542/598

Blenheim Road Deviation

COSTS (Costs net of thirds-party contributions in brackets)

Total	Renewal	Backlog	Unallocated	Growth
$14,411,428 ($13,475,601)	$1,008,800 ($943,292)	$5,763,130 ($5,388,893)	0	$7,639,498 **($7,143,416)**

COST ALLOCATION

Primary Driver:	Continued congestion and poor level of safety for motorists on key demand route (Moorhouse-Blenheim) Continued poor Level of Service for pedestrians and cyclists Poor amenity for residential-zoned land on Former Saleyards land.
Secondary Driver:	
Capacity discussion:	
References:	

ATTRIBUTES

Project Manager:	Ross Herrett, Paul Roberts
Work Planned:	Construction of a new 4-lane link, including rail overbridge from Mandeville Street to Moorhouse Avenue
Location:	Blenheim Road E of Deans Avenue
Special features being addressed:	Provision of secure railway overbridge; Improved pedestrian and cycle link along existing Blenheim Road corridor.
A statement of the outcomes being addressed (LoS, Community Outcomes):	Level of Service (removal of dogleg for key demand movement) Improved network safety Support for residential zoning adjacent to Park
Options considered:	Preferred option considered against do-minimum (upgrading existing bridge) & 8 alignment options.

Implications of not doing the project:	Continued congestion and poor level of safety for motorists on key demand route (Moorhouse-Blenheim) Continued poor Level of Service for pedestrians and cyclists Poor amenity for residential-zoned land on former Saleyards land
Linkages with other projects:	Tower Junction redevelopment
Location of other relevant supporting information:	The Blenheim Road Deviation information booklet. Various Council reports (see website)

Project Cost Allocation Summary

Background

Project No	542/598	Activity	Transport and City Streets
Project Name	Blenheim Road Deviation		
Project Manager	Ross Herrett, Paul Roberts		
Year first spend on the project	2000	Project Scope	Construction of a new 4-lane link, including rail overbridge from Mandeville Street to Moorhouse Avenue. Please note that the funding estimate from LTNZ is conservatively estimated at 7%.
Year of first cost allocation	2006		
Year of current cost allocation	2006		
Project cost	$14,411,428		

Level of Service Definitions

Measure	Ratio	Primary Driver	Continued congestion and poor level of safety for motorists on key demand route (Moorhouse-Blenheim) Continued poor Level of Service for pedestrians and cyclists Poor amenity for residential-zoned land on Former Saleyards land
Existing Capacity	100.0		
Existing Demand	143.0		
Total Capacity	200.0	Secondary Driver	
Design Capacity Year	2032		
End of Life Year	2047		
Backlog Capacity	43	Capacity Discussion	
Growth Capacity	57		
New Work Capacity	100		
% Backlog of New Work	43	References	
% Growth of New Work	57		

Localities:

locality	percentage	comment
Riccarton	100	

Operations and Maintenance

O&M Cost Share	$0		

Renewal

Stand Alone Renewal Cost	$1,008,800	Renewal Scope	Standard assumption for renewal component of Road Network Improvements

New Works

Stand Alone New Works Cost	$14,411,428	New Works Scope	Standard assumption for new work component of Road Network Improvement.
Renewal Cost Share	$1,008,800		
New Work Cost Share	$14,411,428		

Preliminary Cost Shares

Backlog Cost Share	$5,763,130
Growth Cost Share	$7,639,498

Growth project

Stand Alone Growth Cost	$14,411,428	Growth Project Scope	Standard assumption for growth component of Road Network Improvements.
Growth Cap	$14,411,428		

Unallocated costs

Unallocated Cost Share	$0

Project funding

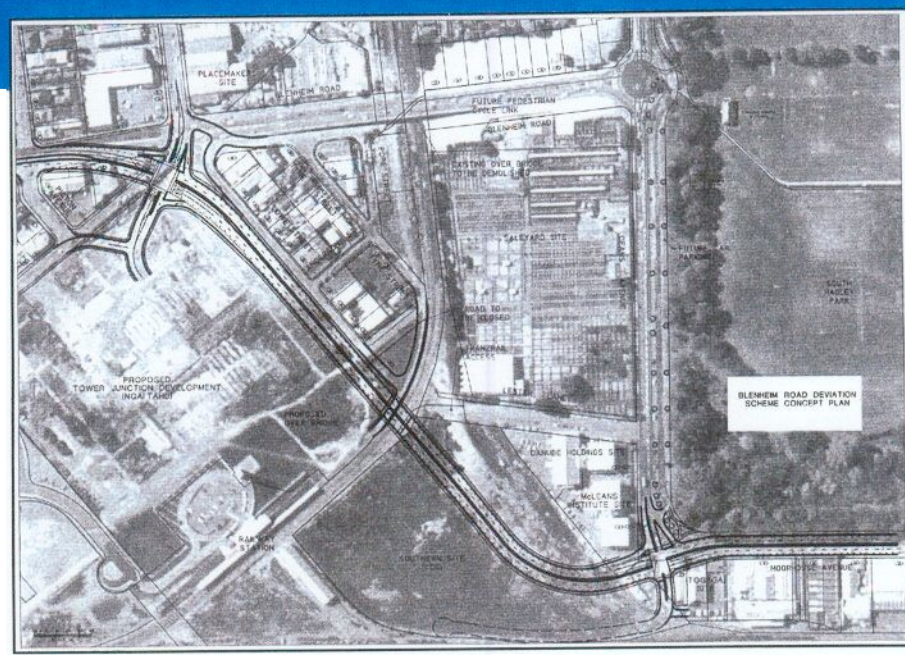
External Funding	$935,827

Summary of Cost Allocation

	%	Total Cost	Net Cost
O&M		$0	$0
Renewal	7%	$1,008,800	$943,292
Backlog	40%	$5,763,130	$5,388,893
Growth	53%	$7,639,498	$7,143,416
Unallocated	0%	$0	$0
External Funding			$935,827
Project Total	100%	$14,411,428	$13,475,601

The Blenheim Road Deviation

The Christchurch City Council proposes to deviate the eastern end of Blenheim Road from its present alignment to curve south-east from Mandeville Street and connect with Moorhouse Avenue at the south west corner of Hagley Park.



What is proposed?

The deviation would run roughly parallel to Lowe Street, using land formerly occupied by the rail yards. It would then cross the railway line via a new bridge and curve east towards Moorhouse Ave.

The new median-divided road would replace the existing length of Blenheim Road between Mandeville Street and Deans Avenue and divert traffic from the southern end of Deans Ave.

The proposal includes:

- signal intersections at either end of the deviation
- demolition of the existing rail overbridge
- an improved pedestrian/cycle link across the railway line in the existing road corridor
- creation of easements for services and disposal of surplus road
- modified access onto Mandeville Street for properties in the Lowe Street/Pope St/ Tyne St/ Andersons St area.

Potential **advantages of the** scheme

- Improved safety by removing the existing Blenheim Road / Deans Ave roundabout and the Deans Ave / Moorhouse Ave bend
- Removal of the existing 'dog-leg' for major traffic movement
- A better level of service for pedestrians and cyclists
- Improved visibility from passing traffic for businesses adjacent to the deviation
- Reduced traffic on Deans Ave. This will improve the potential to develop the Saleyards site and to reduce the carriageway width of Deans Avenue and devote more of the road reserve to parking for Hagley Park visitors.

This scheme is indicative only and may be changed following consultation and design.

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Why is the Deviation Being Proposed?

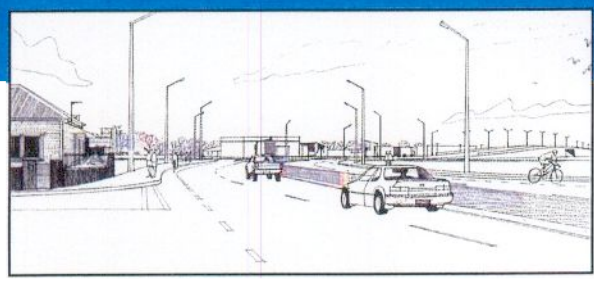
The existing Blenheim Road overbridge has been identified as being at significant risk of failure during an earthquake. Its approaches ('crib-walls') are also in poor condition and require remedial work to prevent cracking and slumping of the roadway. Strengthening of the bridge and reconstruction of the approaches are necessary for them to withstand a significant earthquake.

Currently, where Blenheim Road terminates at **the roundabout** with Deans Avenue, traffic can build up in peak periods onto the rail overbridge. This increases the potential for rear end collisions with vehicles coming over the crest of the bridge. The bridge and its approaches have a reported accident rate that is much higher than would normally be expected for the traffic volumes it caters for. The bend where Deans Ave meets Moorhouse Ave is also the site of significant 'loss-of-control' crashes.

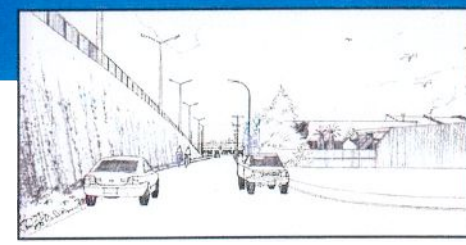
The existing **linkage between Blenheim Road and Moorhouse Ave** requires traffic to follow a 'dog-leg' around the south-west corner of Hagley Park, via Deans Avenue. This section of road carries about 28,000 vehicles on a typical workday. Such a level of traffic impedes the development of the old Saleyards land for residential purposes, which is the Council's preferred use.

For **pedestrians and cyclists**, the existing bridge forms one of the few links across the railway line in the area. This link is valued, particularly by local residents, but users are poorly serviced by inadequate facilities on the bridge. Their access across Deans Ave to Hagley Park is also hampered by current high traffic volumes.

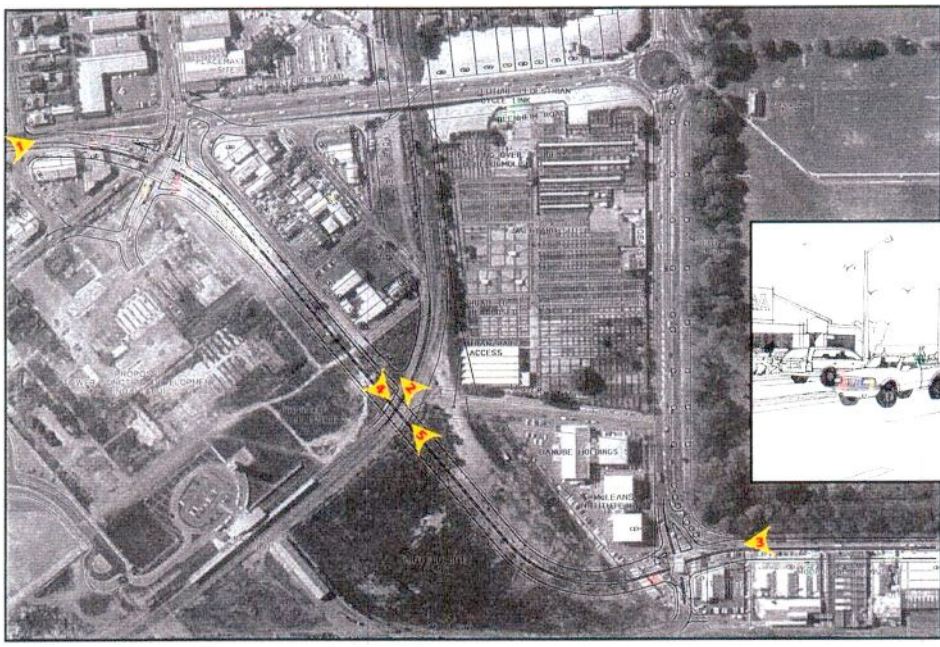
What Would it Look Like?

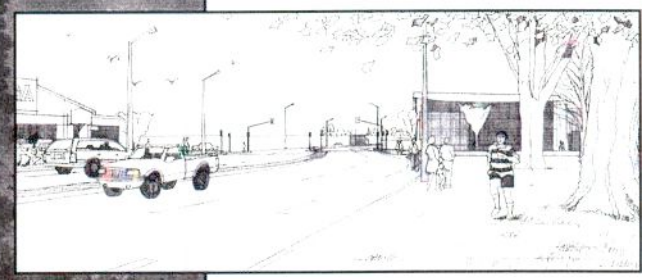


1. View from footpath, corner Blenheim Road and Picton Ave, looking east toward Hagley Park



2. View from railway line, looking NW along Lowe Street. Proposed approaches to overbridge on left





3. View from SW corner of Hagley Park, looking west along proposed deviation

Blenheim Road Deviation Scheme Concept Plan

4. View from new overbridge looking SE

5. View from new overbridge looking NW

This scheme is indicative only and may be changed following consultation and design.

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Potential Effects on Traffic

Traffic Effects

The existing (year 2001) pattern of traffic through the local area has been established through a combination of count information and a computer traffic model. This is shown in Diagrams 1 and 5 and detailed in the table that follows.

Predicted traffic volumes, if all the anticipated development in the local area (e.g. Tower Junction and the Old Saleyards) was completed now, are shown in Diagram 2. This level of traffic forms the basis for assessment of the effects of the Deviation.

The traffic volumes, if the Deviation proceeds, are shown in Diagram 3, while the predicted change from the situation with the existing ('Do-minimum') road network is shown in Diagram 4.

The analysis confirms that the Deviation would have a significant positive impact in terms of relief from traffic pressure on Deans Avenue and Blenheim Road adjacent to the Old Saleyards. The forecast volume on Deans Avenue would be reduced by between 50-55% (or about 16,000 vehicles per day) over what it would be otherwise (with the anticipated local development).

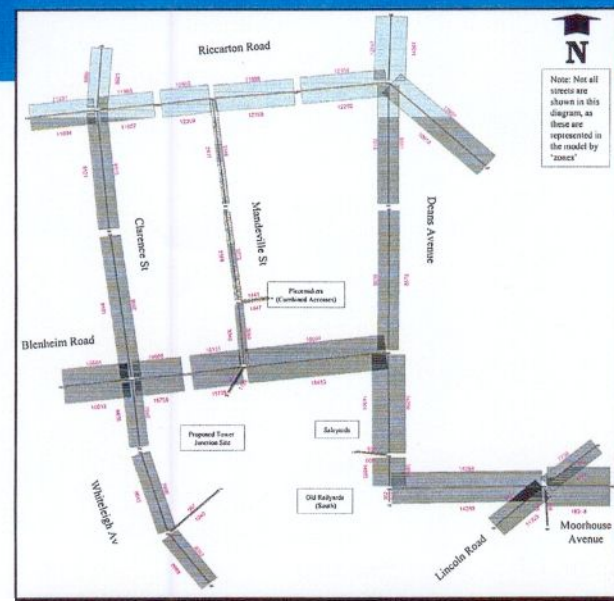

Diagram 1: Existing Traffic Volumes (2001)

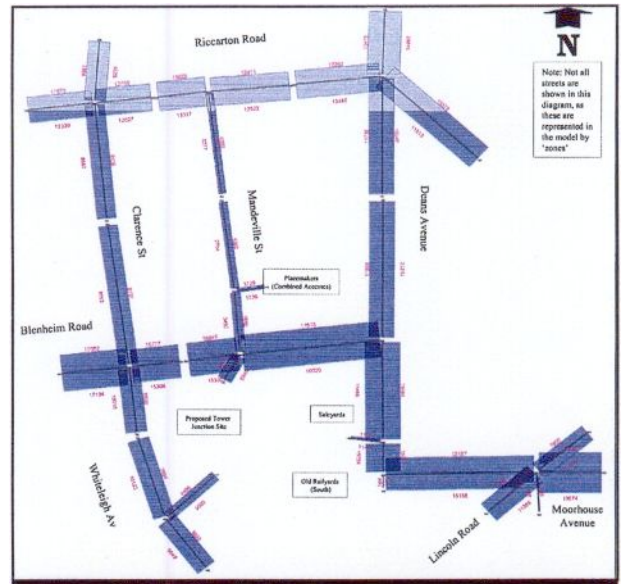

Diagram 2: Traffic Volumes with Anticipated Development

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Traffic Effects continued (i)

Some of the traffic that currently makes the manoeuvre between Blenheim Road and Nancy's Roundabout is predicted to take alternative routes if the existing overbridge is closed, as intended as part of the project. This effect is forecast to also reduce traffic volumes by about 30-35% on Deans Avenue between Nancy's Roundabout and Blenheim Road.

However, traffic volumes on Mandeville Street are forecast to rise, given a combination of anticipated local development and the Deviation. The forecast volumes, of up to 12-13,000 vehicles per day at the southern end, are nevertheless predicted to be well within the actual capacity of the road. If the intersection with Riccarton Road was signalised, these traffic volumes could rise still further (as Mandeville Street would then become a more attractive alternative to the Deviation for eastbound traffic between Blenheim Road and Nancy's Roundabout).

Diversion of some eastbound traffic to Mandeville Street also has the potential to add to delay experienced at peak times on the northbound approach at Nancy's Roundabout.

Overall, however, there is expected to be no significant change in the delays on the local road network if the Deviation proceeds.

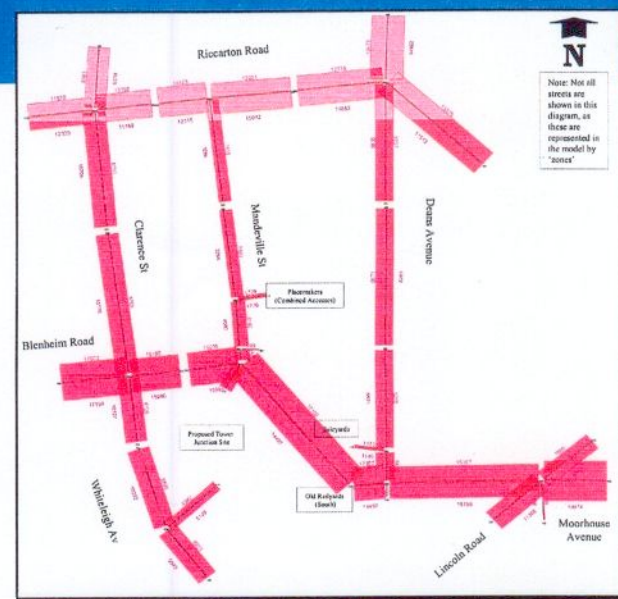

Diagram 3: Traffic Volumes with Deviation & Anticipated Development

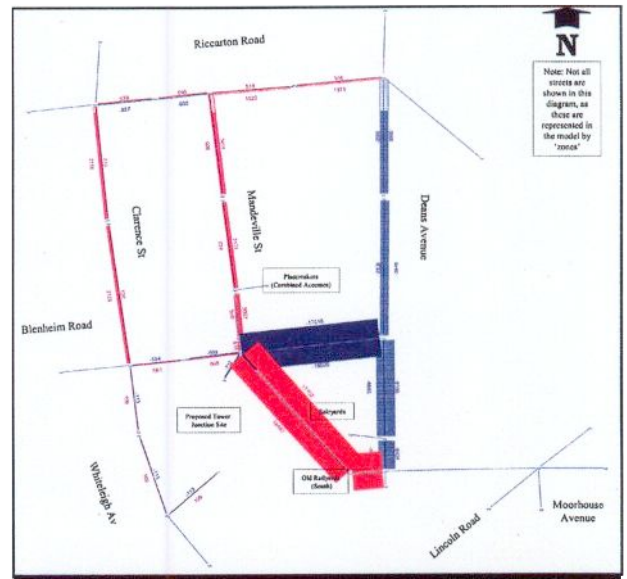

Diagram 4: Changes Predicted with Deviation (Base Scenario)

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Traffic Effects continued (II)

Accidents

The corner of Deans/Moorhouse Avenues and the existing roundabout at Blenheim Road/Deans Ave are sites of a significant number of road crashes, both injury and non-injury. In total, there is currently estimated to be about 46 injury crashes each year in the road network shown in the diagrams here.

The Deviation project is predicted to save about 10-12 of these road crashes each year. This would add up to an estimated saving in social cost of about $1.5m over the next 25 years.

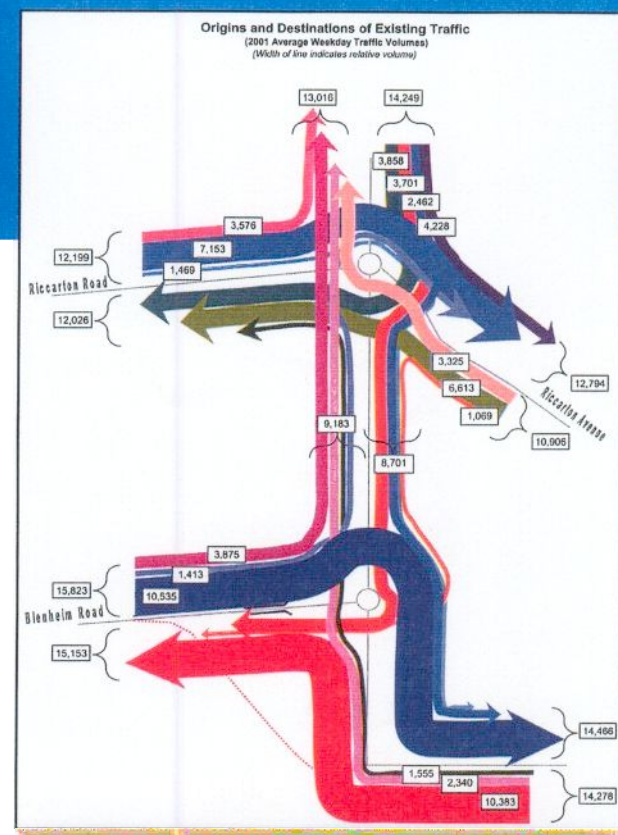
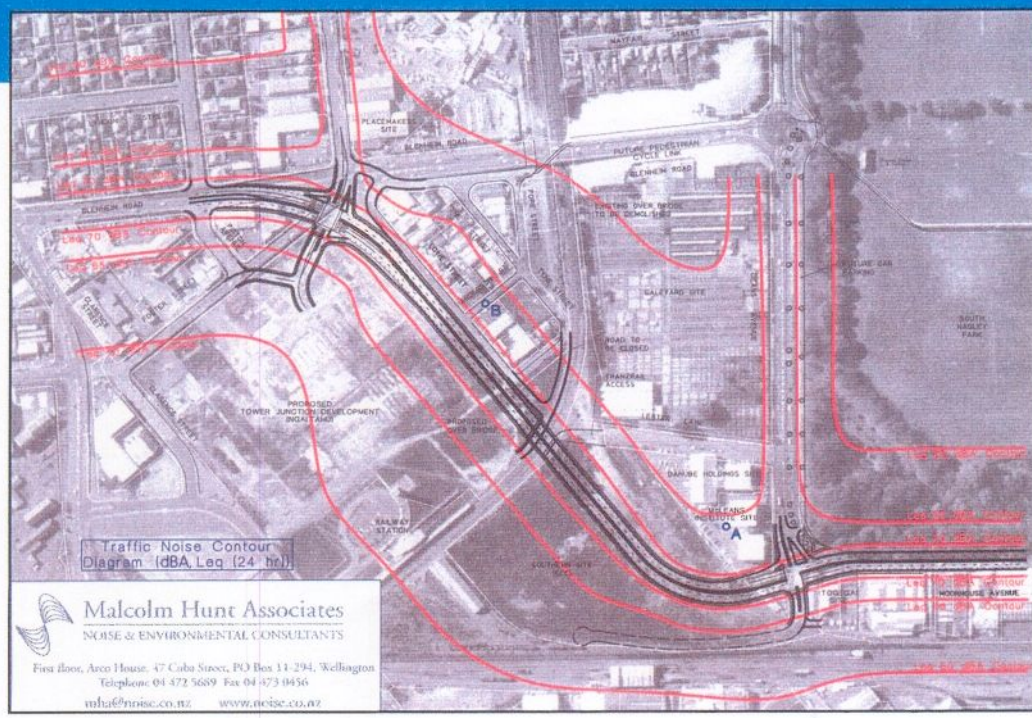


Diagram 5: Origins and Destinations of Existing Traffic

Daily Traffic Volumes at Selected Locations ('2001')

Reference	Road	Location	Count (or estimated count)	Existing Network: Modelled 2001 existing Traffic	% Error in Model	Existing Network: Modelled With Local Development	% Change due to Local Development	With Deviation: Modelled 2001, With Local Development	% Change due to Deviation	With Deviation: Modelled 2001, With Development (Sensivity Test)	% Change due to Deviation
1	Blenheim Road	at Overbridge	31,000	31,600	1.9%	33,650	6.5%	-100.0%	-	-	100.0%
2	Blenheim Road	on Deviation	-	-	n/a	-	n/a	31,600	100.0%	35,700	100.0%
3	Blenheim Road	West of Clarence Street	31,800	31,800	0.0%	34,200	7.5%	34,200	0.0%	35,350	3.4%
4	Clarence Street	North of Blenheim Road	17,500	17,600	0.6%	16,800	-4.5%	19,550	16.4%	19,150	14.0%
5	Deans Avenue	North of Blenheim Road	17,900	17,800	-0.6%	22,000	23.6%	15,150	-31.1%	14,500	-34.1%
6	Deans Avenue	North of Riccarton Road	27,250	27,000	-0.9%	28,450	5.4%	28,450	0.0%	24,300	-14.6%
7	Deans Avenue	South of Blenheim Road	28,550	28,550	0.0%	30,950	8.4%	15,150	-51.1%	14,500	-53.2%
8	Hagley Avenue	North of Lincoln Road	16,100	16,100	0.0%	16,250	0.9%	16,250	0.0%	17,700	8.9%
9	Lincoln Road	South of Moorhouse Avenue	20,750	20,800	0.2%	20,900	0.5%	20,900	0.0%	20,000	-4.3%
10	Mandeville Street	North of Blenheim Road	7,200	7,200	0.0%	8,600	19.4%	12,250	42.4%	12,700	47.7%
11	Mandeville Street	South of Riccarton Road	5,600	5,550	-0.9%	6,400	15.3%	10,700	67.2%	11,050	72.7%
12	Moorhouse Avenue	East of Lincoln Road	36,150	36,150	0.0%	37,700	4.3%	37,700	0.0%	45,400	20.4%
13	Moorhouse Avenue	West of Lincoln Road	28,750	28,550	-0.7%	30,350	6.3%	30,350	0.0%	38,250	26.0%
14	Riccarton Avenue	East of Deans Avenue	23,700	23,700	0.0%	24,900	5.1%	24,900	0.0%	21,950	-11.8%
15	Riccarton Road	at Railway Crossing	24,200	24,400	0.8%	25,850	5.9%	27,950	8.1%	26,150	1.2%
16	Riccarton Road	East of Clarence Street	23,900	23,500	-1.7%	25,400	8.1%	25,150	-1.0%	24,300	-4.3%
17	Riccarton Road	West of Clarence Street	23,100	23,150	0.2%	24,000	3.7%	24,000	0.0%	23,850	-0.6%
18	Straven Road	North of Riccarton Road	17,550	17,600	0.3%	18,200	3.4%	8,200	0.0%	19,150	5.2%
19	Whiteleigh Avenue	South of Blenheim Road	16,700	16,200	-3.0%	18,850	16.4%	18,850	0.0%	17,100	-9.3%
20	Whiteleigh Avenue	at Railway Crossing	16,750	16,700	-0.3%	18,500	10.8%	18,500	0.0%	15,500	-16.2%
Total Trips in Area (no. of vehicles)			n/a	122,843	n/a	138,390	12.7%	138,390	0.0%	138,390	0.0%
Total Vehicle Travel in Area (no. of vehicle km			n/a	158,738	n/a	173,385	9.2%	172,285	-0.6%	175,481	1.2%

Potential Effects on Noise & Lighting



Traffic Noise Contour Diagram

Noise Effects

Traffic Noise Assessment

Standards & Procedures

The assessment method is "Draft Guidelines For the Management of Road Traffic Noise - State Highway Improvements", part of Transit New Zealand's Planning Policy Manual dated December 1999. These procedures require assessment up to a design year 10 years from the opening of the new route.

Predictions have been carried out using "Traffic Noise From Uninterrupted Traffic Flows", Transit NZ Research Report No. 28, 1994. This is a UK-developed procedure calibrated for use in New Zealand by comparing measured versus predicted levels for over 100 sites.

Predicted noise contours are 60, 65 and 70 dBA Leq(24 hours).

These contours do **not** show the noise-reducing effect of a proposed noise barrier fence on the new overbridge (one metre high, transparent material, fitting beneath the handrail). This will cause some contraction of the noise contours in areas near the bridge.

Existing ambient noise levels measured at two locations (A and B shown). Measurement procedure based on NZS6801:1999 Acoustics – Measurement of Sound. The overall 24 hour sound levels measured in June 2001 were:

A = 54.3 dBA Leq(24 hr)

B = 55.4 dBA Leq(24 hr).

Noise Effects continued

Summary Findings
Changes in traffic noise closely follow changes in traffic flows. Traffic noise is largely being re-located from the current eastern end of Blenheim Road to the new deviation.

The noise impact is of most concern at residential sites. The nearest residential sites are located in Tyne and Anderson Streets as shown. The increase in traffic noise at these sites will be quite minor, and will be assisted by the removal of the existing Blenheim Road rail overbridge which is a significant local source of traffic noise.

Residential sites to the north of the existing Blenheim Road rail overbridge will receive a significant reduction in noise from current levels.

Future use of land in the area zoned 'Living' (i.e. residential) under the District Plan will be able to be carried out in full compliance with the traffic noise limits recommended by the TNZ Traffic Noise Guidelines.

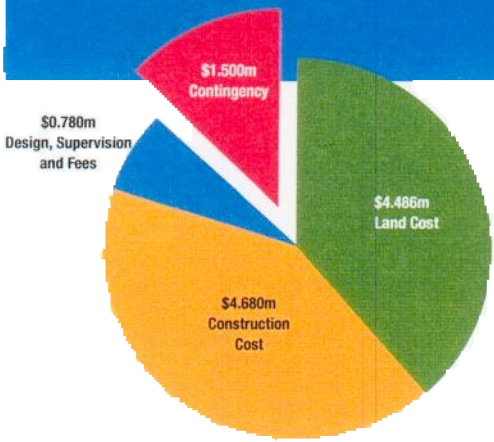
Lighting Effects

Generally the roadway lighting standards will be positioned on the eastern side of the road deviation.

As well as providing for roadway illumination, the lighting will raise the ambience of the area and provide improved security, particularly for the industrial premises along Lowe Street.

The road deviation is sufficiently distant from existing houses and those under construction for the lighting to have minimal effect on residential properties, in terms of glare and spill lighting.

Have Your Say



Budget

The Council has approved expenditure of $9.945m (+$1.5m contingency) to construct the Deviation Project. This is made up as shown.

Designation Process

Requirement submitted with all necessary info

↓

Requirement for designation publicly notified

↓

Submissions received

↓

Hearing

↓

Commissioner's recommendation to Council

↓

Council adopts recommendation as its decision

↓

Decision notified

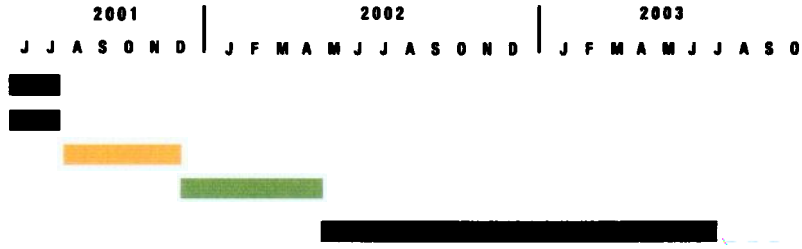
↓

Appeals to Environment Court

↓

Environment Court hearing and decision

Anticipated Programme for Project Completion



Note: this programme is indicative only and is subject to the Designation Consent process.

The Legal Process

Now - Consultation

The Council is seeking your comments now on the proposed deviation of Blenheim Road. Council will try to address your concerns in its final planning and design. Any questions or concerns can be put in writing on the leaflet sent out to residents, or you can simply tell a Council staff member at the consultation meetings.

Later - Designation

When all the details are finalised (probably late July), the Council will apply to have the new route for Blenheim Road 'designated' in the City Plan. It will do this by a 'Notice of Requirement for a Designation' which will be publicly notified. At that stage any person can lodge a formal submission to the Notice of Requirement. All submissions will be heard by an independent commissioner.
Refer to the Designation Process above.

Even later - roads no longer needed

Some parts of roads won't be needed after the deviation is in place.
These will be legally stopped by a separate process under the Local Government Act.

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Proposed Tower Junction Project

Artist's impression of the Tower Junction Development

Effects of Anticipated Development

There are large areas of currently vacant land in the vicinity of the Deviation project, much of which is zoned in the proposed City Plan for 'Business' or 'Living' purposes. Examples include the Tower Junction site (illustrated here) and the Old Saleyards.

It is anticipated that this land will be developed for these purposes. This in turn will generate traffic, which will add to the existing traffic on surrounding roads whether or not the Deviation proceeds. It is prudent, therefore, to assume the resulting traffic demands on the existing traffic network should form the basis for assessment of the effects of the Deviation.

Predicted traffic volumes, if all the anticipated development was completed now, are shown in Diagram 2 of Traffic Effects.

In the local area, while traffic volumes could be expected to rise on main roads by about 13% over a typical week day and 16% in the evening peak hour, as a result of these anticipated developments, the impact on existing traffic (in terms of increased queuing and delays) is expected to be much less significant. In the busiest evening peak hour period, a typical journey is predicted to take about 8% longer than it does at present, while the impact during the day is half this again.