurately described as “State Highway Purposes”.

Under clause 29(2)(d) of Schedule 2 to the Land Transport Management Amendment Act 2008 (LTMAA)), designation of the former Transit New Zealand have been transferred to, and are held by, the NZTA, with the same status and priority as if Transit and the NZTA were the same entity. The NZTA is the successor to Transit New Zealand in terms of Section 2A of the Resource Management Act (1991) (RMA).

The NZTA manages the state highway network throughout New Zealand. The NZTA’s objective under **Section 94** of the Land Transport Management Act 2003 is:

*“.. to undertake its functions in a way that contributes to an affordable, integrated, safe, responsive, and sustainable land transport system.”*

The NZTA considers the CVSI works are necessary to assist in achieving this statutory objective and the other project objectives listed in this notice of requirement. In particular the works will improve the safety of the state highway in this location. In developing this project, the NZTA has sought to understand any potential adverse effects arising from the project including identifying issues raised by the community. This process has helped the NZTA to identify methods, where possible, to avoid, remedy and mitigate potential adverse effects.

The land required to be included in the designation includes existing highway and local road reserve, other reserve land, and freehold land. Most (75% - 85%) of the freehold land required is now in ‘Crown’ ownership (purchased by and for use of the NZTA), and the NZTA are actively seeking to acquire the balance of the land needed.

The purpose of this notice of requirement is to secure the designation for the proposed works so that design can be developed further. An outline plan of the works under section 176A of the RMA will be submitted to the Dunedin City Council DCC.

Planning for construction of the works continues to feature in the NZTA’s planning for state highway improvements, with a likely construction start in the 2012/2013 planning year. Commitment to construction will remain subject to the satisfaction of statutory processes (including this notice of requirement), acquisition of necessary land and confirmation of alignment between budget expectations and the pre-construction cost estimates.

No additional resource consents are required from the Otago Regional Council for the proposed works.

An archaeological authority from NZ Historic Places Trust is required prior to construction.

This assessment has been prepared in accordance with Section 181 of the RMA and provides a description of the proposed works with an assessment of actual and potential effects on the environment.

The following appendices are attached to the assessment:

- Appendix A: Location Map
- Appendix B: Designation Plan
- Appendix C: Land Requirement Plans and Certificate of Titles
- Appendix D: Proposed Options
- Appendix E: Option Development Diagram
- Appendix F: Consultation Report
- Appendix G: Urban Design Landscape and Visual Assessment
- Appendix H: Noise Assessment
- Appendix I: Ecological Assessment
- Appendix J: Integrated Traffic Assessment
- Appendix K: Social Impact Assessment
- Appendix L: Heritage Report

## 2. Background to Caversham Safety Improvements Project

Original proposals (circa.1960s) were to establish a route as a full motorway (i.e. 100km/h), and this is still part of the current regional land transport strategy. Since its inception however, the scope of the proposed works has been progressively tailored to suit the emerging traffic and travel need, justification in terms of standard assessment and evaluation criteria, funding ability and priority, and optimisation of value for money.

The Caversham Bypass was constructed in the 1980's and included constructing additional lanes between Andersons Bay Road and Barnes Drive.

Caversham Valley between Barnes Drive and Lookout Point was widened to four lanes with the addition of a downhill (north bound) lane in 1999. However the traffic lanes over a major part of this section are of limited width, shoulders are non-existent and side friction<sup>1</sup> continues to be a problem with residential landuse adjoining the road.

The NZTA formerly progressed the project by including it in the state highway 5-year forecast as announced in 2006. However the cost to develop a full 100km/h expressway option was estimated to be over \$60 million to build due to the requirements for large excavations at Lookout Point and it did not meet the required evaluation criteria. Instead, the concept of an 'urban arterial' emerged from a workshop which took place between the DCC and the NZTA in 2008. This concept has formed the basis to the Caversham Highway Improvements being progressed through to construction.

The first stage of the Caversham Highway Improvements, is the Caversham Four Laning between Andersons Bay Road and Barnes Drive, which is currently under construction. The second stage of the Caversham Highway Improvements is the CVSI, which is the subject of this notice.

---

<sup>1</sup> Side friction is defined as all events along the road which have an impact on speed and capacity, such as pedestrians, bicycles, and roadside parking.

### 3. Problem Description

The integrated Transport Assessment Report included in Appendix J, section 3, describes the problem with the existing layout. In summary the key issue is safety and includes the following:

- The existing Lookout Point intersection layout (South Road, Mornington Road and SH1) is constrained, due to development around the road and the requirement to provide access to private housing. The resulting corridor is narrow with no shoulders. The two staggered T intersections, tight horizontal geometry, and steep approach gradients also contribute to the challenges at Lookout Point;
- Lookout Point has major sight distance deficiencies as well as steep approach gradients. The problem is especially bad from the southern direction where the traffic is approaching the city from a 100km/h zone and although the speed limit is reduced to 50km/h approximately 300m from the crest the majority of the vehicles are still travelling at speeds around 60km/h to 70km/h;
- Sight distances to the west from both South Road and Mornington Road is poor being in the range of 80 to 85m. On the basis that north bound traffic is travelling at 60km/h the existing stopping sight distance is not enough and is only designed for vehicles travelling at 55km/h;
- The state highway has no refuge provision for vehicles turning into residential properties on the south side of the highway. The state highway is also intersected with the T intersections with Burnett and Aberfeldy Streets which are left turn in/left turn out. A 50km/h speed limit applies. The traffic lanes over a major part of this section are of limited width, shoulders are non-existent and side friction is a problem with the residential activities adjoining the road;
- Barnes Drive intersection is operating at near capacity resulting in delays for motorists and driver frustration;
- Crash history from the NZTA's Crash Analysis System (CAS) for the year period from 1 January 2001 to 31 December 2010 indicates there have been a total of 41 crashes within a 50m radius of the South Road/SH1 and/or Mornington Road/SH1 intersections at Lookout Point. Rear end/obstruction is the most common crash type. There also has been one fatality. Two crashes involved pedestrians crossing the road. Analysis of the last five years displayed a worsening in the severity of crashes;
- There have been a total of 47 crashes between South Road and Barnes Drive (exclusive of crashes within a 50 m radius of either intersection). The most common crash type was rear end/obstruction. Fourteen of the rear end crashes involved a vehicle parked on the southern side of the road between Barnes Drive and Aberfeldy Street;
- A total of 43 crashes have been recorded within in a 50 m radius of the intersection of Barnes Drive. Twenty six have been recorded on the westbound approach and it is these that have been analysed. One of these was a fatality. Twenty of the crashes were of the crossing/turning type.

## 4. Site Description

A location map is contained in Appendix A.

The CVSI project area includes the existing four laned section of SH1 along Caversham Valley Road and land adjacent SH1 to the north and south of the existing route. The length of the project areas between Barnes Drive and Lookout Point is approximately 1.2 km.

Currently SH1 in this location carries approximately 26,000vpd which makes it one of the busiest state highways in Otago. Adjacent landuse is predominantly residential with the south side of the state highway fully developed with older style houses. These mostly have no vehicle access and people use the state highway shoulder for parking. Continuous narrow footpaths exist on either side of the road.

On the north side of the state highway there are less residential properties including a number of properties where the dwelling has been removed. Most properties on this side were purchased by the DCC some years ago with ownership now transferred to the NZTA to facilitate the CVSI.

The valley slopes on the northern side of the state highway are zoned as an Urban Conservation Landscape Area in the District Plan and consist of a "green area" which can be considered as the southern extent of the Town Belt and consist of native and exotic vegetation.

At Lookout Point, the state highway is intersected by South Road and Mornington Road. The state highway has a very sharp summit crest curve and adjacent to the intersection of the state highway and Mornington Road is the Lookout Point Fire Station.

The road itself is a significant part of the existing environment as it has modified the surrounding environment greatly and separates the communities of Caversham and Calton Hill from the community of Mornington.

Opposite Burnett Street and parallel to the state highway is the excavation leading to an old rail tunnel linking the city with Kaikorai Valley. This was constructed between 1871 and 1872. Following construction of a new tunnel in 1910 the old tunnel was used as a conduit for DCC services and has recently been proposed for use as a cycling route. Other heritage points of interest include the existing route which has been the preferred route to Lookout Point since 1880s and the surrounding hill slopes, which have been subject to more intensive settlement since that time. Also within the project area is the grounds of the Industrial School/Boys Home founded in 1869 at 181 Caversham Valley Road.

Prior to the 1800s the area may have been occupied or travelled through by local Maori.

Two DCC reserve areas front the northern side of the state highway. The first, Caversham Valley Forest Reserve, just uphill of Aberfeldy Street, occupies an area of approximately 4ha and is a habitat for significant native invertebrate fauna, including the *Peripatus* (Onchpophora; primitive arthropod). The second, The Lookout Point Reserve is further uphill towards Lookout Point also on the northern side of the state highway is approximately half a hectare in size. In the immediate vicinity of the project area, vegetation in the Lookout Point Reserve is similar (although not as developed) to that of the Caversham Valley Forest Reserve, primarily exotic plants, interspersed with native plants.



## 5. Proposal Description

### 5.1 Alteration to Designation

This notice of requirement seeks to alter the existing designations to widen and ease the existing road alignment within Caversham Valley and improve the carriageway. Appendix B shows the overall extent of the proposed alterations to the designations and Appendix D shows the base option on which this notice is based.

Section 171(1)(c) of the RMA states that an assessment is required as to “*whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought.*”

Part VIII of the RMA allows requiring authorities to request land to be designated in District Plans for public works for which the authority requiring the designation has financial responsibility.

The NZTA has been approved as the requiring authority for the state highway network throughout New Zealand, including SH 1 through Dunedin City, and will have financial responsibility for the proposed works.

The NZTA as requiring authority is proposing to undertake a public work along SH1, the proposed CVSI. These works are required to improve the safety and efficiency of the state highway corridor between Barnes Drive and Lookout Point as well as improving the safety of the intersections at Lookout Point thus achieving the NZTA’s objective for this section of SH1.

THE NZTA’s objective under the LTMA is “*... to undertake its functions in a way that contributes to an affordable, integrated, safe, responsive, and sustainable land transport system.*”

Designations as a long term planning tool allow the NZTA to manage SH1 as a strategic and important piece of infrastructure which is integral to the national state highway network in an efficient and consistent manner.

The state highway network can also be considered a physical resource, and as such under the RMA it must be sustainably managed. The designation mechanism is used by the NZTA as part of a national strategy for establishing, operating and maintaining a safe and efficient state highway network throughout the country. The designation alteration will enable the proposed CSVI to be established, operated and maintained in a manner that is consistent with management of the existing state highway network through Dunedin City, and throughout the country, which is also designated. Providing for the proposal by way of the designation alteration will therefore allow for consistent, sustainable management of the state highway network.

### 5.2 The Proposed Works

#### 5.2.1 The Base Option

The works proposed in this Base Option, are those upon which the community consultation was based (Option A) – see ‘Consultation’, and is illustrated in Appendix D. The base option is the preferred option as it delivers the required safety and connectivity improvements. Key features include:

- The road alignment will be widened and eased;
- The state highway will be widened to include a kerbed central median;
- The roadside shoulders will be widened to 1.5m – 2.1m (without parking)
- 34 houses in total will be removed from along Caversham Valley Road. Those remaining on SH1 Caversham Valley Road, will have improved access and parking via a separated service lane;
- Improved intersection layout at Lookout Point (refer Lookout Point options below);

- A shared path on the north bound (downhill) side of the state highway for pedestrians and cyclists (uphill). The shoulders on the state highway will be widened for cyclists but is not intended to promote the north bound lane for cyclists by marking the shoulders as a cycle lane. The existing cycle route via South Road will continue to be available;
- At Barnes Drive, the current traffic signals will remain and be improved with the addition of separate lanes for left turning traffic and increased stacking length for turning traffic;
- At Burnett Street, only left turns onto the state highway will be able to be made. To access Burnett Street motorists will need to approach from South Road (by turning off the state highway at the Barnes Drive traffic signals);
- At Aberfeldy Street, although the intersection will be modified, essentially there will be no change to the access currently available;
- The speed limit on the state highway will be increased from 50km/h to 60km/h.

The base option also includes a new road bridge over the state highway, linking Mornington Road with Riselaw Road as well as:

- A new service lane for the remaining houses on the top of Caversham Valley Road, which will also link into South Road
- Differing intersection movement ability, refer to the black arrows within Appendix D.

To enable these safety improvements to be achieved, some restrictions to current traffic movements will be required, including:

- At Riselaw Road, the road will be lifted to the new bridge over the state highway. It will not be possible to access the bridge from South Road. Therefore, a turnaround area will instead be formed at the top of South Road.
- A footpath between Riselaw Road and South Road will be provided and it will still be possible to fully access South Road from Barnes Drive, Cole Street, Sidey Street, and those routes linking to Sidey Street (including Waimea Ave and Ryehill Street). The new service lane for the remaining houses on Caversham Valley Road will also link into South Road.
- At Short Street, the connection onto the state highway will be closed, and a turnaround area constructed instead. It will still be possible to walk from Short Street to Mornington Road.

As a result of consultation, a number of enhancements to the base option may be further investigated and these are described in the consultation section, Section 7 below. If these do result in changes to the base option, they will become part of the outline plan of works for the proposed works.

### 5.2.2 Urban Design, Landscape and Visual Assessment

A Landscape and Urban Design Strategy was developed in 2009 for the full extent of the project. This strategy identified the urban design and landscape issues for the proposed works, and proposed a concept to mitigate the effects, while maintaining the character of the area and providing accessibility for both traffic and pedestrians. The Urban Design Strategy has been reviewed to identify potential mitigation with an overall aim to integrate the state highway into the surrounding landscape form and urban character and increase the amenity and connectivity of the area.

For the CVSI section of the overall project, the 2009 Strategy remains valid, and has been used as the basis for mitigation proposed for the CVSI. Appendix G includes the Urban Design, Landscape and Visual Assessment Report that identifies proposed mitigation and in some instances mitigation that needs to be investigated further.

### 5.3 Timing of Construction

The construction of CVSI Barnes Drive to Lookout Point section of the Caversham Highway Improvements is proposed to commence no later than mid 2012, to dovetail in with the completion of construction of the Caversham Four Laning: (Andersons Bay to Barnes Drive). This timeframe however, remains subject to procurement of statutory consents, acquisition of the balance of land as required, and confirmation of funding.

### 5.4 Maintenance

The NZTA maintains the state highway network as part of its on-going network maintenance operations, in accordance with standard procedures. Once constructed, the new state highway will be included as part of the on-going network maintenance operations. The Mornington Road – Riselaw Road link will be transferred to the DCC to manage as a local road, excluding the bridge structure itself.

### 5.5 Outline Plan

Section 176A of the RMA requires an outline plan of works be submitted to consent authorities for works to be carried out on designated land, to allow the consent authority to request changes before construction commences.

An outline plan of works will be submitted to the DCC once the detail and full extent of the CVSI is known.

## 6. Consideration of Alternatives

### 6.1 Original Proposals

Original proposals (circa 1960s) were to establish a route as a full motorway (i.e. 100km/h) and this still is what is promoted within the current Regional Land Transport Strategy. To achieve this would have entailed tunnelling through Lookout Point to achieve the necessary summit curve. Tunnelling options, were assessed during early option development through the 1960's and 70's but have not been pursued into the current scheme assessment as they were not affordable, nor provide value for money.

### 6.2 2009 Interim Scheme Assessment Options (SAR)

A total of 4 options were investigated and described in detail in the SAR being Options 3a, 3b and 4a and 4b. These are summarised below:

NB: The SAR has not been attached to this notice but is available for viewing at the NZTA Dunedin office.

**Table 1 – Options included in 2009 SAR**

Option	Description	Assessment
Do Minimum	Retaining the existing layout with continued maintenance.	Does not address the safety issues at Lookout Point or provide adequate lane widths and parking areas.
Option 3a	Widening Caversham Valley Road by filling over the old railway tunnel entrance; widening the shoulders/parking area for the houses fronting the state highway; installing a 3m wide median and improving Lookout Point intersection to a grade separated layout and provision of a bridge linking Riselaw and Mornington Roads.	Was rejected due to impact on the old tunnel entrance which was being promoted as a possible cycle trail linking Caversham and Kaikorai Valley Road. It did not adequately address side friction issues created by the properties fronting the state highway.
Option 3b	Widening Caversham Valley Road and avoiding covering the old railway tunnel entrance but includes the removal of 22 houses. Also includes the improvement of the Lookout Point intersections to a grade separated lay-out and provision of a bridge and a service lane for houses at the top of Caversham Valley Road. This improvement is in addition to the four-laning north of Barnes Drive.	Option 3b was identified as the <b>preferred option</b> with a total reduction in journey time of approximately 15% to 43% in the northbound direction and 15% to 40% in the southbound direction, with the largest savings occurring during the peak flows to and from Dunedin CBD. It also reduces community severance with the provision of a bridge at Lookout point.
Option 4a	Includes installing a flush median from Lookout Point to south of Aberfeldy Street and construction of a pedestrian footbridge at Lookout Point. Right turn movements from the side roads at Lookout Point are banned. These improvements are in addition to the four-laning north of Barnes Drive.	Option 4a does not provide the connectivity benefits of 3b.
Option 4b	Option 4b closely matches 4a but with the inclusion of a vehicle bridge linking Riselaw and Mornington Roads instead of a pedestrian over bridge.	Option 4b does provide connectivity but does not resolve some of the safety issues around the Lookout point intersections.

The 2009 SAR identified Option 3b as the preferred option.

### 6.3 Do-minimum Option

Continued maintenance is no longer considered an option as there would be no improvement to the safety concerns at Lookout Point or along Caversham Valley Road. The inadequate lane widths would remain as would a lack of shoulder and parking space.

### 6.4 Option Development

Appendix E includes a diagram that shows the development of the options and changes in their titles over time. Appendix D includes plans of the alternative options progressed to community consultation and which are discussed below.

As a result of a discussion between the DCC and the NZTA, a decision was made to resolve the severance issue between South Road and Mornington Road if at all practicable. From the two grade separated options (3a and 3b) that were viable in 2009, only 3b was considered acceptable as it avoided the old tunnel entrance.

However Option 3b did not meet all the required evaluation criteria and as a result, a new option which includes a vehicle bridge has been developed. This is now referred to as the base option (refer Appendix E) and replaces the original preferred Option 3b.

The three options brought forward from the scheme assessment and discussions with the DCC for ongoing investigation and community consultation included:

1. The base option (a variation from Option 3b)
2. Alternative 1 (option 3b)
3. Alternative 2 (option 4a)

Alternatives 1 and 2 were also considered in the development of the options alongside the base option. The base option was put out to community consultation as Option A. Alternative 1 and 2 were referred to in community consultation as Option B and C (Refer Figure in Appendix E).

Features of Alternative 1 include a slightly longer bridge joining Riselaw Road with Mornington Road over the state highway as well as most of the other features included in the base option.

Features of Alternative 2 include differing intersection movement from the base option and Alternative 1 (refer to the black arrows in the plans in Appendix D) and a shared pedestrian/cycle only overpass or underpass across the state highway, with no provision for vehicles. This option does not include a road bridge.

## 7. Consultation

Consultation has been undertaken with a wide range of key stakeholders that includes directly affected parties and other interested parties with feedback received about the project at various time since 2008. Appendix F includes the consultation feedback and assessment undertaken for the CVSI. Stakeholders consulted as part of the project include the following parties:

- Dunedin City Council
- Otago Regional Council
- NZ Historic Places Trust (Otago)
- Kai ti ki Otago
- Department of Conservation (Dunedin Office)
- Forest and Bird
- NZ Fire Service
- Order of St John
- Automobile Association
- Heavy Haulage Association
- NZ Road Transport Association
- NZ Police
- DCC Parks and Recreation
- DCC Water and Waste Services
- Ministry of Education
- Calton Hill Primary School
- Delta Dunedin
- New Zealand Road Transport Association
- Directly affected landowners
- Caversham/ Calton Hill Community

### 7.1 2008 -2010: Early Consultation

Consultation and information sharing on the Project at the initial stages took place with key stakeholders, and directly affected landowners, the DCC, and the community around Caversham Valley Road, Aberfeldy Street and Barnes Drive. Initial meetings with stakeholders took place in December 2008 where stakeholders were informed of the project concept and that it was in its early stages.

From October 2008, the NZTA and its consultants began holding individual meetings with landowners whose land may be directly affected by the project. Issues raised included:

- Access to their properties.
- Concern over the potential for leaving their homes and limited options for where to move.
- Potential for land acquisition has been an emotional issue for many landowners.
- Lack of certainty around the project.
- Interest in selling their property.

- Queries about the type of compensation that may be available.
- Longevity of the Fire Station.
- Safety of crossing the road.
- Noise issues.
- Configuration of Lookout Point Bridge.
- Cycling and Pedestrian Facilities.

In February 2009, a survey on walking and cycling habits was delivered to 156 residents of Caversham Valley Road and the Aberfeldy Street/Barnes Drive area. The survey resulted in the following feedback:

- Of those residents that replied, many walk in the area regularly.
- Crossing Caversham Valley Road is a big issue for pedestrians. Some are using dangerous and unmarked crossing points. Also, a number of respondents commented that key crossing points such as Barnes Drive were very dangerous.
- Fewer respondents cycle regularly, and especially not on Caversham Valley Road. Safety appeared to be a key issue in this trend.

## 7.2 2011 Community Consultation

Consultation with the local community and other key stakeholders on three Lookout Point options began in February 2011. An initial letter drop to over 400 residences in the project area included the information on the Base Option and Alternatives 1 and 2 (Options A, B and C), a NZTA project update flyer and an invitation to local residents and stakeholders to attend an information evening held at Calton Hill School on 17 March 2011.

Other community consultation methods used included media releases; information in the ODT and replying to letters to the editor. These methods advertised the NZTA website as well as the facility to email the project at [caversahmhighway@nzta.govt.nz](mailto:caversahmhighway@nzta.govt.nz) with questions and to find out more about the project.

The purpose of the information evening was to share information with residents and the wider community on the options the NZTA had identified to improve the safety of the state highway corridor and Lookout Point. The evening was also to provide residents and the wider community with an opportunity to review and comment on the options presented.

Feedback on the options was requested and welcomed by the NZTA. The issue most raised by participants was the effect of the project on local road access and connectivity. This issue is divided into the following concerns:

- Reduced travel convenience by increasing travel times and distances on the local road network.
- Improvements and reductions in traffic safety as a result of changes in the local road network. South Road and Riselaw Road were mentioned the most;
- General impacts on the local road network as traffic is displaced as a result of the road closures and intersection changes e.g. closure of Short Street and the changes at Burnett Street;
- The intersections of Barnes Drive and South Road and Barnes Drive and SH1 caused the most concern.

The second issue that participants were most concerned about included effects on residential amenity. This issue can be divided into the following concerns:

- Noise effects where submitters identified that there are existing noise issues that will be exacerbated by the project.
- Changes to outlook, particularly as a result of the overbridge. Landscaping may or may not have a positive effect depending on the details of the landscaping proposed; and,

- A reduction in traffic safety particularly on Riselaw Road, which some submitters are concerned will become a drag strip for boy racers.

Other issues that were raised include:

- Concerns that the movement of people and vehicles in emergency situations will be hampered by the proposed road closures.
- Reduced land stability as a result of the CVSI; and,
- Changes in bus stop locations and bus routes causing inconvenience and reduced mobility.

Those people who could not make the information evening or who wanted to send more detailed feedback were encouraged to send responses in via the website or the project email.

In response to the feedback, the NZTA has endeavoured to answer all emails sent through the website and Caversham Highway email address and also has sent out a letter to the community and stakeholder responding to the Frequently Asked Questions arising from the information evening. A copy of this letter is included in Appendix F.

### 7.2.1 Outcomes and NZTA Responses to Community Consultation

As a result of the consultation, and as part of the ongoing development of the CVSI options, the following is either still being investigated or has been incorporated into the project:

- Whether South Road can be connected to the existing state highway, which would mean two intersections in close proximity. The investigation is not yet complete as a traffic safety audit on the intersection layout needs to be undertaken. If as a result of the safety audit this did go ahead, it would be considered as an enhancement to the base option;
- Whether the restriction of not being able to turn left into Burnett Street can be revisited if there is enough land available to accommodate this change just east of this intersection;
- Whether the existing noise environment for the dwellings at the top of Caversham Valley Road can be mitigated. This is now a confirmed mitigation measure with the noise assessment in Appendix H identifying that a 1.8m barrier along the dividing strip between the uphill carriageway and the service lane that will reduce the existing noise environment;
- The CVSI include pedestrian and cycle links across and under the bridge, down the state highway and linking into existing pedestrian/cycle ways east of the project area;
- The CVSI do not cover the old Caversham Rail Tunnel;
- Ensuring the CVSI did not directly affect the Lookout Point Fire Station or adversely affect the emergency response from the Fire Station; and,
- Development of a Landscape and Urban Design Strategy that takes cognisance of community consultation.



### 7.3 Statutory Authority and Agency Consultation

The main methods of consultation with key stakeholders were through letter sharing of information and seeking comment and/or meetings. The responses received included:

Statutory Authority or Agency	Key Issues	Outcome /Response
Dunedin City Council	<ul style="list-style-type: none"> <li>Effects of project on DCC infrastructure and services;</li> <li>Effects of project on amenity and urban design including provision for walk/cycle ways;</li> <li>Effects of project on Caversham Valley Bush Reserve and the Peripatus.</li> </ul>	<ul style="list-style-type: none"> <li>NZTA has consulted with DCC throughout the project to ensure the project design takes into account DCC preferences on design of bridge and effects on local roads;</li> <li>NZTA has responded by working with the entomologist chosen by the DCC to assess the effect of the project on the Peripatus;</li> <li>NZTA will continue consultation throughout the development of the project</li> </ul>
Otago Regional Council	<ul style="list-style-type: none"> <li>ORC concerned about the changes to the bus route up South Road.</li> </ul>	<ul style="list-style-type: none"> <li>NZTA are examining alternative bus routes and also assessing whether South Road can rejoin the state highway;</li> <li>Consultation will continue with the ORC;</li> </ul>
NZ Historic Places Trust (Otago)	<ul style="list-style-type: none"> <li>Happy with heritage report done to date;</li> <li>Advised would like to be informed of the built heritage recordings of the houses to be removed.</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing consultation and provision of built heritage reports on the identified houses to HPT prior to demolition;</li> <li>An archaeological authority application will also be lodged with HPT..</li> </ul>
Kai tahu ki Otago Limited	<ul style="list-style-type: none"> <li>Interested in final design</li> <li>Stated no cultural impact assessment required</li> </ul>	<ul style="list-style-type: none"> <li>Provide ongoing information on development of design;</li> <li>Inclusion of accidental discovery protocol as part of the project.</li> </ul>
NZ Fire Service	<ul style="list-style-type: none"> <li>Prefer Base Option (Option A) as it provides better access for emergency response;</li> </ul>	<ul style="list-style-type: none"> <li>Ensure emergency response access to and from the Fire Station is accommodated in the Base Option Design.</li> </ul>
Department of Conservation	<ul style="list-style-type: none"> <li>The ecological report proposes some good measures to mitigate impacts on Peripatus and other native species;</li> <li>Also suggest undertaking a survey to obtain a clear picture of the size of population and area inhabited;</li> <li>DOC would support research to learn more about this species</li> </ul>	<ul style="list-style-type: none"> <li>The proposed NZTA mitigation method to commission a management plan for the reserve should also include as part of this process discussion with DOC to incorporate the comments and suggestions made.</li> </ul>
Southern District Health Board	<ul style="list-style-type: none"> <li>Commend NZTA for incorporating cycling and walkways as part of state highway design;</li> </ul>	<ul style="list-style-type: none"> <li>Social Impact Assessment undertaken on the community</li> <li>Urban Design Strategy including provision of</li> </ul>

Statutory Authority or Agency	Key Issues	Outcome /Response
	<ul style="list-style-type: none"> <li>• That cycle ways need engineering measures which create a safe comfortable direct and coherent and attractive path as outlined in the Cycle Network and Route Planner Guide (2004);</li> <li>• Wanted confirmation that environmental noise will be assessed in accordance with NZS 6806;</li> <li>• Bus stops reviewed taking into consideration proximity of residential developments;</li> <li>• That during construction that those people's views who live nearby are considered and there is ongoing dialogue.</li> </ul>	<p>walk/cycle ways;</p> <ul style="list-style-type: none"> <li>• Noise assessment has been undertaken according to NZS 6806.</li> <li>• Ongoing consultation with ORC over bus route and location of bus stops;</li> <li>• The Construction Management Plan (CMP) will include mitigation methods for those properties directly affected by construction.</li> </ul>

#### 7.4 Directly Affected Party Consultation

There are approximately 89 affected properties (including areas of road affected) and approximately 34 houses to be removed. All directly affected properties owners have been consulted with and most properties that are required have either been purchased or discussions and/or negotiation over the property or part of the property required are ongoing.

## 8. The Alteration to Designation Process under the RMA

Pursuant to Section 167 of the RMA, the NZTA has been approved as the Requiring Authority for the state highway network throughout New Zealand. Section 181(1) of the RMA provides that a Requiring Authority may give notice to a territorial authority of its requirement to alter a designation or a designation requirement as follows:

- “(1) A requiring authority that is responsible for a designation may at any time give notice to the territorial authority of its requirement to alter the designation*
- (2) Subject to subsection (3), sections 168 to 179 shall, with all necessary modifications, apply to a requirement referred to in sub section (1) as if it were a requirement for a new designation.”*

Sub section (3) does not apply as written approval from landowners directly affected has not been sought.

## 9. Assessment of Effects on the Environment

The reference to “*effects*” is a reference to all effects, whether positive or negative. The actual or potential effects of the proposed CVSI are considered to be:

- Positive effects
- Effects on urban design and landscape values
- Effects from earthworks
- Effects from operational Noise
- Effects on Caversham Valley Bush and Lookout Point Reserves ecology
- Effects on traffic and traffic safety
- Effects on people and the community
- Effects from construction

### 9.1 Positive Effects

The following positive effects are expected to result from the CVSI:

- Improved traffic safety and some efficiency gained from widening the state highway;
- Improved corridor amenity for cyclists and pedestrians
- Improved parking safety for remaining residents along Caversham Valley Road
- Improved visual amenity along corridor

### 9.2 Effects on Urban Design and Landscape Values

Appendix G includes the Urban Design, Landscape and Visual Assessment Report (UDLVA).

The UDLVA identifies the following issues:

- Those that affect the connectivity of the area;
- Those that affect the local character of this urban landscape; and,
- The visual effects and how these changes are seen by the local community

#### 9.2.1 Effects on Connectivity

The UDLVA (Appendix G) states on page 4:

*“The intersection and overbridge at the top of the hill will alter movement patterns for the community. The current proposal seeks to optimise this but there are inevitably compromises. Some existing connections and safety will be improved, others are restricted. The more connections and alternative routes which are accessible, the greater the level of choice and connectivity for the community....”*

In summary the UDLVA goes on to say the changes to connectivity include:

- Cross highway movement is limited to the bridge at the top of the hill and Barnes Drive;
- The base option improves the movement along Riselaw Road/Mornington Road, however the bus route will be affected. The service lane will allow bus access along the state highway but the route will no longer go up South Road;
- The Barnes Drive intersection traffic lights provide a crossing for pedestrians on the east side of the intersection. However, the nearby intersection of South Road at the base of the Hill close to the Barnes Drive lights (which is outside the project area) deters pedestrians users at busy times and involves complex crossings for pedestrians with some risk to users;
- The proposed bridge options will improve the movement along Riselaw Road and Mornington Road and be of particular benefit to local schools;
- Informal crossing points from the houses on the south side of CVR and from Burnett Street to Aberfeldy and Balance Streets will be affected by the widening of the road. The two formal crossing points at Lookout Point and Barnes Drive will require considerable additional distance and effort to cross the state highway. A suggested crossing/rest point on the median in one defined place is suggested;
- Pedestrian and cycle routes east/west are well provided for and north/south access ways link to these ways. On the north side, the proposed cycle/walkway is parallel to the highway. On the south side there is the potential to develop the route from Burnett Street to Caversham Place, to encourage the use of Barnes Drive intersection.

Overall, the UDLVA states the project will improve connectivity between Mornington Road and Riselaw Road, and will also improve cycle/walkways adjacent the State highway. However, it will continue to restrict cross highway movement because of its width and traffic volume, and there will be local community effects including accessibility to the bus service for South Road residents.

The final option identified for construction will be designed taking cognisance of the Updated Landscape and Urban Design Strategy and final mitigation will be submitted with the outline plan.

The design of the Base Option will now also include a pedestrian refuge for people wanting to cross from the Burnett Street area to Aberfeldy Street and vice versa. It will be located in the median opposite about 107 Caversham Valley Road.

Consultation with the ORC and the community (also refer Section 6) also raised concerns over any option that closes South Road's exit onto the state highway. This closure would prevent the current bus service coming up South Road and around into Riselaw Road. The CVSI will require the existing bus circuit around Calton Hill to be reversed, and that unless a link from South Road to Caversham Valley Road is able to be established, the route up Calton Hill will need to change from South Road to Caversham Valley Road. Refer to Appendix J for suggested bus route diagram.

The NZTA has suggested two alternatives bus routes that could be used. However, as a result of consultation, this issue is subject to ongoing discussion and design effort. The result of the consultation with the ORC will be submitted as part of the outline plan.

### 9.2.2 Effects on Local Character and Urban Landscape

The UDLVA (Appendix G page 6) states the loss of houses on the lower southern slopes of Caversham Valley will not alter the *"general pattern of stand alone houses in gardens on these slopes. The retention of the houses higher up the hill retains the appearance of the walls and elevated houses seen when travelling south ..."*.

The UDLVA also goes on to say *"there will be a change for houses in the vicinity of the overbridge, which will relate primarily to change in the outlook from these. Those at the head of South road may feel impacted by the taller batter/abutment slopes in close proximity. There is some potential to screen/green the structure and integrate it into the landform"*

The report states loss of vegetation due to construction along the northern slopes of the valley will affect the margins of the two reserves (the Lookout Point Reserve and the Caversham Valley Bush Reserve, home of the Peripatus), and the vegetated green appearance of the valley. However, these effects can be remediated over time by removing existing weed species and planting the batter slopes with local species over time. Also, there is an opportunity at the reserves to improve the margins and planting habitats for both local flora and fauna, transitioning them to local native species rather than exotic trees (refer to the Ecology Report for further mitigation for the Caversham Valley Bush Reserve).

The proposed noise mitigation structures could also affect the residential character of the area (refer to Section 8.3 and Appendix H for a full discussion on the noise effects arising from the project). These structures will improve amenity for some residents but may also impact on the character and will therefore need to be sensitively designed. Plans of the proposed noise mitigation structures will be submitted as part of the outline plan. However, the report goes on to say *"noise fencing is likely to be of a consistent type and height and at 1.8m comparable with typical boundary fencing. Carefully designed and located, these could avoid the appearance of an adjunct to the highway and retain the residential character of the area"*.

### 9.2.3 Visual Effects

Page 7 of the Urban Design, Landscape and Visual Assessment (UDLVA) (Appendix G) discusses the key visual effects resulting from the project as follows;

Issues where visual change will be experienced and noticeable include:

- The bridge structure – visible from the state highway and adjacent properties;
- The raised road approaches to the bridge, particularly Riselaw Road;
- Noise wall and service lane construction;
- The houses on South Road, where houses lower down the slope to the state highway have been removed.

The report states the bridge effects will short term as well as long term. The viewing audience for the short term effects will be the state highway users who will see the bridge for a short time as they travel under it going into or from Dunedin. For tourists travelling into the city, their first view of Dunedin will be from the crest of the hill as they pass under the bridge structure.

The viewing audience for the long term effects will be the "surrounding dwellings and gardens, with the changes being a permanent element in their view, and seen over long periods. The visual effects of the changes will be greatest for those few closest to the new bridge and associated retaining walls, where these are a larger component of the view, due to proximity, and where the orientation of main windows is toward the structures. (Appendix A, Plan 4 – Visual Effects.) These effects can be ameliorated by good bridge design and well located planting." (page 8 UDLVA Report Appendix G).

The report goes on to discuss some loss in amenity for surrounding dwellings from the raised road to the bridge. The raised road will change the surrounding views from houses in upper side of Riselaw Road which are currently elevated to look over this road but will lose some of this elevation and the road traffic becoming more apparent as the fore ground to some residents views.

On the downhill side of Riselaw Road and at the top of South Road although access and views are mainly to the north the approach road may also result in a loss of openness for some houses.

However *"there is potential for mitigation through design in the form and materiality of the bridge, retaining wall and abutment structure. This should take account of the masonry vernacular of the city, the location on the old volcanic rim of the city' (as instanced in the Urban Design Strategy 2009). Good design, materiality of retaining walls and planting within the area of the works, can be used to soften structures and blend in with the Caversham Valley slopes."* (page 8 UDLVA Report, Appendix G)

The noise attenuation structure intended for the new service lane and the houses that remain at the top of CVR may also modify views from houses. *"There is potential to mitigate the effect by careful design of any fencing, to be kept in scale with housing"* (page 8 UDLVA Report, Appendix G).

With the removal of the houses fronting the State highway, views for houses on South Road will open up to the north and east. Effects of any noise walls may restrict views if located close to the dwelling, but has the potential to provide an attractive foreground buffer to the state highway in this area.

The report summarises the visual effects as follows:

*"The visual effects on specific properties will vary, with those in the immediate vicinity of the bridge structure and intersection at Riselaw Road, the most affected. The overall effect of the scheme is, however, likely to be limited. Careful consideration needs to be given to the form and treatment of batter slopes in close proximity to houses, and boundary plantings, and in placement of signage and lighting. There is opportunity on the west side and between Burnett Street and Barnes Drive to add open space and vegetation elements which will add to the amenity of the area and enhance the linkage to Caversham Village."*

#### 9.2.4 Conclusion

The CVSI will alter the surrounding urban fabric. Some changes are beneficial, particularly the improved amenity for Caversham Valley Road and South Road residents provided by noise attenuation, amenity planting and pedestrian/cycle ways along the state highway. While required mitigation has been identified, the final design of this mitigation has not yet been completed. Final mitigation design will be provided as part of the outline plan process.

A Landscape and Urban Design Strategy has been progressed as the mitigation concept for the project and gives an overall direction in terms of how effects on landscape and the urban character should be mitigated. This strategy will be used as the basis for detailed mitigation for landscaping and mitigation for structures such as the proposed noise mitigation structures and the design of the bridge. However, in ongoing development of the design at the outline plan stage, the report states particular attention should be paid to:

- Reviewing potential for additional local road connection at Burnett Street and South Road/Riselaw Road
- Function, form and materiality of the bridge and retaining wall structures;
- Location of vegetation to the margins of the state highway edges and separating the state highway from pedestrian ways;
- Replanting of the cleared house sites south of Burnett Street;
- Reviewing treatment of pedestrian access from South Road/Caversham Village along the state highway;
- Managing vegetation and using native plant species on the north side, adjacent to the existing reserve areas to improve the quality of habitat for both fauna and users;
- Reviewing the potential for intermediate crossing points across the state highway, north/south;
- Tailoring noise fencing to a positive feature both in terms of noise reduction and visual appearance.

### 9.3 Effects from Operational Noise

Appendix H includes the Noise Assessment Report for CVSI. The report gives regard to potential operational noise road-traffic effects of the CVSI on the general surrounding environment. The assessments primary concern is road traffic noise effects on premises near the project and particularly residences.

The assessment used a regularly adopted process and good practice that:

- Measured and assessed existing ambient noise levels;
- Calculated the road traffic noise levels expected once the project is operational;
- Determine the impact of the expected road traffic noise levels, with reference to the New Zealand Standard 6806-2010 Acoustics- Road traffic noise- new and altered roads; then
- Developed best practicable noise mitigation options that meet the applicable New Zealand Standards.

The results from this assessment are detailed in the noise assessment report along with an explanation of methodology and explanation of assessment criteria including NZS 6806. However in summary the report states:

*“Noise levels from the operation of road traffic on the project will be substantially unchanged for many properties that are near to the project, relative to the noise levels that would exist without the improvements. The project does increase the road traffic noise levels for some properties through the project’s removal of some buildings that currently provide screening.”*

The groups of houses affected by road noise include the following:

- **South Road:** Although between Burnett Street – Lookout Point the project moves SH1 slightly away from residences the removal of 61 – 109 Caversham Valley Road exposes the South Road houses behind these to an increase of SH1 road traffic noise. The increases in noise for these houses mostly stay within NZS 6806 Category A Limit of 64 dB.

However, for three houses 472 South Road, 67 Caversham Valley Road and 8 Burnett Street, the noise change places them in the NZS 6806 Category B Limit of 67dBA.

For houses 468, 482, 484, 486, 488, 490, 492 and 494 South Road the removal of properties adjacent to the southern side of Caversham Valley Road causes their noise levels to increase between 5 and 9dBA, but noise levels are still within Category A of NZS6806.

The best practicable option identified in the noise assessment to date for this group of houses at this point is the construction of a 1.8 m noise barrier/fence along the property boundaries. This fence will not entirely mitigate the increases in noise for 472 South Road, 67 Caversham Valley Road or 8 Burnett Street and these houses will be further investigated prior to construction to identify whether some form of acoustic treatment of the building is practicable.

- **Caversham Valley Road.** There is no noise increase to this group of houses that front Caversham Valley Road between 111 Caversham Valley Road to 163 Caversham Valley. In fact, there is minor reduction due to the state highway being moved to the north away from these houses. However, the existing noise environment from road noise for these dwellings is greater than NZS 6806 Cat B. As a consequence of the project, the NZTA propose improving the noise environment by constructing a 1.8m noise barrier along the service lane median which will decrease road noise for the dwellings between 121 to 163 Caversham Valley Road. The service lane will be extended as far as practical towards 111 Caversham Valley Road so the proposed barrier is effective for as many houses as practicable. If the service lane does not cover, for example, the houses up to and including 111 Caversham Valley a 1.8m noise barrier/fence will be constructed along the front boundary of these properties.

- **Residences at and above Lookout Point:** No mitigation is proposed for the South Rd residences at Lookout Point, Columba Avenue, Ensor Street, Riselaw Road and Mornington Road as they either have an existing noise environments of NZS 6806 Category B that cannot be practically mitigated, and/or are not affected by a significant increase in noise from the project e.g. the houses at the top of Lookout Point along South Road or have imperceptible to small increases in noise due to the project. The houses along Riselaw Road Columba Avenue, Ensor Street and Mornington Road also have a small increase in noise as a result of Riselaw Road being lifted to climb up to the proposed bridge.

The Fire Station and 567 South Road both have an existing noise environment above NZS 6806: Category B. Any additional noise at these sites as a result of the project will be imperceptible. Therefore no mitigation is proposed.

- **Residences on northern side of state highway:** A group of houses of houses in Balance Street and Aberfeldy Street show noise levels that fall within NZS Category B levels. Most of these houses had existing noise environments of NZS 6806: Cat B levels and the project only increases noise by 1- 2dBA which is barely perceptible. No mitigation is proposed for these houses due to the existing noise environment and the fact that they are located on the Caversham Valley slopes where a noise barrier would not be considered a practicable mitigation.



### 9.3.1 Conclusion

The CVSI will result in increases in road noise for some residences adjacent to the project. The noise assessment has identified the best practicable option to mitigate these effects. However, there will be some instances where increases in road noise as a consequence of the project are not practical to mitigate. In these instances the increase in noise as a result of the CVSI still falls within allowable limits set with New Zealand Standard 6806-2010 Acoustics- Road traffic noise- New and altered roads.

The NZTA will however, adopt the following mitigation methods prior to or as part of construction:

- Construct a 1.8m noise barrier between 111 Caversham Valley Road and 163 Caversham Valley Road. The proposed mitigation in this location will improve the existing noise environment.
- For three houses – 8 Burnett Street, 67 Caversham Valley Road and 472 South Road – potential noise mitigation will be 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.

The operational noise effects as a result of the CVSI cannot be entirely mitigated. When assessing the CVSI in their entirety, these noise effects need to be balanced against positive effects arising from the project. The NZTA consider that with the mitigation listed above, any noise effects can be balanced against positive effects from the project.

## 9.4 Effects on Caversham Valley Bush and Lookout Point Reserves Ecology

An Ecological Assessment of the effects arising from the proposed works on the ecology of the state highway footprint and adjacent areas has been undertaken and included in Appendix I. The report summarises the key areas affected by the state highway footprint as the area on northern side of the existing state highway corridor. Two DCC reserves are located within this area as follows:

- The Lookout Point Reserve is a small (approximately 0.5 ha) reserve at the western end of the project area, near the Mornington Road intersection. It has a canopy dominated by mature sycamore, pine and eucalypt trees with an understory of introduced shrubs regenerating sycamore and naturally regenerating native sub canopy and forest margin species; and,
- The Caversham Valley Bush Reserve is larger approximately 3.4 ha and is located further down the valley. More than 50% of the reserve has been cleared of all vegetation and woody material and replanted in native seedlings.

The land between these two reserves is owned by the Walsh family and Mr D. Randle, and has significant pines, euclypt and sycamore tree cover with substantial native plant regeneration under the canopy. This land along with sections of the larger reserve where trees still form a canopy, is the home of a population of *Peripatus*. The tree covered south facing aspect of this site creates cool, constantly moist conditions and an abundance of rotten logs and stumps on the forest floor that is ideal habitat for *Peripatus* and an array of other native invertebrates. The area is also well frequented by a variety of native forest bird species.

The ecological assessment states:

*“The proposed highway improvements will remove approximately 0.5 ha of tree covered reserve land. The impact of removal of the existing vegetation on this land is not considered to be greater than minor in terms of the quality of the vegetation and the value of the habitat to native birds, however, the land to be cleared is possibly occupied by *Peripatus*. While the *Peripatus* population is currently known as *Peripitoides novaezealandiae*, a species not classified as threatened, there is a reasonable likelihood that the population found in the Caversham Valley is a unique species or genus not found beyond Dunedin City. The removal of the reserve vegetation will not, in itself, threaten the immediate existence of the *Peripatus* population, or any other indigenous plant or animal species, however habitat removal could reduce the resilience of the *Peripatus* population to withstand future disturbances, whether natural or human-induced. Consequently, it is considered that the removal of vegetation from the proposed highway footprint could have a potentially significant effect on the *Peripatus* population and will require mitigation to offset this effect. For this reason it is recommended that the following mitigation measures be undertaken:*

- (i) *Replacement of the reserve land lost by:*
  - *protection of an equivalent area of appropriate habitat connected to the site currently occupied by Peripatus, or*
  - *procurement of an equivalent area of appropriate habitat connected to the site currently occupied by Peripatus, or*
  - *investment in the enhancement of an area connected to the existing Peripatus area that has a tree canopy and could be improved as Peripatus habitat reasonably quickly.*
- (ii) *Contract the services of a person experienced in the habitat requirements and translocation of Peripatus to produce a Peripatus Translocation Plan prior to the commencement of highway construction.*
- (iii) *Undertake a search, capture and translocation exercise along the length of the proposed highway footprint on the north side of the highway from Lookout Point Reserve to Caversham Valley Forest Reserve immediately prior to the commencement of vegetation removal to translocate as many Peripatus as can be found from the site.*
- (iv) *Commission the production of a Peripatus Management Plan as a reference document to be available for the Dunedin City Council, to assist in their management of the reserve areas, with the purpose of safeguarding the future of the Peripatus population.*
- (v) *Plant the highway fringes adjacent to the Caversham Valley Forest Reserve and Lookout Point Reserve in a natural assemblage of ecosourced native tree and shrub species appropriate for south facing Caversham slopes and link these to existing mature vegetation on both Council reserves to provide future habitat for native birds and invertebrates and long-term future habitat for Peripatus. “*

The NZTA accepts that the above mitigation is appropriate and will undertake what is proposed.

## 9.5 Effects on traffic and traffic safety

The Integrated Traffic Assessment Report (ITA) (Appendix I) assesses the CVSI including the three Lookout Point options presented at the community consultation information evening. The focus of the report is to assess the effects from the CVSI associated with the transport facilities in the area.

## 9.6 Proposed Traffic Improvements

According to the ITA, the Base Option and Alternative 1 address the severance issue and more of the safety deficiencies at Lookout Point than Alternative 2. In summary, the Base Option and Alternative 1 features include:

- Removal of at grade connections of South Road and Mornington Road to SH1 to eliminate the risk of crossing and turning crashes at Lookout Point;
- The provision of diverge tapers for left turns, turning vehicles will clear the through lanes more easily, effectively and safety. This will reduce the risk of rear end crashes. However, the addition of on ramps from the bridge to the state highway could increase the risk of side swipe crashes;
- The addition of a median will reduce the risk of vehicles crossing the centre line or attempting u turn manoeuvres;
- Removal of parking, wider shoulders and service lanes will mitigate the risk of collisions involving parking and parked cars;
- The proposed vehicle bridge will offer an opportunity for an improved bus route as buses will be able to cross SH1 at Lookout point safely. However the current option will involve a re-routing of the existing bus service and the potential of a loss of bus service along South Road.;
- The new vehicle bridge is designed to accommodate both pedestrian and cyclists;
- A pedestrian and cyclist connection between South Road will be maintained ;

- A footpath for shared pedestrian and cyclist use is proposed along the northern side of SH1 from Mornington Road heading to the city; and,
- An on-road cycle route from South Road, under the overpass structure then connecting to the existing service lane on the south side of SH1 is also planned.

## 9.7 Traffic Demands

The Integrated Traffic Assessment (ITA) has assessed traffic demands using the Dunedin Tracks Model to enable analysis of the traffic patterns and how they change with each of the using the forecast year of 2021. The report makes following key observations and assessments:

- There is minimal change in traffic demand on SH1 with any of the option looked at, SH1 is predicted to carry just under 20,000vpd in each direction;
- The Base Option and Alternative 1 cause a significant decrease in traffic demand along South Road as the direct link between Lookout point and South Road is eliminated;
- Riselaw Road has a significant increase in traffic demand as the bridge will attract more traffic, and all traffic in the Base Option and Alternative 1 must use Riselaw Road as there will be no access to South Road. However, the report goes on to say the as Riselaw Road is a collector road as identified in the Dunedin City District Plan and the increase in volume is within the volume that can be expected on a collector road;
- The model shows that the proposed bridge will lead to a reduction in traffic along Kaikorai Valley Road. Stevenson Road experiences an increase in traffic since some motorists are travelling via Lookout Point Bridge and Riselaw Road instead of via Main South Road.;
- The report also comments the model may possibly be underestimating the traffic demand for the bridge and actual volume will be based on how many people chose to change their current trip behaviour to use the new bridge.

## 9.8 Closure of Short Street and Restriction of the Left Turn into Burnett Street

### 9.8.1 Closure of Short Street

The Base Option and Alternative 1 include the closure of vehicular access onto the highway and a turnaround area constructed instead. To access SH1 motorists will have to either use the Main South Road to access the state highway at Burnside or travel north on Kaikorai Valley Road then via Barr Street to Mornington Road and access the state highway at Lookout Point. The pedestrian link from Short Street to Mornington Road will be maintained.

This will directly affect the residents along Short Street wanting to travel north. However, the Integrated Traffic Report states "*The closure of Short Street is to allow for the creation of a higher left turn deceleration lane for Mornington Road, as well as to mitigate the geometric deficiencies that currently exist at this intersection*".

Therefore, the effect of closing Short Street to the state highway must be balanced with the project objective to improve the safety issues and deficiencies of the state highway and the Lookout Point intersections.

### 9.8.2 Restricting the Left Turn into Burnett Street

It is intended to restrict left turning traffic into Burnett Street and only allow left turns onto the state highway from Burnett Street. As a result of community consultation, the NZTA is now assessing whether this left turn can be reinstated. This change may be brought forward to the outline plan as an enhancement to the Base Option.

## 9.9 Conclusion

The ITA concludes that the options considered for the CVSI meet the project objectives while addressing the issues at Lookout Point by providing a safe, direct route between Mornington Road and Riselaw Road for all users.

The effects of the closure of Short Street on local traffic having to take another route to access the state highway requires to be balanced against the safety and other connectivity benefits of the overall project.

## 9.10 Effects on People and the Community

The Social Impact Assessment (Appendix K) has assessed the CVSI as the proposed upgrade to the state highway corridor through the Caversham Valley from Barnes Drive to Lookout point and three options for the Lookout point Intersection upgrade. The report conclusions are outlined below.

### 9.10.1 The State Highway Corridor

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

- Safer access and parking for residents along the service lane.
- Reduction in commuting times on the state highway
- Improved access for pedestrians and cyclists along and across the state highway corridor.
- Improvements in amenity as a result of landscaping along the state highway corridor.
- Improved safety at the Burnett Street/SH1 intersection by removing a turning movement
- Improved safety for motorists on the state 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 the 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 state highway corridor aligns with the DCC's and the ORC's planning and policy documents and it is considered that the upgrade to the state highway corridor supports the purposes and principles of the RMA.

### 9.10.2 Lookout Point Intersection Upgrade: The Base Option

The Base Option involves the construction of a vehicle overbridge with connectivity for pedestrians and cyclists. All turning movements onto and off the state 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 state highway.
- Fewer crashes at the Lookout Point intersection resulting in fewer injuries and deaths.

The adverse effects likely to arise from the Base Option have been mitigated as follows:

- Property acquisition and concerns around relocating have been mitigated by compensating property owners under the 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. However, appropriate 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 supports the purposes and principles of the RMA.

The Social Impact Assessment also assessed the two other Lookout Point Intersection options Alternative 1 and Alternative 2. The report concludes that the Base Option is the preferred option as it provides the least social impacts.

## 9.11 Effects from Earthworks

The earthworks associated with the CVSI include the following:

- Cut to fill approximately 8,700m<sup>3</sup>
- Cut to waste approximately 3,800m<sup>3</sup>
- Fill imported to the site approximately 30,000m<sup>3</sup>
- Topsoil to be stripped and kept on site approximately 4,300m<sup>3</sup>

Most of the cut will be within the section where the houses 61 - 109 Caversham Valley Road will be removed to accommodate the widened corridor. The fill batters are mostly to the north of the state highway corridor and to support the ramps to the bridge.

### 9.11.1 Burnett Street Cut Stability and Effect on Neighbours

Initial geotechnical investigations have been carried out assessing the foundation conditions for the bridge and the state highway. Further investigations are required as part of the final design and the result of these investigations will be included as part of the outline plan.

The cut at Burnett Street below South Road requires further geotechnical investigation that will assess any potential instability which will then be incorporated into cut slope design. The proposed cut will consist of a slope at the appropriate angle for the materials found that will not affect the stability of the properties above the cut.

The effects of the earthworks during construction are dealt with below in Section 8.12.

## 9.12 Effects from Construction

Once construction begins it is anticipated that the CVSI will take approximately 12 months to construct. Potential construction effects include:

### 9.12.1 Dust and Sediment Runoff

The Contractor will be required to take all necessary measures to prevent dust nuisance, such as watering exposed soil, and any other methods available. Again, these effects will only occur during construction and will be localised, and limited in duration. If, during final design, a need to stockpile fill to construct sections of the proposed route is identified, further mitigation methods will be detailed within the outline plan and the construction management plan.

Exposed cut and fill batters do have the potential to result in the release of sediment. This runoff will be mitigated by the use of silt ponds and/or silt fencing. These methods will be detailed within the Construction Management Plan.

### 9.12.2 Traffic Management

The ITA has noted that it will be critical to manage the effects of construction to avoid significant disruption, delay, congestion, and transport user frustration. The corridor will need to be maintained operational during peak times and any diversions or delays need to be kept to a minimum during construction.

The presence of construction machinery, along with associated construction activities, is likely to cause temporary delays and potential safety hazards for motorists. However aside for one off type activities such as lifting bridge beams across the highway, which will only take a few hours the state highway will remain open for the duration of the construction.

Access to those residences that remain along Caversham Valley will be maintained at all times throughout the construction process.

At this stage, a detailed construction programme has not been finalised. However, as the majority of the widening works are to the north of the existing corridor, it is anticipated that the effects on the road users will be of limited duration.

The contractor undertaking the works will be contractually required to ensure users will have safe passage through the construction site should they come in contact with construction activities. A traffic management plan will be prepared in accordance with and as part of the overall Construction Management Plan prepared in accordance with the NZTA's Code of Practice for Temporary Traffic Management. This will include addressing items raised in the ITA including:

- Road closures including their duration, identification of alternative roads and ensuring the public are informed. If the road closures are extensive additional modelling of the impact of these road closures may be required;
- Local access and parking for all property owners;
- Pedestrian and cyclist disruption and severance;
- Construction machinery, along with associated construction activities will cause delays and potential safety hazards for motorists.

### 9.12.3 Construction Noise

Noise will be generated during construction from heavy machinery working on site. The increase in noise will only be for the duration of the construction process and therefore of limited duration. There are no noise restrictions in the Dunedin City District Plan. The NZTA therefore intends to adopt a construction process with

its contractor to address noise by relying, where appropriate, on NZS6803P: 1999'Acoustics – Construction Noise'.

#### 9.12.4 Construction Effects on Historical/Archaeological Cultural Sites or Materials

Appendix L includes the Heritage Report undertaken for the project area, which details the heritage for the area affected by the project. The summary of heritage issues page 47 of this report states:

*"There has been less modification in the Stage Two project area (Barnes Drive to Lookout Point) and through this area the archaeological risk is considered to be medium to high. Several pre-1900 houses will be removed as a result of the new road alignment through this area. There is potential for archaeological information associated with the dwellings and ancillary structures to be revealed during the course of work. The area of the former Industrial School and farm may similarly reveal information on the development of this facility as well as the earlier occupation of the area by Maori.*

*Although impact on 19th century residences and sites within the area is considered to be a negative impact on the heritage resource, there is potential for archaeological information to be recorded through the process, which will add to our overall understanding of the early settlement of this district. Risks associated with the management of heritage as part of the project are primarily associated with potential time delays should sites be located during work. It will be necessary to obtain an Authority to modify archaeological sites from the Historic Places Trust as part of the project, and further consultation with the Historic Places Trust will assist with this process."*

Subsequent to the completion of the heritage report, a built heritage assessment has been undertaken of the dwellings to be removed between 61 – 109 Caversham Valley Road. HPT has been consulted on the removal of these dwellings.

For 109 Caversham Valley Road, an archaeological authority was obtained as this house is to be removed due to vandalism and fire risk prior to construction beginning. Subsequent heritage inspection has identified the house is actually post 1900.

After consultation with HPT, and an internal inspection of the dwellings to be removed, dwellings on properties 71, 79, 87 and 109 Caversham Valley Road have been identified as requiring archaeological recording. 109 Caversham Valley Road has already been assessed and recorded to a HPT Archaeological Recording Level 4 as according to its Archaeological Authority. Although no archaeological authority for their removal 71, 79 and 87 Caversham Valley Road will also be assessed and recorded to a HPT Archaeological Level 3. The dwelling at 91 Caversham Valley Road will have samples of wall paper recorded and retained. The other dwellings not listed can be removed without any further heritage assessment.

An archaeological authority from the HPT will be obtained prior to undertaking any construction works for the overall project.

#### 9.12.5 Conclusion

The construction of the CVSI is anticipated to take approximately 12 months. The effects from construction will therefore be limited in duration. The key effects will include traffic disruption along the state highway, dust, noise, sediment control and effects on cultural archaeological sites. To mitigate these effects, the NZTA will develop a Construction Management Plan that will include but not limited to the following:

- (i) All mitigation measures taken during construction to reduce adverse effects on traffic management in relation to effects on local roads;
- (ii) All mitigation measures taken during construction to reduce adverse effects on adjoining properties, including, dust, noise, sediment runoff and safety of people visiting the site;
- (iii) The archaeological authority for the project and the protocols to be followed in the event of a discovery of an archaeological site;
- (iv) A complaints register to keep record of the communities concerns raised with the contractor and any resulting mitigation carried out to address the concerns raised;
- (v) Appropriate auditing requirements to ensure performance of all components of the construction management plan.

## 10. Statutory Assessment

### 10.1 Part II of the RMA

The Council's consideration of a Section 181 notice is subject to Part II of the RMA.

**Section 6** of the RMA sets out those matters of national importance that are to be recognised and provided for in achieving the purpose of the RMA. The relevant Section 6 matters are considered to be as follows:

- (c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna
- (f) The protection of historic heritage from inappropriate subdivision, use, and development.

**Section 7** of the RMA sets out those "other matters" that Council is to have particular regard to in achieving the purpose of the RMA. The relevant Section 7 matters are considered to be as follows:

- (b) The efficient use and development of natural and physical resources
- (c) The maintenance and enhancement of amenity values
- (d) Intrinsic values of ecosystems
- (f) Maintenance and enhancement of the quality of the environment

The ecology assessment (Appendix I) assesses the removal of vegetation and concludes the vegetation to be removed from the state highway footprint is common with low to moderate ecological value and therefore does not require mitigation. This vegetation is therefore not considered significant and does not require protection.

The ecologist report goes on to state the potential effect of loss of habitat on the *Peripatus* (a potentially significant indigenous invertebrate) that occurs within the Caversham Valley Reserve will create some threat to the *Peripatus* mortality. However, the area of land affected that may have individual *Peripatus* is not high value habitat and individual *Peripatus* can be translocated in accordance with the proposed mitigation as listed in the ecologist report.

A heritage assessment has been undertaken to identify the archaeological risk (Appendix L). The recommendations from this report have been adopted as mitigation as well as ongoing consultation with the Historic Places Trust (Otago) (HPT). An archaeological authority from the HPT will also be obtained prior to construction. Therefore, the project is being developed with an awareness of the potential heritage values in the area.

In terms of the Section 7 matters relating to the maintenance of amenity values, and the maintenance and enhancement of the quality of the environment, the urban design landscape and visual assessment report states that there is the potential to provide new local amenity space as well as improve amenity along the state highway corridor by the removal of some derelict houses. For those remaining residences that are affected most by existing traffic noise, there is potential for reduction in noise levels; although for some residences further away and less affected by traffic noise, there may be some small increases in noise levels. (See Appendix H for the specialist Noise Report). The addition of noise mitigation structures (i.e. the 1.8m noise fence in the service lane dividing strip), together with the bridge structure, will have the potential to affect visual amenity. The works would also cause change to the local traffic and bus routes (see Appendix G for Urban Design, landscape and Visual Assessment Report and Appendix K Social Impact Assessment). However, any negative effects arising need to be balanced against the positive effects achieved by the project.

The proposed alteration to designation will provide for an improvement to the safety and efficiency of SH1, and therefore the sustainable use and management of an existing physical resource.



Mitigation measures prior to and during construction need to be adopted to ensure that ecosystems and the quality of the environment for the Peripatus is maintained.

On the basis of the above, it is considered the proposed works will be consistent with Sections 6 and 7.

**Section 8** of the RMA requires that the principles of the Treaty of Waitangi are taken into account. The requirements of Section 8 have been taken into account through prior consultation with Kai Tahu ki Otago Limited and this is addressed further in the Assessment of Effects on the Environment in Section 8 of this notice.

The purpose of the RMA is to promote the sustainable management of natural and physical resources. **Section 5** also states that activities must be managed so that adverse effects on the environment are avoided, remedied, or mitigated. The state highway is a significant physical resource and the proposed alteration to designation will support the functions of the state highway network and its continued sustainable use and management through improving both safety and efficiency. Potential adverse effects will be avoided, remedied, or mitigated. Any ongoing adverse environmental effects such as the increase in noise to some residents, changes in local travel routes, visual effects as a result of the construction and bridge structures need to be balanced against the benefits arising from the project. It is believed that confirming this notice of requirement and the resultant physical works, will achieve the purpose of the RMA.

Based on this assessment above it is concluded the proposal will meet the purpose and principles of the RMA.

## 10.2 Notification

This application for the alteration of a designation is being applied for under Section 168 of the Resource Management Act. Section 168 states:

*“(2) Subject to subsection (3), sections 168 to 179 shall, with all necessary modifications apply to a requirement referred to in sub section (1) as if it were a requirement for a new designation”*

Section 169 states:

*“(1) If a territorial Authority is given notice of a requirement under section 168 the territorial authority must decide whether to notify the notice under sections 95 to 95 F which apply with all necessary modifications and as if - ...”*

Given the potential effects from the proposal will affect a wide section of the community, the NZTA request that this Notice of Requirement is notified.

## 10.3 Regional Land Transport Strategy 2005

The Otago Regional Land Transport Strategy (RLTS), adopted in 2005, identifies how the region's land transport needs for the next ten years should be met.

In Section 4 'Otago's transport context and trends', the RLTS outlines roading efficiency and safety and the environment of Otago's Roads. Section 4.6 assesses the social cost of accidents in Otago as high relative to New Zealand averages. As a consequence, the RLTS proposes additional investment is proposed for safety projects in the region.

In the Section 6.5 ("Otago project funding proposals"), the RLTS sets out an overview of proposed programmes and funding levels for the life of strategy. State Highway improvement options > \$3M (Transit 10 year plan) SH1: Caversham Link Four Laning and Bridge widening is listed amongst these programmes under the heading Efficiency, Safety and the Environment.

This project was envisaged in the RLTS as helping to provide a continuous 100km/h route from Andersons Bay Road/SH1 intersection in Dunedin to Dunedin Airport Road. As the project has developed, economic

constraints have intervened to that extent that the CVSI is now considered more of an urban arterial with a speed environment of 60km/h rather than the original 100km/h. The key benefits from the project will be to improve safety at Lookout Point and along SH1 to Barnes Drive, with some additional improvement in route efficiency. This will be due to the improvement in engineered safety enabling an increase in the speed limit to 60km/h. The safety benefits achieved are consistent with the safety policies of the RLTS.

## 10.4 Regional Policy Statement

The Otago Regional Policy Statement (RPS) has been operative since October 1998. The RPS provides an overview of the resource management issues of the region. It sets out how natural and physical resources are to be managed in an integrated way to promote sustainable management. Section 9 – Built Environment is most relevant to this project.

### Built Environment

<i>Objective/ Policy</i>	<i>Is the proposal consistent with the Objectives and Policies?</i>
<p><b>Objective 9.4.1</b></p> <p><i>To promote the sustainable management of Otago's built environment in order to:</i></p> <p><i>(a) Meet the present and reasonably foreseeable needs of Otago's people and communities; and</i></p> <p><i>(b) Provide for amenity values, and</i></p> <p><i>(c) Conserve and enhance environmental and landscape quality; and</i></p> <p><i>(d) Recognise and protect heritage values</i></p>	<p>The state highway is a significant existing physical resource and the proposed alteration to designation will support the functions of the state highway network and its continued sustainable use and management through improving both safety and efficiency for the Otago Region.</p> <p>The proposed works will improve traffic flows through the city and to key regional and national destinations such as the airport and SH 88 to Port Chalmers.</p> <p>The project also provides for cyclists and pedestrians access along the state highway.</p>
<p><b>Objective 9.4.2</b></p> <p><i>To promote the sustainable management of Otago's infrastructure to meet the present and reasonably foreseeable needs of Otago's communities.</i></p>	<p>As the project has been developed, a number of specialist reports have been commissioned to help identify potential resource management issues and help with the development of mitigation measures where possible. These include:</p> <ul style="list-style-type: none"> <li>• Noise</li> <li>• Heritage</li> <li>• Urban Design and Landscape</li> <li>• Ecology</li> <li>• Social Impact Assessment</li> <li>• Traffic Assessment</li> </ul>
<p><b>Policy 9.5.2.</b></p> <p><i>To promote and encourage efficiency in the development and use of Otago's infrastructure through:</i></p> <p><i>(a) Encouraging development that maximises the use of existing infrastructure while recognising the need for more appropriate technology; and</i></p> <p><i>(b) Promoting co-ordination amongst network utility operators in the provision and maintenance of infrastructure; and</i></p> <p><i>(c) Encouraging a reduction in the use of non-renewable resources while promoting the use of renewable</i></p>	<p>These reports along with consultation with Kai Tahu ki Otago, other key stake holders (including emergency services and other relevant network utility operators) and the community have helped quantify potential effects arising from the proposal and identify potential mitigation measures where necessary. These effects are addressed in Section 9 of this notice of requirement. Detailed mitigation measures will continue to be developed through to the outline</p>

<p><i>resources in the construction, development and use of infrastructure; and</i></p> <p><i>(d) Avoiding or mitigating the adverse effects of subdivision, use and development of land on the safety and efficiency of regional infrastructure.</i></p>	<p>plan process.</p> <p>Overall where relevant the project is <u>considered consistent</u> with these objectives and policies</p>
<p><i>Policy 9.5.3</i></p> <p><i>To promote and encourage the sustainable management of Otago's transport network through:</i></p> <p><i>(a) Promoting the use of fuel efficient modes of transport; and</i></p> <p><i>(b) Encouraging a reduction in the use of fuels which produce emissions harmful to the environment; and</i></p> <p><i>(c) Promoting a safer transport system; and</i></p> <p><i>(d) Promoting the protection of transport infrastructure from the adverse effects of</i></p> <p><i>landuse activities and natural hazards.</i></p>	
<p><i>Policy 9.5.4</i></p> <p><i>To minimise the adverse effects of urban development and settlement, including structures, on Otago's environment through avoiding, remedying or mitigating:</i></p> <p><i>(a) Discharges of contaminants to Otago's air, water or land; and</i></p> <p><i>(b) The creation of noise, vibration and dust; and</i></p> <p><i>(c) Visual intrusion and a reduction in landscape qualities; and</i></p> <p><i>(d) Significant irreversible effects on:</i></p> <p><i>(i) Otago community values; or</i></p> <p><i>(ii) Kai Tahu cultural and spiritual values or</i></p> <p><i>(iii) The natural character of water bodies</i></p>	

<i>and the coastal environment; or</i>  <i>(iv) Habitats of indigenous fauna; or</i>  <i>(v) Heritage values; or</i>  <i>(vi) Amenity values; or</i>  <i>(vii) Intrinsic values of ecosystems; or</i>  <i>(viii) Salmon or trout habitat.</i>	
---	--

## 10.5 Dunedin City District Plan

The Dunedin City District Plan was made fully operative in July 2006. The underlying zoning for the project is Res 1 in Caversham Valley, and Rural for the section from Short Street, south to the end of the project.

The northern slopes of Caversham Valley adjacent to SH1 have been zoned an Urban Landscape Conservation Area (ULCA 14 – Caversham Valley Slopes, Dunedin), an area considered to have significant landscape, natural character and amenity values. The project affects part of Sidey Park in this zone. Sidey Park is a grassed park of approximately 3ha (30,000m<sup>2</sup>) used by the local community for recreation. Most of the area, although grassed and used as a park, is legal road. The CVSI requires 868m<sup>2</sup> of this area that is legal road, and 475m<sup>2</sup>, which is freehold land owned by the DCC.”

An area of significant conservation value is located on the northern slopes of the Valley and adjacent to SH1, identified as C079. This area is described in Schedule 25.4 (Areas of Significant Conservation Value) as Caversham Bush Reserve, habitat of rare and significant native fauna, status: DCC Natural Reserve. The project is seeking to include 3280m<sup>2</sup> of this reserve within the SH1 designation.

The district plan also shows that the Caversham Valley section of the project is located in a Restricted Water Supply Area. The project will not affect water supply.

The existing alignment of SH1 is designated along its full length within the project area. Table 2 shows the project section areas and corresponding designations and purposes.

<i><b>Project Section</b></i>	<i><b>Designation</b></i>	<i><b>Purpose</b></i>
Barnes Drive– Lookout Point	D 456	SH1- Caversham Valley Road (from Sydney Street to Lookout Point) – <b>“State Highway Purposes”</b>
Lookout Point - End of project	D 457	SH1 – Southern Motorway (from Lookout Point to between Abbotsford Rd and Sunnyvale Lane) - <b>“Motorway Purposes (SH1)”</b> .

**Note:** This Notice of Requirement also seeks to modify the notation of the designation between Lookout Point to the end of the CVSI from **“Motorway Purposes”** to **“State Highway Purposes”** and include this section of the state highway into D456.

Any works outside the designation are subject to objectives, policies and rules in the District Plan and if necessary must be authorised by way of land use consent under Section 9(1) of the RMA.

Rules relating to roads are covered in Section 20 (Transportation) of the district plan. Rule 20.5.1 states:

*"The following activities are permitted activities within the legal road reserve and within existing formed road corridors that are not contained within the legal road reserve, provided that they comply with the relevant performance standards set out in Rule 20.5.2:*

- (i) *Maintenance of existing roads, which includes realignment, traffic and parking controls, lighting and landscaping.*
- (ii) *Street furniture."*

Rule 20.5.4 requires resource consent as a discretionary activity (Unrestricted) for:

- "(i) Road Construction."*

On the above basis, any formation or reconstruction of the road outside the road reserve or existing road or designation would require resource consent, unless the NZTA alters the designation under Section 181 of the RMA. It is recommended that where any option requires the formation or construction of state highway outside the existing designation, that the Section 181 process be used instead of obtaining resource consent. This provides greater certainty to the NZTA in terms of constructing and operating the state highway (see Section 4 of this notice of requirement for discussion on the advantages of the designation statutory process).

The district plan also contains Objectives and Policies that give guidance to Council when assessing statutory processes such as this notice of requirement. The following objectives and policies are considered relevant to this matter:

#### Sustainability Section

<i>Objective/Policy</i>	<i>Is the proposal consistent with the Objectives and Policies?</i>
<p><i>Objective 4.2.1</i></p> <p><i>Enhance the amenity values of Dunedin.</i></p> <p><i>Objective 4.2.3</i></p> <p><i>Sustainably manage infrastructure.</i></p> <p><i>Policy 4.3.1</i></p> <p><i>Maintain and enhance amenity values.</i></p> <p><i>Policy 4.3.5</i></p> <p><i>Require the provision of infrastructure services at an appropriate standard.</i></p> <p><i>Policy 4.3.6</i></p> <p><i>Provide access to natural and physical resources.</i></p>	<p>Landscaping and urban design opportunities (e.g. planting and design of the Lookout Point Bridge) will provide an opportunity to enhance amenity values.</p> <p>The proposed options will promote the sustainable management of infrastructure in Dunedin and improve the existing state highway network by making SH1 more efficient whilst enhancing safety in the area of work. This will provide a better flow of vehicles including heavy vehicles, through the city along SH1, from the city to the airport, and to SH88 and the Port, and make use of the existing roading network.</p> <p>The provision of either a pedestrian over or underpass or a vehicle bridge across and above the state highway at Lookout Point joining Riselaw Road to Morningson Road will result in remedying the existing community severance issue.</p> <p>Thus all of the proposed options are <u>consistent</u> with these objectives and policies.</p>

#### Manawhenua Section

<i>Objective/ Policy</i>	<i>Is the proposal consistent with the Objectives and Policies?</i>
<p><i>Objective 5.2.2</i></p> <p><i>Recognise that sites of waahi tapu exist throughout the City and that these must be protected.</i></p>	<p>As part of the consultation with key stakeholders, the NZTA has consulted with Kai Tahu ki Otago Limited, which advised that once a preferred option is settled ongoing consultation will be required. Also, the usual practice of imposing an</p>

<p><i>Objective 5.2.3</i></p> <p><i>Recognise the range of resources regarded as taoka by Manawhenua.</i></p> <p><i>Policy 5.3.1</i></p> <p><i>Consult with Manawhenua regarding natural and physical resource issues of importance to them.</i></p> <p><i>Policy 5.3.4</i></p> <p><i>Protect waahi tapu from the adverse effects of land use and development.</i></p> <p><i>Policy 5.3.5</i></p> <p><i>Avoid, remedy or mitigate any adverse effects on waahi taoka resulting from land use activities.</i></p>	
--	--

#### Residential Section

<i>Objective/ Policy</i>	<i>Is the proposal consistent with the Objectives and Policies?</i>
<p><i>Objective 8.2.1</i></p> <p><i>Ensure that the adverse effects on amenity values and the character of residential areas are avoided, remedied or mitigated.</i></p> <p><i>Objective 8.2.4</i></p> <p><i>Ensure that the existing urban service infrastructure servicing residential areas is sustained for the use of future generations</i></p> <p><i>Policy 8.3.1</i></p> <p><i>Maintain and Enhance the amenity Values and character of residential areas.</i></p>	<p>The proposed works pass through the Res 1 Zone in the Caversham Valley section of the project. This area is bisected by the state highway with few crossing points. The project will not make this severance any worse. Although pedestrians crossing the state highway will not be encouraged, the addition of the median and a pedestrian refuge will provide a safer space should they choose to cross the state highway. A new road bridge or pedestrian over or underpass connecting Mornington Road to Riselaw Road will also be constructed. This connection will help remedy an existing significant community severance issue.</p> <p>Residential amenity will also potentially be improved by better parking, increases in safety for pedestrians and improvements in landscaping and urban design. Negative effects include a potential increase in traffic noise on residents along South Road. These effects need to be balanced with the positive effects arising from the project. Overall the options are considered to be consistent with these objectives and policies</p>

#### Rural Section

<i>Objective/ Policy</i>	<i>Is the proposal consistent with the Objectives and Policies?</i>
<p><i>Objective 6.2.2</i></p> <p><i>Maintain and enhance the amenity values associated with the character of the rural areas.</i></p> <p><i>Objective 6.2.4</i></p> <p><i>Ensure that development in the rural area take place in a way which provides for sustainable management of roading and other public infrastructure.</i></p>	<p>The proposed works will occur adjacent to the existing road corridor in a rural area immediately adjacent to the urban environment. The rural area zoning is a small length of road adjacent to mostly open paddocks and has recently been developed as a building platform for a church. There is no associated residential activity in this area.</p> <p>The effects of the proposed works will not be inconsistent with that of the existing</p>

	<p>environment. Any effects on rural amenity beyond construction are likely to be minor.</p> <p>The proposed options are therefore consistent with this objective and policy.</p>
--	---

#### Indigenous Flora and Fauna

<i>Objective/ Policy</i>	<i>Is the proposal consistent with the Objectives and Policies?</i>
<p><b>Objective 16.2.2</b></p> <p><i>Recognise and provide for the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna in the City and its coastal margins.</i></p> <p><b>Policy 16.3.3</b></p> <p><i>Avoid the effects of land use activities where those effects may compromise the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna in the City.</i></p>	<p>The project will require approximately 0.5ha from the Caversham Bush Reserve listed as an area of significant conservation value. The ecology report Appendix I) identifies the clearance of vegetation and subsequent earthworks will create some threat to the Peripatus (if physically located). However this is mitigated by the area to be cleared not being considered high quality habitat and the Peripatus if identified in this area can be relocated.</p> <p>Although the project does not avoid the Caversham Bush Reserve the proposed mitigation will seek to protect the Peripatus by translocating any found on the state highway footprint. In addition, land to be added to the reserve has the potential to enhance the reserve Peripatus environment. The proposal is considered not <u>inconsistent</u> with this policy</p>

#### Hazards Section

<i>Objective/ Policy</i>	<i>Is the proposal consistent with the Objectives and Policies?</i>
<p><b>Objective 17.2.3</b></p> <p><i>Earthworks in Dunedin are undertaken in a manner that does not put the safety of people or property at risk and that minimises adverse effects on the environment.</i></p> <p><b>Policy 17.3.9</b></p> <p><i>Control earthworks in Dunedin according to their location and scale.</i></p>	<p>The proposed earthworks associated with the project will be in the order of 12,500m<sup>3</sup> of cut and approximately 30,00m<sup>3</sup> of fill.</p> <p>The largest area of cut is from Burnet Street to approximately 109 Caversham Valley Road. Further geotechnical investigations assessing the any potential instability these investigations will inform the cut slope design.</p> <p>Dust and sediment runoff will be controlled by water spraying and silt control measures. These mitigation methods will be detailed in the Construction Management Plan (CMP).</p>

#### Transportation Section

<i>Objective/ Policy</i>	<i>Is the proposal consistent with the Objectives and Policies?</i>
<p><b>Objective 20.2.1</b></p> <p><i>Avoid, remedy, or mitigate adverse effects on the environment arising from the establishment, maintenance, improvement and use of the transportation network.</i></p>	<p>The purpose of the designation allow for state highway improvements to improve the safety and efficiency of the corridor for state highway users, improve corridor amenity for cyclists and pedestrians, manage parking and access for remaining residences to improve safety and improve visual amenity and environment quality of the corridor as a whole. The project will also</p>

<p><i>Objective 20.2.4</i> <i>Maintain a safe, efficient and effective transportation network.</i></p> <p><i>Policy 20.3.1</i> <i>Avoid, remedy or mitigate the adverse effects on the environment of establishing, maintaining, improving or using transport infrastructure.</i></p> <p><i>Policy 20.3.9</i> <i>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.</i></p>	<p>result in improved traffic flow from the airport to, and through, Dunedin along SH1, as well as to SH88 and Port Chalmers.</p> <p>The improved route will have fewer side road and private access conflict points. For this reason, the road will become safer, and traffic flow will be more efficient.</p> <p>The adverse effects from construction will be mitigated with mechanisms included in a CMP.</p> <p>Once constructed, certain adverse effects could remain, e.g. operational noise to some homes and change in local traffic routes. These effects need to be balanced by the positive effects resulting from the improvement to the state highway.</p> <p>The proposed options are therefore considered <u>consistent</u> with these objectives and policies subject to construction management mitigation measures.</p>
<p><i>Objective 20.2.3</i> <i>Achieve integrated management of the roading network, including pedestrian and cycle use, with rail, air and sea networks.</i></p> <p><i>Policy 20.3.8</i> <i>Provide for the safe interaction of pedestrians and vehicles.</i></p>	<p>The proposed works will provide an improved state highway network as traffic flow and safety are improved.</p> <p>The options provide for safe pedestrian crossing of the route which will be restricted to the top of the hill and at Barnes Drive. However there will be a pedestrian refuge in the median opposite 107 Caversham Valley road to allow people the option of crossing at this point, although this will not encouraged.</p> <p>Overall the proposed work will improve existing pedestrian safety along the state highway by increasing shoulder width, providing a bridge with footpath connecting Riselaw Road with Mornington Road, providing an informal median refuge and improving crossing point at Barnes Drive.</p> <p>The proposed options are therefore considered <u>consistent</u> with this objective and policy.</p>
<p><i>Policy 20.3.6</i> <i>Encourage heavy traffic to use appropriate routes.</i></p>	<p>The improvement to the state highway and any bridge will be designed to the appropriate height which will encourage heavy traffic and over dimensional loads to continue to travel along the state highway.</p> <p>The options are therefore consistent with this policy.</p>



Environmental Issues Section

<i>Objective/ Policy</i>	<i>Is the proposal consistent with the Objectives and Policies?</i>
<p><i>Objective 21.2.2</i></p> <p><i>Ensure that noise associated with the development of resources and the carrying out of activities does not affect public health and amenity values.</i></p> <p><i>Policy 21.3.3</i></p> <p><i>Protect people and communities from noise and glare which could impact upon health, safety and amenity.</i></p>	<p>The houses most affected by an increase in noise from the CVSI will be removed as part of the project i.e. 61 – 109 Caversham Valley Road. There will also be some houses at the top of Caversham Valley Road that are currently affected by traffic noise that will experience a small improvement as the proposal moves the state highway further away from their homes. The effects of existing road noise for these houses will be further mitigated by the construction of a 1.8m noise barrier along the service lane in from to 111-163 Caversham Valley Road.</p> <p>The CVSI has been assessed against NZS 6806 6806:2010 criteria which have been set to avoid adverse health effects on people and communities associated with noise but also with regard to the potential benefits of new and altered roads.</p> <p>There will be a group of houses along South Road that will experience a noticeable increase (5 and 9dBA) in operational noise and therefore will experience some degradation in amenity. However these houses will remain within Category A, NZS6806: 2010. Achieving Category A within NZS6806 is “<i>the noise level from the project without any noise specific mitigation is a “reasonable” noise level</i>” (Refer Appendix H for Noise Report).</p> <p>The increase of noise for 472 South Road, 67 Caversham Valley Road, 8 Burnett Street places these houses in Category B of NZS6806. A 1.8 m noise barrier will only have a small effect on mitigating this noise increase. These houses will therefore be further investigated to identify if some form of acoustic treatment of the building would be practicable.</p> <p>Overall, the project in relation to noise is <u>consistent</u> with policy 21.3.3 in terms of health and safety. However, there may be some instances where some residences may experience an increase in road noise and some degradation of residential amenity</p> <p>Where noise effects remain these will need to be further weighed against the positive effects arising from the project.</p>

Urban Landscape Conservation Area: Caversham Valley Slopes

<i>Landscape Values</i>	<i>Is the proposal consistent with the Landscape Values?</i>
<i>This area constitutes a coherent linked area where vegetation has the dominant visual impact. As such it appears as an extension of the Town Belt from many view points in the city.</i>	The proposed widening of the highway will encroach on the Urban Landscape Conservation Area at Sidey Park where the park is mostly a open grassed recreation reserve. The Urban Design Concept Strategy encourages native plantings along the route that would complement the natural character values promoted in this zone.
<i>It creates a visual neighbourhood boundary between Caversham and the Mornington area and is recognised as such in the Dunedin "Street Tree Planting Policy".</i>	The final landscape and urban design mitigation measures are <u>consistent</u> with these values.

## 11. Summary of Mitigation Measures

The following is a summary of the mitigation measures that will be implemented by the NZTA:

- Consult with the relevant key stakeholders throughout option development.
- As required a archaeological authority from the New Zealand Historic Places Trust prior to construction.
- A 1.8m noise barrier/fence along the length of the proposed service lane median in front of 111- 163 Caversham Valley Road will be designed, constructed and maintained.
- A 1.8m noise barrier/fence along the property boundaries of the houses and the state highway designation between 498 South Road and 8 Burnett Street will be designed, constructed and maintained.
- Further investigation of 472 South Road, 67 Caversham Valley Road and 8 Burnett Street to identify whether some form of acoustic treatment of the building would be a practicable mitigation of the potential effects of increased road noise.
- A Peripatus Management Plan will be commissioned as a reference document to be available for the Dunedin City Council, to assist in its management of the reserve areas, with the purpose of safeguarding the future of the Peripatus population;
- The Caversham Bush Reserve land required for the CVSI will be replaced by either:
  - (i) protection of an equivalent area of appropriate habitat connected to the site currently occupied by Peripatus; or
  - (ii) procurement of an equivalent area of appropriate habitat connected to the site currently occupied by Peripatus; or
  - (iii) investment in the enhancement of an area connected to the existing Peripatus reserve that has a tree canopy and could be improved to provide Peripatus habitat reasonably quickly.
- The services of a person experienced in the habitat requirements and translocation of Peripatus will be used to produce a Peripatus Translocation Plan prior to the commencement of highway construction.
- A search, capture and translocation exercise along the length of the proposed highway footprint on the north side of the state highway from Lookout Point Reserve to Caversham Valley Forest Reserve immediately prior to the commencement of vegetation removal to translocate as many Peripatus as can be found from the site will be undertaken.
- The state highway fringes adjacent to the Caversham Valley Forest Reserve and Lookout Point Reserve will be planted in a natural assemblage of ecosourced native tree and shrub species appropriate for south facing Caversham slopes and link these to existing mature vegetation on both Council reserves to provide future habitat for native birds and invertebrates and long-term future habitat for Peripatus.
- A Construction Management Plan will be developed and include but not limited to the following:
  - (i) All mitigation measures taken during construction to reduce adverse effects on traffic management in relation to effects on local roads;
  - (ii) All mitigation measures taken during construction to reduce adverse effects on adjoining properties, including, dust, noise, sediment runoff and safety of people visiting the site;
  - (iii) A copy of the archaeological authority for the project and the protocols to be followed in the event of a discovery of an archaeological site;
  - (iv) A complaints register to keep record of the communities concerns raised with the contractor and any resulting mitigation carried out to address the concerns raised;

- (v) Appropriate auditing requirements to ensure performance of all components of the construction management plan.
- (vi) A copy of the Construction Management Plan will be kept on site at all times.

## 12. Conclusion

The existing state highway corridor is no longer 'fit for purpose' in terms of safety route and across route efficiency. There is considerable risk at the Barnes Drive and Lookout Point intersections with numerous crashes, including recent fatal crashes at each, where intersection related vehicle movements were a factor. Lookout Point has major sight distance deficiencies with steep approach gradients from both directions to the intersections at South Road and Mornington Road. The problem is prevalent from the southern direction where traffic is approaching the city area from a 100km/h zone and although the speed limit is reduced to 50km/h approximately 300m from the crest the majority of vehicles are still travelling at speeds around 60 – 70km/h.

Caversham Valley has a constrained geometric environment that further exacerbates the safety risk, as highlighted by a recent head on crash, with reluctant reliance on speed camera operation to further manage safety. This section was widened to four lanes with the addition of a downhill (north bound) lane in 1999. The traffic lanes over a major part of this section are of limited width, shoulders are non-existent and side friction continues to be a problem with residential landuse adjoining the road.

The NZTA therefore proposes to alter the state highway designation in the vicinity of Caversham Valley Road, SH1, in order to facilitate the widening of the state highway and the other Caversham Valley Safety Improvements.

Directly affected parties, key stakeholders and the surrounding community have been consulted and their feedback on the proposed options has been assessed and incorporated into the project where appropriate.

The proposed alteration to the state highway designations have been assessed against the requirements of Section 181(1) of the RMA.

In term of section 5 of the RMA, the state highway is considered a significant physical resource and the proposed alteration to designation will support the functions of the state highway network and its continued sustainable use and management through improving both safety and efficiency. Potential adverse effects will be avoided, remedied, or mitigated. Any ongoing adverse environmental effects such as the increase in operational noise to some residents, changes in local travel routes, visual effects as a result of the construction of noise barriers and bridge structures need to be balanced against the benefits arising from the project. It is believed that the granting of this application, and the resultant physical works, will achieve the purpose of the RMA.

On this basis, the NZTA requests the Council process this notice of requirement to alter the relevant designations on a notified basis and as soon as possible in order to enable the project to be progressed.

The NZTA seeks a 10 year term to give effect to the public works proposed to be carried out in the newly designated area.

## Appendix A: Location Map



## Appendix B: Designation Plan



## **Appendix C: Land Requirement Plan and Certificate of Titles**

## Appendix D: Proposed Options

## Appendix E: Option Development Diagram

## Appendix F: Consultation Report

## **Appendix G: Urban Design, Landscape and Visual Assessment Report**

## Appendix H: Noise Assessment

## Appendix I: Ecological Assessment

## Appendix J: Integrated Traffic Assessment



## Appendix K: Social Impact Assessment

## Appendix L: Heritage Report