



**New Beaumont Bridge
Notice of Requirement for an Alteration to a
Designation and Resource Consent Applications**

This report has been prepared on behalf of the NZ Transport Agency. 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: Shane Roberts

Reviewed by: Richard Shaw

Approved for issue by: Simon Underwood

Revision Schedule

Rev. No	Date	Description	Prepared by	Reviewed by	Approved by
1	October 2019	For lodgement	SR	RS	SU

NZ Transport Agency

Contents

1.	Introduction	1
	Purpose and Scope of this AEE Report	1
	Structure of this Report	1
2.	Reasons for the Project	2
2.1	Project Objectives	2
2.2	Need for the Project.....	2
2.2.1	Problem.....	2
2.2.2	Potential impacts of problem.....	3
2.2.3	Proposed Solution.....	3
2.3	Need for the Designation	3
2.4	Benefits of the Project.....	4
3	Statutory Approvals Sought under the RMA.....	5
3.3	Notice of Requirement	5
4	Existing Environment	9
4.1	Location	9
4.2	Existing Transport Network.....	9
4.3	Existing Pedestrian and Cycle Links.....	9
4.4	Land Use/Surrounding Area	10
4.4	Landscape	10
4.6	Geology and Geohydrology	10
4.7	Ecology.....	11
4.7.1	Freshwater.....	11
4.7.2	Terrestrial.....	11
4.8	Water Quality.....	12
4.9	Archaeology and Heritage.....	12
4.10	Cultural Values	13
4.11	Social and Community	13
4.12	Utilities.....	14
5	Project Description.....	15
5.1	Overview	15
5.2	Alignment and Elevation	15

5.3	Intersections and Property Access	16
5.4	Road Cross Sections.....	16
5.5	Bridge Construction.....	17
5.6	Pedestrian and Cycle Ways	20
5.7	Safe Stopping Area.....	21
5.8	Lighting.....	21
5.9	Earthworks	21
5.10	Site Dewatering.....	21
5.11	Stormwater Management	21
5.12	Watercourses.....	23
5.13	Construction Works and Programme	23
6	Consideration of Alternatives.....	24
7	Consultation	26
7.1	Business Case Stage.....	26
7.2	Design stage.....	26
8	Assessment of Effects	30
8.1	Overview	30
	8.1.1 Mitigation Measures.....	30
8.2	Positive Effects.....	32
8.3	Traffic.....	32
	8.3.1 Traffic Management during Construction.....	32
	8.3.2 Post Construction.....	32
	8.3.3 Summary	33
8.4	Air Quality.....	33
	8.4.1 Construction Related Effects.....	33
	8.4.2 Mitigation Measures.....	33
	8.4.3 Summary	34
8.5	Landscape and Visual Effects	34
	8.5.1 Landscaping Treatment.....	34
	8.5.2 Mitigation Measures.....	35
	8.5.3 Summary	35
8.6	Lighting.....	35
8.7	Noise and Vibration	35
	8.7.1 Construction Noise and Vibration.....	36
	8.7.2 Operational Noise and Vibration.....	37
8.8	Contaminated Land.....	37
8.9	Water Quality.....	38
	8.9.1 Mitigation Measures.....	38
	8.9.2 Summary	39

8.10	Aquatic Ecology	39
8.10.1	Operational Effects on Aquatic Ecology.....	39
8.10.2	Construction Effects on Aquatic Ecology.....	39
8.10.3	Summary	40
8.11	Terrestrial Ecology.....	41
8.11.1	Construction effects.....	41
8.11.2	Mitigation Measures.....	41
8.12	Hydrology and Hydraulics	41
8.13	Cultural Values	43
8.14	Archaeological and Heritage values	44
8.15	Social and Recreation.....	46
8.16	Infrastructure	46
8.17	Summary of Effects.....	47
9.	Statutory Assessment.....	49
9.1	Notice of Requirement	49
9.1.1	Section 181 RMA.....	49
9.1.2	Effects on the Environment.....	49
9.1.3	Extent of Boundary Alteration.....	50
9.1.4	Directly Affected Party Approvals.....	50
9.1.5	Territorial Authority and Requiring Authority Agreement	50
9.1.5	Section 171(1) Resource Management Act 1991	50
9.1.6	National Policy Statements	51
9.1.7	National Environmental Standards	51
9.1.8	Regional Policy Statements	51
9.1.9	Clutha District Plan	52
9.2	Resource Consent Applications	52
9.2.1	Section 104 RMA.....	52
9.2.2	National Environmental Standards	53
9.2.3	Other Regulations	53
9.2.4	National Policy Statements	53
9.2.5	Regional Policy Statements.....	53
9.2.6	Regional Plans.....	53
9.2.7	Section 107 RMA.....	54
9.3	Other Matters	54
9.3.1	Iwi Environmental Management Plans	54
9.3.2	Other Statutory Approvals Required.....	55
9.4	RMA Part 2.....	55
9.4.1	Section 6.....	55
9.4.2	Section 7.....	56
9.4.3	Section 8.....	57

9.4.4 Section 5.....57

10. Summary..... 59

Appendix 1 Design Plans

Appendix 2 Designation Plans

Appendix 3 Objectives and Policies Assessment

Appendix 4 Proposed Conditions

Appendix 5 Technical Reports

- Ecological Report
- Preliminary Site Investigation
- Hydraulics Report
- Hydrology Report
- Archaeological Assessment
- Noise and Vibration Assessment

Form 18 Notice of Requirement for an Alteration of Designation

Pursuant to Section 181 of the Resource Management Act 1991 (RMA)

TO: CLUTHA DISTRICT COUNCIL (CDC)
PO Box 25
BALCLUTHA 9240

FROM: NZ TRANSPORT AGENCY (the Transport Agency)
PO Box 5245
DUNEDIN

(NOTE: address for service given below)

Notice is given to CDC of a requirement by the Transport Agency for an alteration to a designation for a public work.

The land parcels affected by this Notice of Requirement fall into two categories: land required for road, and land required for construction.

Included within the designation will be traffic lanes, cycle/pedestrian connections, stormwater infrastructure, landscaping, ancillary infrastructure, and road construction.

The term sought to give effect to the designation is 10 years, in accordance with Section 184(1)(c) of the Resource Management Act 1991.

The designation over land required for construction is required until such time as road construction is complete, after which these parts of the designation will be uplifted.

Further details of the required designation are as follows:

Location:

The location to which this Notice of Requirement applies is generally described as a section of State Highway 8 at the Beaumont bridge and approaches.

The land parcels affected by this Notice of Requirement are as set out in the Land Requirement Schedules below and their location is shown on the Designation Plan attached to and forming part of this Notice of Requirement.

NZ Transport Agency - New Beaumont Bridge

LAND DESIGNATION SCHEDULE- LAND REQUIRED FOR STATE HIGHWAY PURPOSES		
REFERENCE	DESCRIPTION	ADDITIONAL LAND TO BE DESIGNATED (m ²)
1a	SECTION 4 TN OF BLK XVI DUNKELD, OT207/11 PETERS FAIRFIELD TRUSTEES NO 3 LIMITED	195
1b	SECTION 3 TN OF BLK XVI DUNKELD, OT207/11 PETERS FAIRFIELD TRUSTEES NO 3 LIMITED	230
1c	SECTION 2 TN OF BLK XVI DUNKELD, OT207/11 PETERS FAIRFIELD TRUSTEES NO 3 LIMITED	280
1d	SECTION 1 TN OF BLK XVI DUNKELD, OT207/11 PETERS FAIRFIELD TRUSTEES NO 3 LIMITED	320
1e	SECTION 5 TN OF BLK IX DUNKELD, OT207/11 PETERS FAIRFIELD TRUSTEES NO 3 LIMITED	550
1f	SECTION 6 TN OF BLK IX DUNKELD, OT207/11 PETERS FAIRFIELD TRUSTEES NO 3 LIMITED	575
1g	SECTION 7 TN OF BLK IX DUNKELD, OT207/11 PETERS FAIRFIELD TRUSTEES NO 3 LIMITED	865
1h	SECTION 8 TN OF BLK IX DUNKELD, OT207/11 PETERS FAIRFIELD TRUSTEES NO 3 LIMITED	875
1i	SECTION 9 TN OF BLK IX DUNKELD, OT207/11 PETERS FAIRFIELD TRUSTEES NO 3 LIMITED	835
1j	SECTION 1 SURVEY OFFICE PLAN 23609 OTAGO, OT148/673 PETERS FAIRFIELD TRUSTEES NO 3 LIMITED	965
1k	SECTION 4 SURVEY OFFICE PLAN 23609 OTAGO, OT148/673 PETERS FAIRFIELD TRUSTEES NO 3 LIMITED	2865
2a	LOT 3 DEPOSITED PLAN 8804 444076 DUNBROOK DAIRIES LIMITED	1965
3a	PT SECTION 4 TN OF BLK XI DUNKELD OT331/181 JOHN ADRIAN NICHOLAS VAN ROSSEM	15
4a	SECTION 4 TN OF BLK VIII DUNKELD 473740 ALISON MARY MILLS GUNNAR EGILSSON	4065
4b	SECTION 1 TN OF BLK VIII DUNKELD 473740 ALISON MARY MILLS GUNNAR EGILSSON	450
4c	SECTION 2 TN OF BLK VIII DUNKELD 473740 ALISON MARY MILLS GUNNAR EGILSSON	1175
7a	CROWN LAND BLOCK VII TOWN OF DUNKELD DOC	865
7b	SECTION 1 50 23609 OTAGO OT148/673 DOC	125
7c	CROWN LAND RIVER BED LINZ	8500
8a	SECTION 2 SURVEY OFFICE PLAN 23610 OT148/688 DOC	2920

NZ Transport Agency – New Beaumont Bridge

8b	SECTION 2 SURVEY OFFICE PLAN 23610 OT148/688 MITCHELL	9990
8c	SURVEY 2 OFFICE PLAN 23610 OT148/689 MITCHELL	14620
9a	SECTION 1 TN OF BLK XX DUNKELD OT176/254 MARGARET FRANCES YARKER MICHAEL BRIAN HEALY	35

For completeness the following pieces of land are not being designated, but will be acquired for ‘local road’ and are shown on the designation plans as such

Land to be acquired for local road		
REFERENCE	DESCRIPTION	AREA (m ²)
2b	LOT 3 DEPOSITED PLAN 8804 444076 DUNBROOK DAIRIES LIMITED	255
5a	SECTION 8 TN OF BLK I DUNKELD 444075 JOSEPH CHRIS THEO SCHOLTEN	10
6a	PT SECTION 9 TN OF BLK I DUNKELD OT211/109 LAWRENCE TOWNHOUSE ACCOMMODATION LIMITED	10

The nature of the proposed public work (or project or work) is:

State highway purposes.

Included in the attached Assessment of Environmental Effects are:

- a) The nature of the proposed conditions that would apply
- b) The effects that the public work (or project or work) will have on the environment, and the ways in which any adverse effects will be mitigated
- c) Alternative sites, routes, and methods have been considered
- d) Why the public work (or project or work) and designation (or alteration) are reasonably necessary for achieving the objectives of the requiring authority
- e) A statement of consultation

The following resource consents are needed for the proposed activity and have been applied for:

From Clutha District Council – Land use consent under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS).

From Otago Regional Council – a range of land use consents (s9 and s13 RMA), water permits and discharge permits are required.

The Transport Agency attaches the following information required to be included in this notice by the district plan, regional plan, or any regulations made under the Resource Management Act 1991.

Assessment of Environmental Effects and designation plans.

Richard Shaw – Team Leader Consents and Approvals

NZ Transport Agency - New Beaumont Bridge

Pursuant to authority delegated by the NZ Transport Agency

Date: 24 October 2019

Address for Service:

NZ Transport Agency
c/- WSP Opus
Private Bag 1913
DUNEDIN 9054

ATTENTION: Shane Roberts

Ph (03) 454 5029
Mobile 027 237 1168
Email shane.l.roberts@wsp.com

Form 9 Application for Resource Consent

Pursuant to Section 88 of the Resource Management Act 1991 (RMA)

TO: CLUTHA DISTRICT COUNCIL (CDC)
PO Box 25
BALCLUTHA 9240

FROM: NZ TRANSPORT AGENCY (the Transport Agency)
PO Box 5245
DUNEDIN

(NOTE: address for service given below)

1. **The Transport Agency** applies for the following types of resource consent:

RMA	Activity	Duration Sought
Land use consent S9 RMA	Disturb soil Under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS).	10 years
	Land use consent to construct road & extend Hotel carpark	
	Land use consent to trim scheduled trees	

2. **The activity to which the application relates (the proposed activity) is as follows:**

Earthworks associated with the construction of the new Beaumont Bridge and approaches at Beaumont.

Refer to the Assessment of Effects on the Environment (AEE) for a detailed description of the proposed activities.

3. **The site at which the proposed activity is to occur is as follows:**

State Highway 8 and surrounds at the Beaumont bridge and approaches.

4. **The full name and address of each owners and occupier (other than the applicant) of the site to which the application relates is as follows:**

- Clutha District Council
- M & M Healy, 2 Weardale Street, Beaumont
- D & J Mitchell, 1773 Beaumont Highway, Beaumont
- T & K Peters, 1910 Beaumont Highway, Beaumont

5. **Additional resource consents required in relation to the proposal are as follows.**

From Otago Regional Council – a range of land use consents (s9 and s13 RMA), water permits and discharge permits are required.

6. **Attached is an assessment of the proposed activity's effect on the environment that—**

- a) **includes the information required by clause 6 of Schedule 4 of the Resource Management Act 1991; and**
- b) **addresses the matters specified in clause 7 of Schedule 4 of the Resource Management Act 1991; and**

- c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.
7. Attached is an assessment of the proposed activity against the matters set out in Part 2 of the Resource Management Act 1991.
8. Attached is an assessment of the proposed activity against any relevant provisions of a document referred to in section 104(1)(b) of the Resource Management Act 1991, including the information required by clause 2(2) of Schedule 4 of that Act.



Richard Shaw – Team Leader Consents and Approvals

Pursuant to authority delegated by the NZ Transport Agency

Date: 24 October 2019

Address for Service:

NZ Transport Agency
c/- WSP Opus
Private Bag 1913
DUNEDIN 9054

ATTENTION: Shane Roberts

Ph (03) 454 5029
Mobile 027 237 1168
Email shane.l.roberts@wsp.com

Form 9 Application for Resource Consent

Pursuant to Section 88 of the Resource Management Act 1991 (RMA)

**TO: OTAGO REGIONAL COUNCIL
PRIVATE BAG 1954
DUNEDIN 9054**

**FROM: NZ TRANSPORT AGENCY (the Transport Agency)
PO Box 5245
DUNEDIN**

(NOTE: address for service given below)

1. **The Transport Agency** applies for the following types of resource consent:

RMA	Activity	Duration Sought
Land use consent S9 RMA	Earthworks on a contaminated site	10 years
Land use consent S13 RMA	Erection of structures and associated bed disturbance of the Clutha River Mata-Au	
	Gravel extraction from the Clutha River Mata-Au	
	Removal of vegetation in the bed, including associated disturbance of the bed of the Clutha River Mata-Au	
Water Permit S14 RMA	Permanent diversion of the Clutha River Mata-Au	
	Temporary diversion of the Clutha River Mata-Au	
Discharge Permit S15 RMA	Discharge of stormwater to surface water and/or land where it may enter water (construction)	
	The discharge of a sediment associated with construction activity	

2. **The activity to which the application relates (the proposed activity) is as follows:**

The construction and operation of the new Beaumont Bridge and approaches at Beaumont.

Refer to the Assessment of Effects on Environment (AEE) for a detailed description of the proposed activities.

3. **The site at which the proposed activity is to occur is as follows:**

State Highway 8 and surrounds at Beaumont.

4. **The full name and address of each owners and occupier (other than the applicant) of the site to which the applicates relates is as follows:**

- The Crown (river bed)
- M & M Healy, 2 Weardale Street, Beaumont
- D & J Mitchell, 1773 Beaumont Highway, Beaumont
- T & K Peters, 1910 Beaumont Highway, Beaumont

5. **Additional resource consents required in relation to the proposal are as follows.**

From Clutha District Council – Land use consent under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS).

Land use consent for road construction and the trimming of scheduled trees.

6. **Attached is an assessment of the proposed activity's effect on the environment that—**

- d) **includes the information required by clause 6 of Schedule 4 of the Resource Management Act 1991; and**
- e) **addresses the matters specified in clause 7 of Schedule 4 of the Resource Management Act 1991; and**
- f) **includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.**

7. **Attached is an assessment of the proposed activity against the matters set out in Part 2 of the Resource Management Act 1991.**

8. **Attached is an assessment of the proposed activity against any relevant provisions of a document referred to in section 104(1)(b) of the Resource Management Act 1991, including the information required by clause 2(2) of Schedule 4 of that Act.**



Richard Shaw – Team Leader Consents and Approvals

Pursuant to authority delegated by the NZ Transport Agency

Date: 24 October 2019

Address for Service:

NZ Transport Agency
c/- WSP Opus
Private Bag 1913
DUNEDIN 9054

ATTENTION: Shane Roberts

Ph (03) 454 5029
Mobile 027 237 1168
Email shane.l.roberts@wsp.com

1. Introduction

The Transport Agency is a Crown entity with its objective, functions, powers and responsibilities set out in the Land Transport Management Act 2003 and the Government Roding Powers Act 1989. The Transport Agency is also a requiring authority under s.167(3) of the Resource Management Act (RMA).

Our purpose is creating transport solutions for a thriving New Zealand. The Transport Agency shapes New Zealand's transport networks and people's safe and efficient use of them. The Transport Agency connects families, help businesses take goods to market, and help others work, study and play.

An integrated approach to transport planning, funding and delivery is taken by the Transport Agency. This includes investment in public transport, walking and cycling, local roads and the construction and operation of State Highways. The Transport Agency exhibits a sense of social and environmental responsibility when undertaking this work.

Purpose and Scope of this AEE Report

This Assessment of Effects on the Environment (AEE) report and supporting documentation have been prepared in support of the Notice of Requirement (NoR) for the designation alteration and applications for resource consents which would authorise, under the Resource Management Act 1991 (RMA), the construction, operation and maintenance of the Project.

This AEE report includes a comprehensive and integrated assessment of environmental effects, which addresses all aspects relevant to the consideration and determination of the NoR and resource consent applications.

Structure of this Report

The documentation required for the NoR and resource consent applications is contained in two volumes:

- Volume A: Applications and AEE Report and Technical Appendices
- Volume B: Plans and Drawings.

This AEE report, in conjunction with plans and technical reports, has been prepared in support of the applications sought for the Project. It provides the following:

- Project background and reasons for the project
- A description of the existing environment
- An assessment of the alternatives that have been considered
- A description of the consultation and engagement undertaken through the development of the Project and the identification of persons affected by the Project
- A description of both the construction and operation of the Project
- An assessment of any actual or potential effects on the environment that may result through the construction, operation and maintenance of the Project (including proposed measures to mitigate adverse effects)
- Proposed conditions to be attached to the designation and consents
- An assessment of the statutory matters to be considered in respect of the Project.

2. Reasons for the Project

2.1 Project Objectives

The primary objective of the project is to achieve security of route for State Highway 8 (SH8), across the Clutha River Mata-Au at Beaumont. In addition to the primary project objective, the following key design influences have been identified:

1. Maintaining the highway function and standard in context with the adjacent state highway environment
2. Minimising social impact on the Beaumont community
3. Optimising environmental and heritage opportunities, where directly associated with the highway works
4. Ensuring the existing structure provides an attractive facility for ongoing use as a pedestrian and cycle linkage between the Clutha Gold Cycle Trail and wider Beaumont town services

2.2 Need for the Project

The bridge at Beaumont forms part of SH8 between the Clutha and Central Otago Districts. The route is the primary traffic and freight route between Dunedin and Queenstown; and while other and notably longer alternative routes are available for general traffic, this route is the only High Productivity Motor Vehicles (HPMV) capable route between the same centres.

The bridge is a single lane, five span, truss bridge; and more significantly in this context was opened in 1887 with wrought iron materials. Across the trusses there are clear signs of fatigue within the wrought iron, nominally associated with the age of the structure and the increase of live loads from its initial service to the present day. Although the structural integrity of the existing bridge does not translate to a public safety risk, the bridge condition is such that the Transport Agency is unable to retain confidence as to its long-term serviceability.

A Detailed Business Case to replace the bridge has been undertaken through which the problem and benefits were defined, and a preferred alignment option (incorporating a new structure) was established.

2.2.1 Problem

Broadly speaking, there are three key problems associated with the current bridge:

- Seismic capacity is considerably lower than today's standard for a structure on a State Highway route.
- Fatigue/corrosion reducing the remaining useful life of the structure for carrying traffic and heavy vehicles.
- Does not meet current standards for width and has no adequate pedestrian and cyclist provision.

Current condition of Beaumont Bridge

The current Beaumont Bridge is exhibiting a number of physical symptoms of deterioration, which requires constant ongoing management including the following:

- i) Strengthening repairs to the lower chord in the highest risk areas where existing cracks could lead to sudden deterioration without warning.
- ii) Annual maintenance of the timber deck includes stringer strengthening, replacement and tightening of running boards and deck boards and packing between stringers and deck boards to reduce vibration.

iii) Installing full scaffold to allow access for on-going inspection and testing.

iv) Setting up a testing and monitoring programme to track crack propagation and identify any new cracks.

Monitoring includes:

- Surface and edge notch cracks. Non-destructive testing is carried out on selected representative features. Testing includes a full sweep of higher stress and poorer quality areas looking for cracks not yet visible to the eye. The routine surveillance plan focusses on changes in the condition of selected features; such features being used as indicators of the overall rated deterioration.
- The western abutment, that has settled and cracked, is founded on gravels whereas the piers are all founded on rock.
- The wrought iron transoms that have been strengthened using a king post/tie rod system which provides a degree of pre-tension, reducing the stresses in the transoms. Maintenance includes replacement of the relatively lightly designed connections and ensuring the tie rods are in tension.

(v) Reducing the dynamic load on the structure by installing traffic lights. All vehicles are stopped prior to crossing the bridge. In addition there is a maximum 30kph posted speed limit for all heavy commercial vehicles. Some overweight vehicles are restricted to crawl speed.

2.2.2 Potential impacts of problem

As identified above, there are a number of issues associated with the current bridge. Should it become unusable for any reason the following are potential impacts that would be realised:

- When the bridge has been closed for maintenance this results in traffic impacts between Lawrence and Roxburgh with a diversion via Clydevale or Balclutha which increases this trip from 40 minutes to 1.5 hours or 2.25 hours, respectively.
- The only other crossing between these two bridges of the Clutha River is the Tuapeka Mouth Ferry which operates daily 8am till 10am and 4pm until 6pm, river level permitting and strict weight restrictions. These restrictions make this unreliable as a crossing point.
- Due to the condition of the Millers Flat Beaumont Road, which is a single car width for the majority of this 20km unsealed shared track, this is not an encouraged alternative route and therefore not discussed.

2.2.3 Proposed Solution

The Transport Agency has proposed a new bridge to improve the road safety, resilience and connectivity, travel time and capacity. The new bridge is proposed to be located immediately downstream of the existing bridge and is detailed in Section 5.

2.3 Need for the Designation

Part VIII of the RMA allows for requiring authorities to request land be designated in District Plans for projects and works for which the Requiring Authority has financial responsibility. The Transport Agency is a Requiring Authority and has financial responsibility for the designation and the works proposed.

The designation is considered both reasonably necessary and to be the preferred planning mechanism for the Project. Over the long term, a designation provides greater certainty and flexibility than a resource consent. This certainty is important as the Transport Agency is making a long-term commitment to this Project, which will result in some permanent land use changes. A resource consent would result in less certainty for the

Transport Agency and the community in terms of process and outcome, and there is less scope for minor changes to design detail once approved.

2.4 Benefits of the Project

The completion of the Project will assist in both regional and national economic growth and have a number of other key benefits, including those set out below. The Project will:

- Increase resilience and reliability of the state highway network.
- Provide improved connectivity and predictable travel between Dunedin and Central Otago.
- Improve safety to road users.
- Improve load and traffic capacity of the crossing.

3 Statutory Approvals Sought under the RMA

The RMA outlines a number of relevant considerations for the determination of NoR and applications for resource consent. In this section the key statutory matters under the RMA and their relevance to the Project are set out being:

- Notices of requirement for designations and outline plans (Part 8 RMA)
- Applications for resource consent (Part 6 RMA).

This section only seeks to set out the statutory matters. The assessment of the Project in relation to these matters is provided in Section 9 of this report.

3.3 Notice of Requirement

The Transport Agency has requiring authority status and is seeking to alter the designation for the Project as part of undertaking their legislative functions.

The prescribed form for a NoR is set out in Form 18 of the Resource Management (Forms, Fees, and Procedure) Regulations 2003. The NoR for the Project has been prepared in accordance with these regulations.

Section 176A provides that an outline plan must be submitted to a territorial authority before commencing construction of a project or work under a designation unless certain circumstances apply (which are not relevant to the Project). An outline plan will be lodged with Clutha District Council following the confirmation of the designation, and subsequent detailed design.

3.4 Resource Consents

Land Use consent is required from the Clutha District Council for the construction of a Road (outside of the area designated for State highway).

The regional consents required for the project under the Operative Regional Plan: Water for Otago and Regional Plan: Waste for Otago are set out below and discussed in detail in Section 9 of this report.

The extent of consents required from the Otago Regional Council include activities within or affecting the water or the beds and riparian margins of the Clutha River Mata-Au.

The Transport Agency is applying for resource consents for the following broad group of activities:

- Section 9 of the RMA: disturbance of contaminated land
- Section 13 of the RMA: erection of new structures and associated bed disturbance
- Section 14 of the RMA: diversions and temporary damming
- Section 15 of the RMA: discharges of sediment-laden water from construction.

Land use consent under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS) is also required from Clutha District Council.

Consent is also required from the Clutha District Council for local road construction and the trimming of scheduled trees.

Table 1: Resource consents required from Otago Regional Council / Permitted Activities

Consent Type	Activity	Regional Rule(s)	Activity Class	Scope of Application
Land use consent s9	Disturbance of land at a contaminated site.	5.6.1	Discretionary	Land disturbance associated with construction activity.
Land use consent s13	Erection of structures (temporary working platform(s), new bridge, the placement of rip rap (rock armouring), deposition of material, and the associated disturbance to the bed of the Clutha River.	RPW 13.2.1.1	Discretionary	Erection of new bridge structure. Abutment scour protection – rock rip rap Temporary culverts to access site Associated disturbance to the bed of Clutha River Mata-Au.
	Removal of vegetation in the bed, including associated disturbance of the beds.	13.2.1.1	Discretionary	Vegetation removal in the banks of the riverbed and associated disturbance to the bed.
	Use of structures and maintenance including associated disturbance.	13.3.1.1	Permitted	Use and maintenance of bridge once constructed.
	Removal of structure – temporary working platform.	13.4.1.1	Permitted	Removal of temporary working platform.
Water permit s14	Diversion of watercourses.	12.3.4.1(i)	Discretionary	Clutha River Mata-Au- temporary diversion to allow for construction works. Clutha River Mata-Au – permanent diversion from the bridge piers.
	Taking of ground water – dewatering (non-consumptive take).	12.2.2.2	Permitted	Site dewatering will not exceed 25,000L/day.

Consent Type	Activity	Regional Rule(s)	Activity Class	Scope of Application
Discharge permits	Discharge of contaminants to Air.	RPA 16.3.13.1.2	Permitted	The discharge of contaminants to air from road construction is a permitted activity – providing the discharge is not noxious, dangerous, offensive or objectionable at or beyond the boundary of the property.
	Discharge of stormwater from a road.	13.B.1.9	Permitted	

Table 2 - Resource Consents Required from Clutha District Council

Consent Type	Activity	District Rule(s)	Activity Class	Scope of Application
Land use consent s9	For the disturbance of contaminated land under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS)	N/A – subject to NES	Discretionary	Disturbance to land from earthworks
	Road construction	TRAN.1(1)(iii) / INF.2(iii)	Restricted Discretionary Discretionary	Upgrades to Dee Street, Westferry Street / Ronagahere Road intersection / turning head construction Westferry Street and Weardale Street.
	Hotel carpark construction	RST.4	Controlled	Extension of existing Beaumont Hotel Carpark.
	Modification of Heritage Item (trees)	HER.1(iv)	Discretionary	Trimming of trees potentially in excess of 'minor pruning'.

4 Existing Environment

4.1 Location

The existing Beaumont Bridge over the Clutha River Mata-Au is located on SH8 at the small Otago settlement of Beaumont, located between Lawrence and Raes Junction on SH8. The settlement of Beaumont straddles both sides of the Clutha Mata-Au River. Surrounding land use is a mixture of agriculture, rural residential and residential activity.

4.2 Existing Transport Network

The existing transport network in the vicinity of the site is as follows. From west to east, the SH8 enters the town after a left hand bend, with a 75km/h advisory speed, and with Westferry Street forming an intersection with the SH8 (on an acute angle) on the right hand side. From here the SH8 continues straight, passing through the Dee Street priority controlled intersection and over a small rise in front of the Beaumont Hotel. The highway then passes through the Rongahere Road intersection before reaching the existing single lane, traffic signal controlled, bridge over the Clutha River. Rongahere Road provides access along the true right bank of the Clutha River Mata-Au to Clydevale, though Westferry Street provides the most direct access from SH8 highway to Rongahere Road for traffic entering the town from the west. An informal gravel track at the northern end of Rongahere Road provides river access downstream of the existing bridge. Continuing east from the bridge, SH8 turns through a reverse curve signed with a 55km/h advisory speed and with intersections with Craig Flat Road, Weardale Street and Stonewall Street. Craig Flat Road provides access to a parking area adjacent the existing bridge with access to the Clutha Gold cycle trail. Weardale Street and Stonewall Street provide access to residential properties on the eastern side of the river, as well as community facilities such as the Beaumont Hall and Beaumont Cemetery. The Clutha Gold trail runs along Craig Flat Road, Weardale Street, Eastferry Street and across farmland before joining SH8 to the east of the town. SH8 passes over the Low Burn Bridge 200m east of Stonewall Street at the eastern end of the town.

Aside from the roads in the vicinity of the site, there is also limited use of the surface of the Clutha River Mata-Au for transport – mainly related to tourism and recreation.

4.3 Existing Pedestrian and Cycle Links

Beaumont township does not have any formed footpaths and any pedestrians in the area make use of existing roadside verges. The existing bridge features a very narrow pedestrian walkway on the downstream side of the bridge.

No specific walking and cycling infrastructure has been installed on SH8 by the NZ Transport Agency though it is noted that a manually operated push-button has been installed on the traffic signals to allow cyclists to access the bridge in advance of traffic.

The existing Clutha Gold Trail traverses the site. The trail crosses SH8 on the eastern approach to the existing Beaumont Bridge, and runs along the western side of SH8 to the intersection with Weardale Street. From here the Trail runs ‘on road’ along Weardale Street, turning left into Eastferry Street, across Stonewall Street and onto a short off road section starting at the Beaumont Hall, across the Low Burn watercourse and

finishing at Chinaman Flat Road, at which point the trail formation is located on the southern edge of SH8 and continues on in the direction of Lawrence.

4.4 Land Use/Surrounding Area

The zoning surrounding the site is 'Rural Settlement Resource Area' which then transitions to 'Rural Resource Area'. This is reflective of the underlying land use which consists of the small rural township of Beaumont, which is characterised by dispersed residential activity on larger allotments, and low levels of commercial activity including the Beaumont Hotel and other accommodation providers on Rongahere Road. Surrounding land use is dominated by agriculture.

4.4 Landscape

The broader landscape context of the Project is that of the broad river valley of the Clutha Mata-au River where the river flows out of the relatively short Island Block-Beaumont Gorge, through the local Beaumont Flats and south into the Beaumont-Tuapeka Mouth Gorge area. In general, the landscape is characterised by river flats and terraces and undulating to steep hill country, representative of an underlying geology of blocky to weathered schist. Landforms within the area include flat to undulating terraces and the river channel itself. The local topography is contained by hill country on all sides.

4.6 Geology and Geohydrology

The geological map of the local area (NZ 1: 250,000 scale Geological Map) indicates that the site is located within a valley plain identified as having been deposited in the late quaternary. These deposits typically consist of unconsolidated to poorly consolidated mud, sand, gravel and peat of alluvial and colluvial origin. The wider area, including the adjacent hills comprise Caples Group Grade TZIII schist rock. The schist rock is identified to be heavily foliated. Geological records indicate that the schist typically has a strong foliation dip towards the south and east at about 30 to 40 degrees.

The New Zealand Geology Web Map by GNS Science indicates the bridge site is underlain by late Pleistocene River Deposits (Unit Q). This unit generally comprises middle Pleistocene (units Q4 – Q12) and late Pleistocene (units Q2 – Q3) deposits consisting of sand, clay, silt and gravel.

Groundwater monitoring records are not available within the local area. However, vegetation observed during the site walkover indicates that shallow groundwater conditions (poor draining soils) overlying the bedrock should be anticipated on both the east and west banks of the Clutha River Mata-Au. It is considered likely that a deeper groundwater table exists that may be in continuity with the river levels. Seasonal groundwater fluctuations can be expected to be in the order of 1m to 2m and may be influenced strongly by the Clutha River Mata Au flows.

The geological map indicates the active Tuapeka Fault to be present approximately 100m south of the existing bridge alignment. The Fault is recorded as a normal fault and generally trends in the south-east / north-west direction. The recurrence interval and the estimate magnitude of displacements of this fault are currently unknown.

4.7 Ecology

4.7.1 Freshwater

The Clutha River Mata Au downstream of Roxburgh Dam is affected by daily flow fluctuations resulting from power generation at the Roxburgh Power Station. This creates a “varial zone”, an area of the riverbed that is intermittently wetted and dried, which reduces the suitability of this area for aquatic life. In terms of the project site, the ‘varial area’ is most noticeable on the western bank of the river, downstream of the existing bridge.

Five species of fish have been recorded as being present in the mainstem of the Clutha River Mata Au in the immediate vicinity of the proposed works: longfin eel (*Anguilla dieffenbachii*), torrentfish (*Cheimarrichthys fosteri*), common smelt (*Retropinna retropinna*), quinnat salmon (*Onchorhynchus tshawytscha*) and brown trout (*Salmo trutta*) (New Zealand Freshwater Fish Database, downloaded 12 April 2019). In addition, several other species are expected to reside in or pass through this area including lamprey (*Geotria australis*), shortfin eel (*Anguilla australis*), common bully (*Gobiomorphus cotidianus*), upland bully (*Gobiomorphus breviceps*), kōaro (*Galaxias brevipinnis*) and rainbow trout (*Onchorhynchus mykiss*).

Whilst no macroinvertebrate sampling has been undertaken at the site, sampling has previously been undertaken nearby at Beaumont (1 km upstream of the site of the proposed new bridge), Rongahere Road (11 km downstream) and Bernards Beach (22 km downstream) and are relevant to the proposed works. Macroinvertebrate fauna at Beaumont and Rongahere Road (near Birch Island) is dominated by nymphs of the common mayfly *Deleatidium*, while chironomid larvae (*Orthoclaadiinae* and *Tanytarsini*) and the cased-caddis *Pycnocentroides* were also abundant at the Beaumont site. The composition of the macroinvertebrate fauna at Bernards Beach is slightly different in that it was numerically dominated by chironomid larvae (*Orthoclaadiinae* and *Tanytarsini*), the common mudsnail *Potamopyrgus antipodarum* and the cased-caddis *Pycnocentroides*, with *Deleatidium* mayfly nymphs being less abundant at this site. So whilst it could be expected similar species will be found at the site, the presence of the ‘varial area’ as identified above can result in low densities of macroinvertebrates as the frequent wetting and drying compromises habitat suitability.

4.7.2 Terrestrial

Flora

Generally speaking the areas to be disturbed by the project are either existing pasture, roadside verges and riparian areas adjacent to the river. The Ryder report assessed the project footprint and identified eighty plant species (16 native, 64 exotic) within the footprint. The flora within the footprint was typical of pasture, road-side and disturbed riparian vegetation, being dominated by exotic grasses and herbs with a scattering of mainly introduced trees and shrubs. Native plants comprised <1% of the total cover. No nationally, or regionally, threatened or at-risk plant species were detected.

Fauna

Avifauna recorded were primarily exotic species, and included mallard duck, blackbird, hedge sparrow, thrush, starling, magpie, spur-wing plover and chaffinch. Native species present over the areas affected by the proposed realignment were bellbird, Australasian harrier and grey warbler.

Lizard species may occur within the footprint given the presence of suitable habitat along the edges of pasture and existing roads. All lizard species are protected under the Wildlife Act (1953), administered by the Department of Conservation.

4.8 Water Quality

The National River Water Quality Network (NRWQN) includes two sites in the Clutha River Mata Au downstream of Lake Roxburgh: Clutha River at Millers Flat and Clutha River at Balclutha. Water quality at the Millers Flat site is generally good, with relatively low water temperatures, high levels of dissolved oxygen, low levels of nutrients and generally low levels of E. coli present. However, water clarity at this site is generally low (average 2 m, maximum 5.95 m), and, conversely, turbidity is generally quite high. Water quality at the Millers Flat site complies with all corresponding RWP Schedule 15 limits when applied as a 5-year 80th percentiles. The values for many of the water quality variables at the Clutha River at Balclutha are similar to those at Millers Flat, although nutrient concentrations (particularly nitrate-nitrite nitrogen and total nitrogen) and average E. coli concentrations are markedly higher at Balclutha than at Millers Flat (Table 2). Water quality at the Balclutha site complies with all corresponding RWP Schedule 15 limits when applied as a 5-year 80th percentiles, with the exception of nitrate-nitrite nitrogen, which exceeds the RWP Schedule 15 limit of 0.075 mg/L.

Of the two sites, water quality measured at the Millers Flat site is likely to be most representative of the water quality in the reach affected by the construction of the bridge at Beaumont, as the Millers Flat site is 22 km upstream of Beaumont and no major tributaries or discharges that are expected to have an appreciable effect on water quality in the Clutha/Mata-Au enter it between these two locations.

4.9 Archaeology and Heritage

Adjacent to the site are a number of registered significant trees. These are trees the Clutha District Plan define as ‘trees of historic or botanical significance or trees that are of landmark significance or contribute significantly to scenic and/or amenity values of a location the trees’. The variety of significant trees present are English Oak, Irish strawberry, English Elm and Ash (Raxinus), none of which are indigenous to New Zealand.

The existing Beaumont Bridge is also identified in the Clutha District Plan as an item of historic significance.

Table 3: Items of Historic Significance

Identifier	Name and Address	Reason for Registration
H61	Beaumont Bridge, Clutha River, Beaumont	Historic Structure
H80C	English Oak, Weardale Street, Beaumont	Significant tree/significant group of trees - scenic and landmark significance
H80D	English Oak, Weardale Street, Beaumont	Significant tree/significant group of trees - scenic and landmark significance
H80E	English Oak, Weardale Street, Beaumont	Significant tree/significant group of trees - scenic and landmark significance
H80F	English Oak, Weardale Street, Beaumont	Significant tree/significant group of trees - scenic and landmark significance
H80G	Ash (Fraxinus), Weardale Street, Beaumont	Significant tree/significant group of trees - scenic and landmark significance
H80I	Irish Strawberry, Weardale Street, Beaumont	Significant tree/significant group of trees - scenic and landmark significance

An archaeological assessment of the site has also been undertaken and is Attached in Appendix 5. The assessment has identified a number of areas within the project site that will require archaeological monitoring during construction being:

- Beaumont Hotel site
- A small area opposite the Beaumont Hotel
- Eastern and western banks of the Clutha River Mata-Au
- Existing Beaumont Bridge
- Adjacent to the Lowburn Bridge.

These sites are visually illustrated in Figures 32 and 33 of the Archaeological Assessment.

4.10 Cultural Values

The Clutha River Mata-au is a statutory acknowledgement under the Ngāi Tahu Claims Settlement Act 1998. The Mata-au was part of a mahinga kai trail that led inland and was used by Ōtākou hapū including Ngāti Kurī, Ngāti Ruahikihiki, Ngāti Huirapa and Ngāi Tuahuriri.

The river was also very important in the transportation of pounamu from inland areas down to settlements on the coast, from where it was traded north and south.

There are known archaeological sites in the wider vicinity of the settlement of Beaumont, which is a reflection of discovery related to the historic activity described above. No archaeological sites have been located in close proximity to the proposed works; however, as the banks of the river are considered a higher risk site in terms of potential discovery.

There is a nohoanga – Te Kowhai – located approximately 1 kilometre upstream of the existing Beaumont Bridge, on the true left bank.

Consultation with Aukaha and Te Ao Marama has highlighted the impacts of the project on these locations of interest as being of importance. Ngā Rūnanga have also highlighted that sediment control and effects on water quality and quantity are of importance. They also seek an archaeological authority is sought and an associated accidental discovery protocol is adopted.

4.11 Social and Community

The Beaumont Township provides a mix of community facilities, small commercial services and recreational areas including:

- Immediately downstream of the existing bridge, is a rest area and launch spot for boats into the river. The author has observed multiple vehicles and boat trailers parked there at times, and this has also been confirmed in discussion with locals. An existing picnic table at the site also attests to its use as a rest area. The area is also used for access to the river by anglers. It is noted that the formed access to this site crosses private land and is not protected by easement.
- On the eastern bank of the existing bridge is a small informal carparking area, as well as some information panels and a plaque commemorating the opening of the Beaumont Bridge.

- The Beaumont Hall (which includes a small museum) is located on Eastferry Street
- The Beaumont Cemetery is located at the end of the formed section of Weardale Street
- Beaumont Swimming Pool (owned by a Charitable Trust)
- The Beaumont Hotel and associated camp ground/accommodation is located on SH8 on the western side of the river
- Small scale visitor accommodation providers are known to be located on Rongahere Road.
- Other former community facilities remain but are in private ownership (Beaumont School) or are no longer remaining (Beaumont Racecourse).

4.12 Utilities

There are no Clutha District Council 3 Waters reticulation in the project area. Existing services within the project area include:

- Buried communication cables (copper), operated by Chorus
- 11kV and 400V overhead power lines, operated by PowerNet
- Private water and sewer supplies serving individual private properties (not affected by the project works)
- A historic water supply network (original purpose related to the former Beaumont Railway Station) from a gully northeast of the bridge site and feeding an unknown number of properties understood to include 12 Weardale Street, the old store and water troughs on the Mitchell property.
- A communal skip for refuse collection is located on Dee Street on the north side of SH8. This is available for use by local Beaumont residents.

5 Project Description

5.1 Overview

The project seeks to construct a new bridge over the Clutha River Mata-Au at Beaumont. This will require construction of new bridge approaches, improvement to the local road networks, physical road closures and access changes. It will also require the relocation of power and communication infrastructure.

5.2 Alignment and Elevation

The alignment for the new bridge and approaches is shown below. The alignment is based on highway geometric requirements and founding considerations with a central bridge pier positioned on a prominent rock outcrop within the main river channel.

It is noted that the elevation of the new alignment will differ from that which currently exists at the site. Approaching from the east, the highway will begin to gently rise from Stonewall Street / SH8 intersection. At the corner of Weardale Street the alignment will be approximately 2.5 metres above existing ground level, and at Rongahere Road approximately 3.7 metres above existing ground level. Adjacent the Beaumont Hotel, the highway surface will be at a level consistent with the existing SH8 pavement surface. This rise in elevation from east to west is a function of the existing topography at the site, improved vertical geometry for the highway, as well as the style of construction of the proposed bridge and the need to provide for freeboard during flood events.

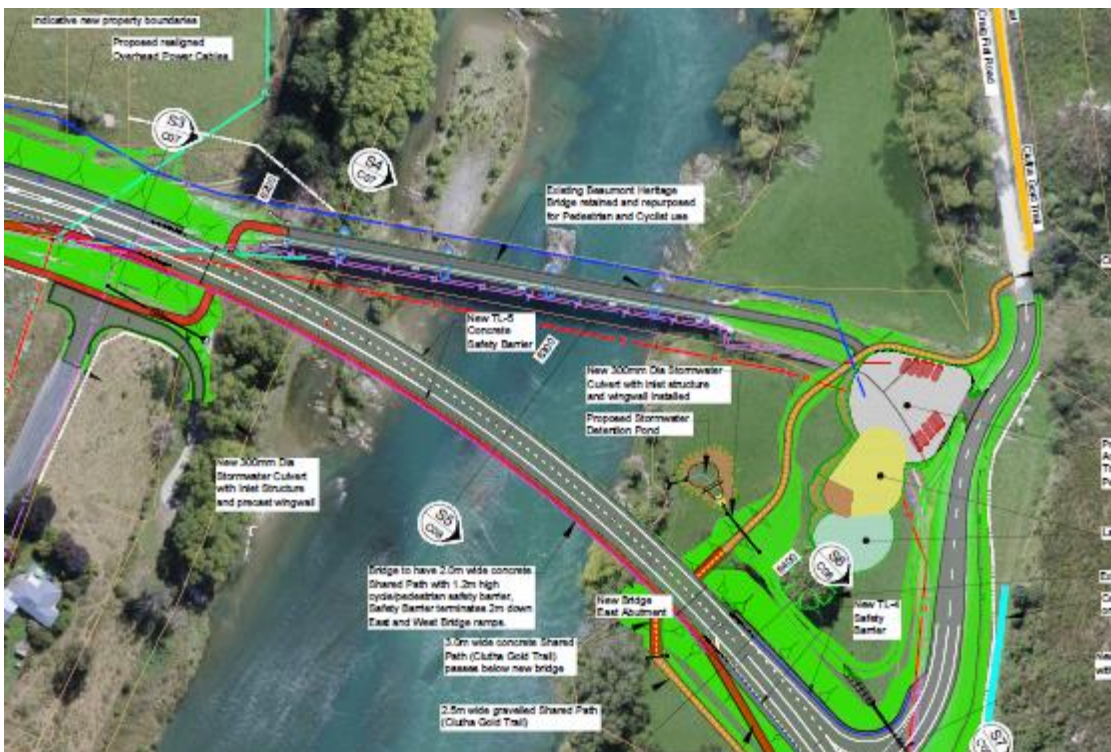


Figure 1: Proposed New Beaumont Bridge and Approaches

5.3 Intersections and Property Access

As part of the project, the existing state highway intersections with Westferry Street, Rongahere Road and Weardale Street are proposed to be closed due to road safety considerations as outlined below.

Rongahere Road intersects the proposed SH8 alignment in close proximity to the proposed bridge location. The concrete barriers on the new bridge severely restrict sight distance to the east for vehicles turning out of Rongahere Road. This is a significant road safety concern and therefore this intersection will be closed. Additionally the difference in elevation between Rongahere Road and the new SH8 alignment (~3.8m) means that considerable works would be required to upgrade the intersection to maintain connectivity.

With the Rongahere Road intersection closed, traffic previously using this intersection will be required to travel by Dee Street or Westferry Street. Of the two remaining intersections where vehicles turn on and off SH8, Dee Street provides for increased opportunity for improvement than Westferry Street, particularly due to the acute angle of the Westferry Street / SH8 intersection. It is therefore proposed to also close the Westferry Street intersection with SH8, and upgrade Dee Street (seal the carriageway and provide a suitable intersection treatment with SH8) which will provide the safest option for traffic accessing SH8. Some minor intersection improvements will also be undertaken at the intersections of Westferry Street / Dee Street and Westferry Street/Rongahere Road to promote the Dee Street linkage as the primary route south.

Options for retaining the Weardale Street intersection with SH8 have been investigated, with the outcome of it not being possible to achieve the recommended Safe Intersection Sight Distance to the west of the intersection due to existing vegetation and the proposed bridge barrier/approach barrier. Given that an alternative route via Stonewall Street is readily available it is proposed to close the Weardale Street Intersection on road safety grounds.

All closed intersections will be configured with turning heads.

Access arrangements to the Beaumont Hotel and associated camping ground have been reconfigured to address road safety considerations with a new access road proposed to link the Hotel car park to Dee Street and a single entry only access to the Hotel and camping ground from the SH8, along with improvements to the Hotel carpark.

5.4 Road Cross Sections

The typical cross sections of the proposed highway bridge approaches and modified side roads are detailed in figures below.

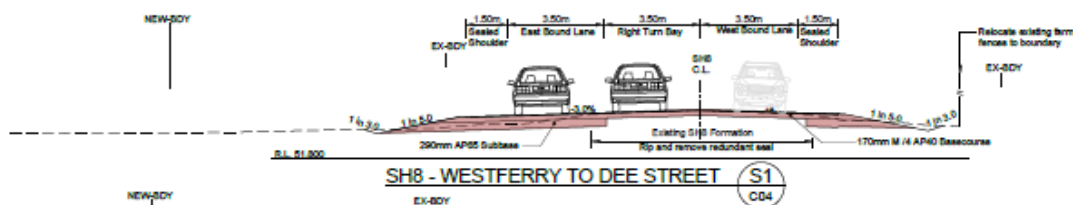


Figure 2: Cross Section - Westferry Street to Dee Street

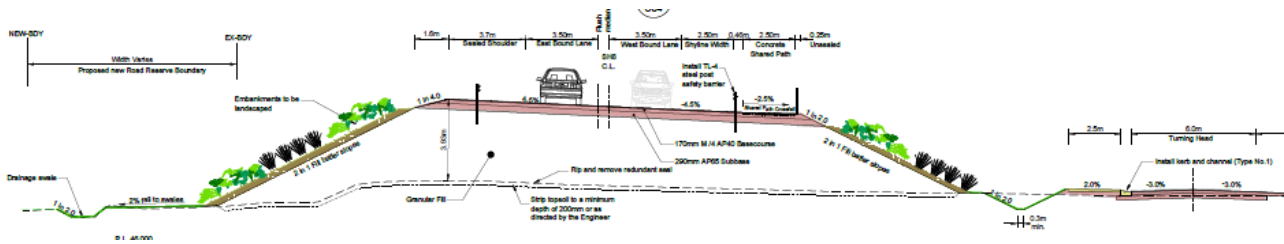


Figure 3: Cross Section - Rongahere Rd / SH8 Intersection

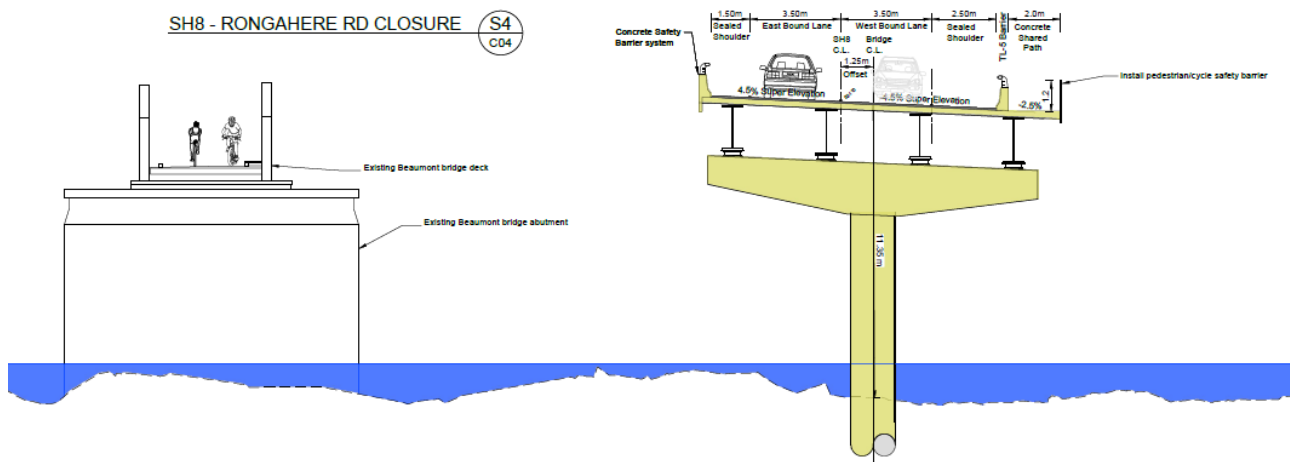


Figure 4: Bridge Cross Section showing existing and new bridges

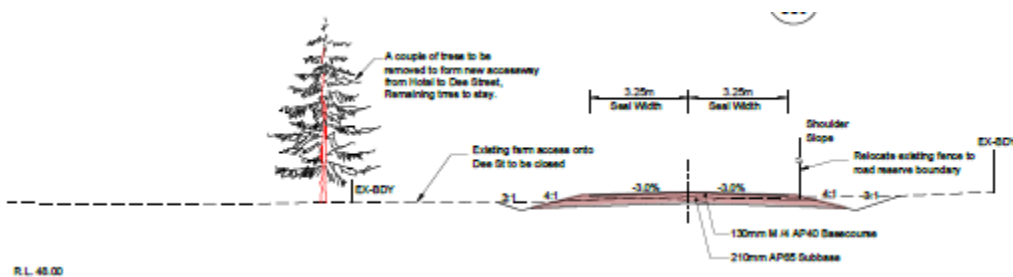


Figure 5: Cross Section - Dee Street

5.5 Bridge Construction

The proposed new bridge has been designed in accordance with the NZTA bridge and highway design standards, in particular the NZTA Bridge Manual requirements.

Design has progressed on the basis of a 193m long curved bridge, with span lengths of 32m-40m-40m-45m-36m (west to east) to enable founding on prominent rock outcrops within the river channel and river banks, provide adequate flood conveyance, and to facilitate routing of the Clutha Gold cycle trail below the eastern and western abutment.

The structural form of the bridge is a continuous steel multi girder superstructure, with composite concrete deck, founded on reinforced concrete hammerhead piers (i.e. single pile). This provides a cost effective and functional solution for the site constraints.

The likely methodology for the construction of the bridge will comprise of the following:

- A partial work platform may be constructed from both (or one) banks of the river. **Figure 6** illustrates what a staging work platform looks like.
- The partial work platform will require temporary piles that support a trestle type structure that the contractor can work from.
- The platform will be located on one side (likely downstream) of the new bridge so that it can be used for access to piling and pier construction, as well as lifting in the beams once the bridge substructure is complete. Gravel work platforms (causeways) located at ground level (constructed on top of the existing river bed) may also be used for access to pier locations where practical instead of, or to supplement, any temporary staging.
- Construction of bridge pier foundations will require excavation of bedrock up to 10m below ground level to form cylindrical piles, one at each pier location. Reinforcing steel will be placed into the pile excavation and backfilled with concrete to form the foundation which will be extended above ground level to form the bridge pier.
- Prefabricated steel beams will be transported to the site and installed by crane lifting from either the platform or causeway, as appropriate.



Figure 6: Photograph of temporary platforms - Kawarau Bridge

In the event of high flow events if any temporary gravel causeway was overtopped and washed away (or partially washed away) this would require the causeway to be reformed. The work could be undertaken throughout the construction period as required. All work would be in accordance with the contractor’s Erosion, Sediment and Dust Control Plan (ESDCP). On completion of the bridge construction, all temporary causeways will be disestablished, and the riverbed reinstated.

As part of constructing concrete piles for piers once the pile is driven, reinforcing will be placed inside the casing and the casing will be filled with concrete (by piping concrete under water down to the base of the pile – known as the tremie method) – shown in **Figure 7** below. It may be near impossible to pump out water from the piles during this process meaning that as concrete is placed it will displace the water. In these cases, the contractor will allow the displaced water to spill out of the casing onto adjacent areas where it will be captured and prevented from being discharged to the river. In cases where the liquid has high sediment levels, normally the last 1-2m of water above the wet concrete, the liquid will be collected and removed from the pile casing.



Figure 7: Example of Pile setup

Bridge Foundations

Bridge piers have been positioned to meet the geometric requirements for the new SH8 alignment and optimise founding on prominent rock outcrops within the river channel. Foundation options were considered in detail with the preferred solution identified comprising single cylinder foundations for each pier socketed into the bed rock. Founding depth for bridge piles is influenced by rock mechanics of the upper weathered schist in conjunction with the geometry of the rock at the central outcrop.

Scour Protection

Scour protection for the proposed SH8 Beaumont Bridge has been designed in the form of a rock revetment. Scour protection for the piers has not been designed as the piles will be founded sufficiently deep into rock to structurally survive scour to the surrounding rock material.

Geotextile fabric is required to prevent fill material from passing through the rock revetment. This geotextile will be installed to wrap around the toe of the rock revetment and extend to the crest of the rock revetment. A granular geotextile protection layer is proposed to protect the geotextile from damage, particularly during the construction phase.

The rock revetment will wrap around the full abutment in line with the abutment face to minimise risk of undermining. The bridge embankments will have batter slopes of 2:1 (horizontal: vertical), however the south corner of the eastern abutment may require a steeper batter slope of 1.5:1. The toe of the rock revetment will be positioned to mitigate against significant risk of undermining by scour. This would typically be achieved by locating the toe of the rock revetment beneath the scour depth, or by including a launching pad in the rock revetment so that natural scour processes shift the rock material down to the scour depth. However these approaches are not suitable for this location and therefore the toe of the rock revetment is keyed into existing natural rock outcrop capable of withstanding the scour. Drawings of the proposed revetment are included in Appendix 5.

5.6 Pedestrian and Cycle Ways

Pedestrian and cycleway facilities include:

- 2.5m wide unsealed shared path matching the existing Clutha Gold Trail on the eastern side of the river, with the exception of the section under the new bridge which will be concreted for maintenance reasons.
- A 2.5m wide concrete shared path on the western bank of the river and providing a new linkage between the existing bridge and the Beaumont Hotel and camping ground.
- Repurposing of the existing Beaumont Bridge for pedestrian and cycle use (refer Section 6.7.7).
- The new bridge will also provide for cyclists and pedestrians in the form of a 2 metre wide shared path located on the downstream side of the bridge. This will be separated from the traffic lanes by a concrete barrier.

Unsealed shared paths will incorporate a maximum grade of 1 in 14 and minimum 15m sight lines.

A minimum headroom of 2.5m will be provided where the track passes below bridge abutments.

A number of options have been considered for routing of the pedestrian and cycle path at the confluence of the proposed and existing bridges on the western bank of the Clutha River Mata-Au. The new bridge is positioned immediately downstream of the current bridge with the new road level elevated around 2.7m above

existing. It is proposed to utilise the existing bridge for pedestrian and cyclist use and construct an off-road path linking the existing bridge to Rongahere Road, the Beaumont Hotel and western approach of SH8.

5.7 Safe Stopping Area

A safe stopping area (previously known as a rest area) will be established on the eastern bank of the river, immediately downstream of the existing bridge. This will replace the existing informal area at the current intersection of Craig Flat Road and SH8. In addition to a parking area, some landscaping is proposed, and it will also feature the current prominent walnut tree on the site.

5.8 Lighting

Lighting will be limited to flag lighting at the SH8 / Dee Street intersection, SH8 / Stonewall Street intersection. Both these intersections currently have single flag lights mounted on overhead power poles. No flag lighting is proposed at the SH8 / Craig Flat Road intersection given the extremely low traffic volumes.

There is existing flag lighting at the SH8 / Rongahere Road intersection and SH8 / Weardale Street intersection which will be removed as these intersections are closed as part of the project. Flag lighting of the hotel and campground entrance will also be provided. The lighting will be designed to comply with AS/NZS 1158 and NZTA M30 Specification and Guidelines for Road Lighting Design.

Flag lighting will be mounted on power poles where practical or on standalone lighting columns.

5.9 Earthworks

The excavation of land for the construction of the eastern and western approaches, and local road improvements will require topsoil stripping, bulk fill for the embankments and excavation, including some excavation of contaminated land. Approximately 50,000m³ of cut and fill is required – made up of approximately 15,000m³ of cut and 35,000m³ of fill.

Construction material will be transported to construction areas within the project area and stockpiled for use.

The earthworks required falls into the following four broad categories:

- Stripping of topsoil and unsuitable surface material
- Excavation and removal of any unsuitable material
- Construction of road embankments
- Ground improvements required for the construction of road embankments

5.10 Site Dewatering

In order to construct any manholes / sump chambers and stormwater pipelines associated with the new highway alignment, some minor dewatering may be required. This will be undertaken in accordance with industry best practice.

5.11 Stormwater Management

The stormwater design will be completed in accordance with the NZTA Stormwater Treatment Standard for State Highway Infrastructure and will incorporate a mixture of grassed roadside swales, piped conveyance and a landscaped detention basin on the eastern approach.

Roadside swales will be sized to convey a 1% AEP rainfall event without flooding the road pavement (surfacing, basecourse and subbase). Associated pipework will be designed to convey a 5% AEP storm without surcharging where flood storage or suitable overland flow paths are available for more significant rainfall events. Where this is not the case, the pipework shall also be designed to convey a 1% AEP event.

Very low intensity rainfall events of low rainfall depth will most likely infiltrate to ground through the swales topsoil lining during warmer periods when the catchments soils are drier. During higher intensity / depth summer events and during cooler periods infiltration may not be sufficient to deal with runoff from the road corridor. In these cases flow will result in water being stored above the lining of swales until infiltration or evaporation.

The proposed detention basin is intended to provide treatment of stormwater from the new bridge prior to discharge into the Clutha River (i.e. flow attenuation is not the primary objective). The landscaped detention basin will be planted with native grasses and other occasional native specimen plantings and will be constructed at particularly flat grades to ensure very low flow velocities. The basin will incorporate an amount of depression storage due to small undulations in the bed and an element of infiltration will occur during summer months when the soils are drier. The outlet of the basin will be restricted via a small diameter orifice pipe to ensure full capture of the Water Quality (WQ) event (15mm rainfall over the catchment) and its slow release. During low frequency events, the basin will either be bypassed or overtopped, with any overland flow routes being channel away from the neighbouring property and where possible away or under the proposed Cycle Trail. The plant species used will be both wet and dry tolerant to ensure minimal die off. The combination of grassed swales and the landscaped detention basin will ensure a very high standard of stormwater treatment is achieved. Given that the stormwater system will only discharge to the Clutha River occasionally, and the river has a high constant baseflow, the effect of the discharges on the quality of water in the river will be less than minor.

Stormwater from the project will be dealt with in the following manner:

Eastern Catchments

- On the new bridge: Stormwater will be conveyed along the face of the downstream barrier to the eastern abutment. From here the stormwater will be piped to a planted detention basin located to the north of the approach embankment. The detention basin will be designed to encourage infiltration and will incorporate a high level overflow to the Clutha River for larger events. .
- SH8: Grassed swales will be constructed to provide infiltration and overland conveyance towards the proposed detention basin and the Low Burn watercourse to suit topography. Culverts will be provided across side roads and property entrances. .
- Weardale Street: It is expected that there is some current discharge from the northern end of Weardale Street into the ditch that runs along the northern side of the Healey property. Provision will be made to convey any existing flows into the proposed detention basin or to retain the existing ditch if this is not practical.
- Stonewall Street: No modifications other than at the intersection are proposed. .
- Cycle Trail: The proposed cycle trail will be designed to shed water to adjacent land with minor shaping to avoid ponding of surface water causing serviceability issues. Culverts across the cycleway will be installed at low points to accommodate flow paths.

Western Catchments

- SH8: Construction of grassed swales within the roadside verge to capture carriageway runoff from the widened SH8 carriageway. Existing culverts passing under Rongahere Road and property entrances will

be retained or replaced if required. The use of soakage pits will be considered to encourage infiltration or where outfalls to adjacent watercourses are not possible. The stormwater solution will aim to capture the majority of carriageway runoff from the bridge approach to minimise conveyance of stormwater across the expansion joint at the western abutment. It is expected that an overland discharge path will need to be formed via a planted strip from the western abutment to the Clutha River.

- Dee Street: Construction of grassed swales within the roadside verge to capture carriageway runoff from the sealed and widened carriageway. Existing culverts below property entrances will be retained or replaced if required. The use of soakage pits will be considered to encourage infiltration depending on soil conditions encountered.
- Rongahere Road and Westferry Street: potential for the construction of grass swales.

5.12 Watercourses

The Clutha River Mata-Au is the dominant watercourse at the site. The river is a large single stem which passes through a comparatively narrow rocky section at the site. Flows at the site are affected on a daily basis through the impacts of the Roxburgh Dam which influences the flow of water dependant on the amount of water being used to generate electricity.

In addition to the Clutha River Mata-Au, at the eastern end of the site is the Low Burn, a small creek with a single channel and low banks, draining the farmland and hill slopes to the north east of Beaumont. The Low Burn is a tributary of the Clutha River Mata-Au. Running alongside the northern boundary of the Healey property is a drainage ditch that currently catches road and other run-off before discharging to the Clutha River Mata-Au.

5.13 Construction Works and Programme

Temporary construction management areas will be located within the boundaries of the designation to avoid or minimise effects on the function of existing roads and adjoining land use activities during construction. These areas are likely to contain items and facilities such as:

- site offices, staff facilities and parking
- plant, machinery and mobile fuel storage facilities
- construction materials and stockpiles
- site access and egress points.

The current programme assumes a 2-year construction period. Works will generally occur during daylight hours six days a week.

The contractor will be required operate in accordance with Transport Agency safety protocols, develop and implement a Construction Environmental Management Plan (CEMP) and comply with designation and resource consent conditions. The proposed conditions are in Appendix 4.

The Transport Agency will have oversight of construction works via a consultant Engineers Representative and Engineer to Contract. Regular visits will be undertaken by the Engineers Representative.

6 Consideration of Alternatives

As part of the detailed business case for the new bridge, two alignments (Ribbons A and B as shown below in **Figure 8**) were investigated and consulted on with the community. Ribbon A is a curved route to the immediate south of the existing bridge. Ribbon B (in a general sense) would follow the alignment of Eastferry / Westferry streets. A clear preference from the community was for an alignment on the north side of the Beaumont township as opposed to the ‘straight line’ option (for further detail refer to Section 7). It is also noted the Ribbon B would require a much longer SH8 realignment and impact considerably more properties than Ribbon A.

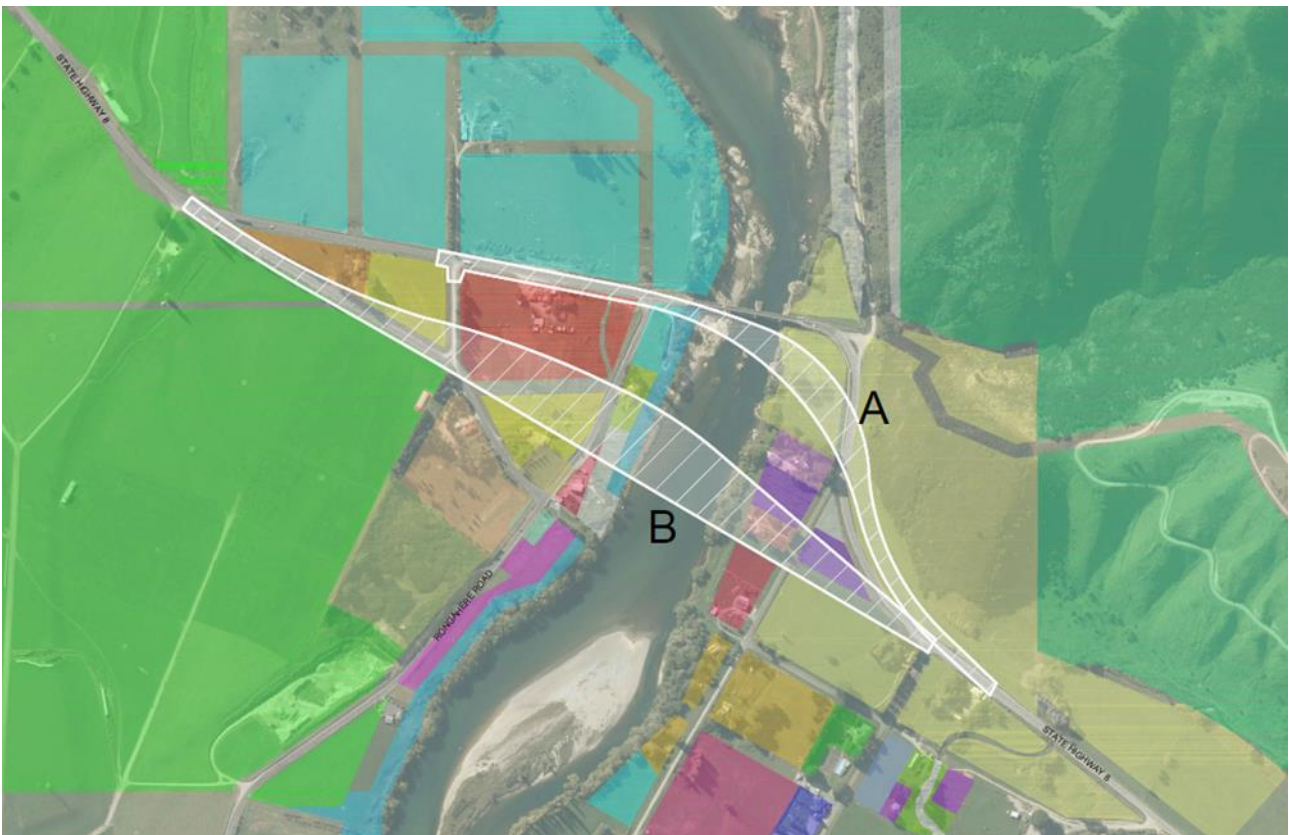


Figure 8: Business Case Option

Existing Bridge

One of the other options explored was the use of the current bridge alignment. This was discounted for 2 reasons (1) would necessitate the demolition of the current historic bridge structure and (2) would result in the closure of the river crossing for the duration of construction.

Do Nothing

Given the condition of the existing bridge, the do-nothing option was not a consideration.

Discharge Alternatives

Section 105 of the RMA requires that consideration be given to the applicant's reason for the proposed choice and any possible alternative methods of discharge, including discharge into any other receiving environment.

In developing the stormwater treatment and disposal options, consideration was given to: avoiding where possible sensitive environments; the physical limitations of the site; discharging to ground in preference to surface water; and the level of treatment. In doing so, all alternative methods and locations were assessed for their suitability.

Summary

The current proposal is the Transport Agency's preferred solution for achieving the objectives for the Project. Significant investigations were carried out prior to determining the proposed solution. The proposal is based on the outcome of an evaluation of the engineering, economic and environmental aspects of the alternatives considered along with feedback from consultation.

7 Consultation

7.1 Business Case Stage

Two option ribbons were used for consultation purposes with property owners and the Beaumont community to gain an understanding of potential issues, and preferences. The ribbons were first sent to property owners who would potentially be affected by the works, in addition to an information letter and feedback form.

An open day was held on 15th December 2016 at the Beaumont Community Hall. This provided the project team with an opportunity to discuss the potential options with the property owners as well as the Beaumont community. Representatives from the local and regional councils were also in attendance to discuss ideas.

Feedback from the potentially affected property owners and the community was collated and reviewed by the team before progressing the business case.

7.2 Design stage

Clutha District Council (CDC)

- Consultation carried out on 24 August 2018.
- Future proofing opportunities were discussed regarding whether the Council want to run any services over the bridge.
- Consideration given to what the end of Rongahere Road and Westferry Street would look like (cul de sac head v hammerhead).
- Regarding Westferry Street CDC suggest leaving it as it (do not rip up formed portion).
- CDC requested a detailed design for Westferry/Rongahere intersection be provided, including swept paths of vehicles. CDC prefer a painted median option at the intersection.
- CDC indicated a soakhole might need land at Westferry/Dee Street intersection.

Otago Regional Council

A preapplication meeting was held on 1 February 2019. The main issues brought up by Council departments are listed below.

Hazards:

- Need to address morphology of bed and upstream/downstream flooding, cumulative impacts of both bridges.

Engineering:

- Walkway under bridge (no rails to catch debris)
- The new bridges ability to withstand flood events during construction and during implementation, the temporary platforms ability to withstand floods and the contractor needing to remove during high flow.
- The structural integrity of the old bridge

Consenting:

- An AEE appropriate to scale of activity, including but not limited to the following

- Cumulative effect of having both bridges
- Site Management plan with high level restrictions for the contractor
- Visual, recreational and amenity effects
- Instream effects, the applicant was concerned about the time work will not be undertaken during spawning, this will need to be taken up with affected parties and covered off with reasoning in application
- Sediment, the applicant was concerned about sediment during natural flows affecting consent condition, however these will be specific to the works
- Storm water → permitted
- Moving power cable → permitted
- Noise

Powernet

Consultation carried out on 24 August 2018 in Balclutha. General points of discussion included:

- Powernet preferred the overhead option for lines.
- Ducting not an issue for the proposal.
- Could thrustbore under road to supply lights at the bridge.
- A 'corridor' for power is required. Powernet would be able to do install most of it.

Aukaha (Otago Rūnanga)

- No concerns regarding geotechnical investigations, apart from requesting the use of clean locally sourced materials.
- Aukaha expressed interest in accompanying the project archaeologist on any site walkover.
- Aukaha noted there are features of cultural significance in the area, and therefore they require the design and the construction methodology are sensitive to these.
- Aukaha would like the impact of the project on the Mata-au (which is a Statutory Acknowledgement Area under the Ngāi Tahu Claims Settlement Act 1998) to be considered.
- Management and mitigation measures to be implemented to contain sediment run off during construction works, and reduce adverse effects on any adjoining waterways.
- Ngā Rūnanga would request that the following be a condition of the resource consent: An Archaeological Authority is sought from Heritage New Zealand and an associated accidental discovery protocol is adopted.

Te Ao Marama Incorporated (TAMI)

Te Ao Marama points of discussion included:

- Approval of clean locally sourced material being sought for the works.
- General interest in the archaeological risk, interested in accompanying the project archaeologist on any site walkover.

Otago Fish and Game

Main points of discussion included:

- Raised some concerns particularly around the impacts of fish spawning from sediment discharge and request the risk of sedimentation that could affect spawning will be adequately mitigated.

Clutha Gold Trail Trust

Consultation was carried out with Clutha Gold Trail Trust on 25 February 2019. Clutha Gold Trust main points of discussion included:

- The Trust will take no responsibility for any shared path that is formed on the old bridge or the western side of the Clutha Mata-Au.
- The Trust is happy with the Trail realignment on the eastern bank of the Clutha Mata-Au.
- Firm view that the designs for the new bridge should provide for cycling and walking (including a barrier from traffic). Additionally, the Trust suggest work on the old bridge is not a good investment.

Landowners

- Consultation has been undertaken and is ongoing with landowners directly affected by the designation (land required)

Mitchell

- Consultation was carried out on 19 December 2018. Land owners' main points of discussion:
- Supportive of having the power realigned to the north side of the old bridge whilst impacts on their land on north side of the bridge are minimised.
- Raised issue of the private water supply being more extensive, including running over bridge to west bank to the Hewitts property, and potentially the Hotel.

Peters

- Consultation was carried out on 19 December 2018.
- Land owners' main points of discussion:
- Land owner clarified the existing powerline at the east of site ran to a pump shed disused. However, they wish to retain power.
- Land owner indicated they drive stock over the current bridge and wish this to continue, therefore a gate will need to be installed in the south-east corner of their paddock, linking to the old bridge.
- Did not raise any issues in terms of land acquisition.

Beaumont Hotel

- Land owners' main points of discussion.
- No significant concerns raised.
- Agreed with benefits of the proposed layout.
- Further meeting was held on 19 December 2018, to present landowner with updated plans for carparking area. Land owner's main points:

- Agreeable to maintain any planting undertaken within area between hotel and SH8.
- Approved the idea to provide a pull over area across SH8 for larger vehicles (e.g. trucks).

Healy

- Consultation was carried out on 2 October 2018. Proposed impacts on their property were discussed including a 14m² property acquisition, the removal of 2 sycamore trees, possible trimming of oak trees, and unknown impacts on oak root zones. Owners were informed compensation requirements under PWA. The land owners were informed the existing highway will be raised 3 metres and an underpass for the cycle trail could be required.
- Land owners' main points of discussion:
- No general issue with proposal.
- The issue of noise was raised, the owners were informed of increased noise and potential vibration during construction.
- Indicated concern that the construction would require a work area beyond the land take. The owner was reassured the contractor would need to work 'up to' the property boundary.

Other Interested Parties

- Cold Gold Clutha (Peter Hall) Cold Gold Clutha have a resource consent to dredge for gold in the area. Cold Gold Clutha provided dimensions of their consented dredge.

Public Open Day

Consultation was carried out with the general public on the Open Day. Their key points of discussion were as follows:

- General support for the project.
- General support for retaining the existing bridge.
- Traffic safety issues with speed, passing and lighting through the township.
- Queries around ongoing management of the safe stopping area and what sort of facilities could be provided.
- Some concerns about the impact of local road closures (particularly Rongahere).
- Recognition of the safety issue at the Westferry Street / SH8 intersection.

8 Assessment of Effects

8.1 Overview

This section describes the effects the project is likely to have on the environment along the route. The focus of the effects assessed below is on those effects that will remain after taking into consideration the proposed mitigation measures.

The actual or potential effects of the Project are considered to be as follows:

- Positive effects
- Traffic
- Air Quality
- Landscape and visual
- Lighting
- Noise and vibration
- Contaminated Land
- Water Quality
- Aquatic Ecology
- Terrestrial Ecology
- Hydrology and Hydraulics
- Cultural Values
- Archaeology and Heritage
- Social and Recreation
- Infrastructure

These actual or potential effects have been assessed. The effects assessments are detailed in the technical appendices attached to this Notice of Requirement and resource consent applications.

The NoR includes land required for construction. Although these areas are to be designated for *State highway purposes*, along with the additional land required for road. Following the completion of construction, the designation over the land required for construction will be uplifted.

The activities that will occur on land required for construction will be the same as those activities that will occur on land required for road, and therefore any actual or potential adverse construction effects in these respective land areas will be managed in the same manner, as identified in the following sections. With the mitigation measures proposed any actual or potential adverse construction effects will be temporary.

8.1.1 Mitigation Measures

The Assessment of Effects below identifies actual and potential adverse effects that might arise as a result of the project. Mitigation measures are identified in each section below. A full set of proposed conditions contained in Appendix 4 implement these mitigation measures where appropriate.

Notwithstanding the above, a Construction and Environmental Management Plan (CEMP) is proposed to provide the overall environmental management framework and approach. The plan will contain a series of sub-plans to address activity specific matters. Such plans are an accepted means of addressing effects and are a useful way to show how compliance with the more specific controls or parameters laid down by the other conditions of a consent will be met. So, for example, in the case of stormwater quality limits, specific parameters can be laid down but the way in which these are complied with is left with the consent holder to determine, that is, a management plan is a means for providing information about the method of compliance. However, because technology and knowledge might change over time the consent holder should have the ability to update management plans without having to go through the process of seeking a change to the conditions of consent.

A copy of the finalised CEMP will be provided prior to the commencement of construction activities. The matters to be addressed in the CEMP shall include, but may not be limited to, the following:

(i) General:

- Plan purpose
- Plan revision and compliance issue resolution processes
- Roles and responsibilities
- Training and education

(ii) Mitigation of Effects:

- Environmental objectives and principles
- Environmental management approach and methods

(iii) Plan Requirements:

- Contractual requirements;
- Monitoring, maintenance, audit and reporting;
- Mitigation/contingency measures, including emergency spill management procedures

(iv) Activity Specific Requirements:

- Operating procedures, processes and controls, together with timing for specific activities supported by supplementary plans as required
- Stockpiling
- Refuelling
- Site facilities
- Air quality management including fugitive dust during construction

The following Specific Management Plans (SMPs) will form subsets of the CEMP:

- (a) Erosion, Sediment & Dust Control Management Plan
- (b) Bridge Construction Management Plan
- (c) Hazardous Substances/Spill Contingency Plan
- (d) Temporary Traffic Management during Construction Management Plan(s)
- (e) Construction Noise and Vibration Management Plan

8.2 Positive Effects

The project is expected to have a number of positive effects on the State Highway network and the wider community.

The new Beaumont Bridge and road alignment will lead to significant positive effects including: security of route, improved provision for pedestrian and cycling facilities and improved road geometrics. There will be a shared pedestrian/cycleway path on the bridge to provide connectivity within the project area. Private property access will be maintained with access modifications for some landowners.

The purpose of the proposed new bridge and road alignment is to provide a safe and reliable connection within the Clutha District to enable residents to enhance their safety and provide for their social and economic wellbeing. The condition of the existing bridge continues to deteriorate and requires replacement. As such the project's main positive effect is security of route. Additional positive effects of the project include:

- Provisions for pedestrian and cycling footway across the new bridge
- Reduction of waiting time and delays through a two-lane bridge
- Wider and stronger structural capacity of the bridge in accommodating heavy loads
- Safety of road users
- Contributing to being part of an integrated and sustainable transport network.

8.3 Traffic

8.3.1 Traffic Management during Construction

The contractor will be required to implement suitable traffic management during construction in accordance with Transport Agency requirements.

One notable matter in this regard is the upgrade of Dee Street. Given both the Westferry Street and Rongahere Road intersection will be closed as part of the project, the programme of works will be such that Dee Street will be upgraded to the proposed standard prior to any physical road closures. This includes the formation of turning heads on Westferry Street and Rongahere Road.

Similarly the Weardale Street turning head will be formed prior to any physical closure.

It should also be noted that due to the project including a new alignment (particularly on the eastern bank) a large proportion of the road construction works will be able to be undertaken 'off line' (i.e. no or limited works on the existing SH8 carriageway).

8.3.2 Post Construction

Following completion of construction and commissioning traffic movements through the Beaumont township will have changed. With Westferry Street and Rongahere Road intersection with SH8 closed all traffic wishing to access south of the State Highway on the western bank will be directed down the newly upgraded Dee Street. It is noted for those current residences on Westferry Street the predominant flow of vehicles approaching from the south (Rongahere Rd) or West (SH8) are already travelling via Westferry Street, as the most direct route. Therefore, there will be a limited increase in traffic on Westferry Street with overall traffic flows remaining low and with any effects considered to be minor in the context of the existing traffic flow .

For other residences on the now ‘dead end’ sections of Westferry Street and Rongahere Road, there will be a reduction in traffic.

8.3.3 Summary

During the construction period a Temporary Traffic Management Plan will be put in place to manage the traffic and property access within the project area. The development and implementation of the plan will ensure that any potential conflicts, including access to the riverbed, are appropriately managed.

8.4 Air Quality

The project area is predominantly within a rural environment. It is likely that the dust created during construction works of the new bridge, road alignment, and movement of machinery will have a temporary effect on localised air quality.

8.4.1 Construction Related Effects

Construction phase air quality has also been considered. The majority of the alignment will be constructed through pastoral land. Potentially the most affected receptors are the residences to the south of SH8.

Potential sources of airborne dust include: wind-blown dust from exposed surfaces and stockpiles and vehicle movements on unsealed roads. A range of appropriate dust mitigation measures are available and, if implemented as necessary during construction, fugitive dust emissions from construction activities can be kept within the acceptable thresholds and trigger levels. The construction work will be managed so that it will not cause noxious, offensive or objectionable levels of dust beyond the designation or construction area boundaries.

8.4.2 Mitigation Measures

An Erosion, Sediment and Dust Control Management Plan (ESDCMP) is to be prepared as part of the CEMP and shall give effect to:

- (i) Best practicable methods for avoiding or mitigating dust emissions during construction
- (ii) A complaints procedure
- (iv) Inspection and auditing procedures and contingency plans if controls fail.

Appropriate measures to avoid, remedy or mitigate potentially significant adverse dust emissions will be available and implemented when unfavourable weather conditions occur, such as the following:

- Watering to keep construction materials damp
- Controlling the speed of vehicles and machinery operating within the construction area and on access roads
- Liaison with local communities regarding any concerns or complaints
- Avoiding as far as practicable the stockpiling of materials with dust generation potential close to sensitive receiving areas. Long term stockpiling of material outside of the road formation that has the potential to generate a dust nuisance should be located at least 100 m from sensitive receiving areas. The location of stockpiling sites should be considered on the case-by-case basis taking into account the separation distance, volume and properties of materials, appropriate mitigation measures and liaison with potentially affected or interested or concerned parties.

The requirement for an ESDCMP is contained in the proposed conditions in Appendix 4. With the implementation of the ESDCMP, the effect of fugitive dust emissions on the local environment will be less than minor.

8.4.3 Summary

Effects on air quality is likely to occur from dust produced during construction works primarily. The construction work will be managed through the ESDCMP so that activities will not cause noxious, offensive or objectionable levels of dust beyond the designation or construction area boundaries.

8.5 Landscape and Visual Effects

With any project there is the potential of its impact on the surrounding landscape and visual amenity of the area. The appearance and structural form of the new bridge will be designed according to current bridge standards which will contrast with the existing bridge. Certain design elements of the proposed new bridge, such as abutments and concrete edge barriers present opportunities for enhancement of bridge aesthetics.

The placement of a new structure and realigned route will permanently alter the landscape. These effects need to be considered against the environment in which the bridge will be located, which includes the presence of existing built development in Beaumont, as well as the existing SH8 alignment and bridge. It should also be noted that the redundant sections of state highway will be returned to pasture or appropriately landscaped.

The visual amenity and natural character of the area will be impacted during construction from general site disturbance including the construction of temporary trestle platforms and the presence of heavy machinery operating in the site.

The construction works will be visible to passing motorists travelling on SH8 within the project area however, given the duration of works, the effect on visual amenity is considered to be temporary and less than minor in nature.

The few residences that live nearby to the project area, on the southern and northern side of the river, will have a view of the construction works at the site. Screening from the vegetation in the riparian margins the Clutha River / Mata-Au and orientation of residential properties will limit the view of some residences to the site.

However, the effects on the landscape are considered to be minor as it will not significantly change the surrounding landscape given that it already includes the existing bridge structure and SH8 network.

8.5.1 Landscaping Treatment

The landscape plans are provided in Appendix 1. The urban and landscape design principles for the project are to:

- Ensure the proposed bridge is context sensitive in terms of acknowledging local cultural aspects, heritage, landforms, land use, views and rural environment
- Ensure good urban design outcomes are achieved, utilising creative and innovative measures to integrate sustainable design measures including structures, street furniture, drainage and ecology
- Ensure that the Project relates to the future growth of the township, the cycle trail and a range of connections to the wider landscape
- Ensure the design is environmentally sensitive

- Ensure the design is aligned with Transport Agency’s and Council policies and objectives
- Ensure the design collaborates with local community and interest groups

8.5.2 Mitigation Measures

It is considered that the adverse effects on landscape and visual amenity of the area from the project will be less than minor post construction. The majority of the effects on the visual amenity and landscape will occur only during the construction period and these effects are considered to be temporary and less than minor in nature. The adverse effects post construction will be mitigated through the use of proposed landscaping within the project area and screen planting to complement the existing environment as well as to enhance its amenity value.

8.5.3 Summary

In terms of visual effects, the majority of the effects will be produced during construction works from the presence of machinery working on site. The construction works will be visible to passing motorists and residences that reside near the project area, however the visibility of works will be partially screened by existing vegetation in the riparian margins which will reduce the effects. It is considered that the effects on visual amenity during construction will be temporary in nature.

Landscaping treatments are proposed to manage and mitigate the effects on the visual amenity and landscape of the area whilst enhancing the amenity value and ensuring the proposed landscaping complements the surrounding environment.

8.6 Lighting

As identified above, some minor changes to existing road lighting in the area are proposed, for safety reasons.

The lighting will be designed to comply with relevant standards.

No ‘feature lighting’ on the proposed bridge is envisaged.

8.7 Noise and Vibration

Given the project will result in a changed highway alignment, and that there will be considerable construction required including piling, an assessment of the effects, both from construction and from operational have been assessed (WSP-Opus 2019). The noise and vibration assessment assessed 14 locations as shown in Figure 9 below.

The Clutha District Plan identifies the potential for adverse noise and vibration effects from operation and construction of the roading network. The Clutha District Plan recognises ‘operation of transport systems is defined as a land use activity by virtue of Section 9(4) of the RMA’ and states Council shall ‘exercise control’ in respect of noise but road-traffic noise limits are not provided. The Clutha District Plan does not provide construction noise limits, considering existing New Zealand Standards are adequate controls and referring to *NZS 6803: 1984 The measurement and assessment of noise from construction, maintenance and demolition work*. The Clutha District Plan provides a general rule that vibration levels are assessed in accordance with *NZS 4403: 1976 Code of practice for storage, handling and use of explosives* and for Infrastructure requires vibration from construction activity shall comply with the peak particle velocity limits in table 1 of German Standard *DIN 4150-3: 1999 Structural Vibration – Effects of vibration on structures*.



Figure 9: Noise and Vibration Assessment Locations

8.7.1 Construction Noise and Vibration

It should be noted that the construction noise and vibration assessment is based upon preliminary construction methodologies, however fundamental construction techniques are unlikely to change significantly.

The assessment of construction noise and vibration is based on preliminary construction methodologies although the fundamental construction techniques are unlikely to vary significantly. The assessment has found that a potential or likely construction noise limit of 75dB L_{Aeq} will be exceeded at a number of properties for piling, earthworks and sealing activities if no additional management is exercised.

It is likely that once the construction methodology is confirmed, some form of noise and vibration mitigation will be required for the works and will mitigate any adverse effects. The exact form of the mitigation should be decided at the stage that the construction methodology is confirmed. This mitigation will need to address

the findings of the assessment to ensure any noise and vibration effects are appropriately avoided, remedied or mitigated.

8.7.2 Operational Noise and Vibration

The operational noise effects of the Project are considered to be reasonable without additional mitigation or management.

The modelling done with the NZTA Road Traffic Noise Calculator has found that the Project does not meet the NZS 6806 definitions for classification as ‘new road’ or noise ‘altered road’ for which criteria for mitigating noise are given, so it is interpreted that the road-traffic noise from the project can be considered reasonable without (further) assessment or mitigation.

It is noted that the sites 8 and 9 are predicted to see increases in noise due to the Project. These increases in noise may be perceptible or noticeable but the increases are still considered reasonable given the total noise level of the environment, using the NZS6806 methodology and therefore no specific mitigation is considered necessary.

With regards to operational vibration the assessment has also concluded that the effects are expected to be reasonable without any mitigation or management. One of the assumptions in reaching this conclusion is that the finished project will not contain any large changes in road level from poor seal joints, poorly specified or constructed bridge joints or sunken service covers as these features have the ability to generate large vibration levels. Low noise/vibration bridge joints will be specified for the project.

8.8 Contaminated Land

A Preliminary Site Assessment (PSI) has been undertaken due to historic land uses being identified through the Business Case phase of the project, in particular the former Beaumont Railway Station and extensive previous orcharding in the area.

The PSI was prepared in general accordance with CLMG No1 and the NES for Assessing and Managing Contaminants in the Soil to Protect Human Health (2011), and provided an assessment of the historical land uses and intended land use to determine whether or not the activities have, more likely than not, resulted in contamination of the soil that may be hazardous to human health.

The activities identified in the PSI were:

- Former stockyards / sheep dip
- Historic orchard (Peters property)
- Carpark /boat access to the river
- Former rail corridor
- Historic settlement
- Historic gold mining

The report stated that it is more likely than not that the risk to human health associated with the development identified on the site is low. As such, it is considered highly unlikely that there will be a risk to human health associated with the proposed development.

On this basis the report recommended that should any ground conditions be encountered across the site which are not anticipated from the findings of this report a Suitably Qualified and Experienced Practitioner (SQEP)

should be consulted in order to reassess the risks to human health. No specific control measures were recommended.

On this basis it is considered any effects arising from the presence of contaminated land are less than minor.

8.9 Water Quality

The National River Water Quality Network (NRWQN) includes two sites in the Clutha River Mata Au downstream of Lake Roxburgh: Clutha River at Millers Flat and Clutha River at Balclutha (Figure 3). Water quality at the Millers Flat site is generally good, with relatively low water temperatures, high levels of dissolved oxygen, low levels of nutrients and generally low levels of E. coli present (Table 2). However, water clarity at this site is generally low (average 2 m, maximum 5.95 m), and, conversely, turbidity is generally quite high (Table 2). Water quality at the Millers Flat site complies with all corresponding Schedule 15 limits when applied as a 5-year 80th percentiles. The values for many of the water quality variables at the Clutha River at Balclutha are similar to those at Millers Flat, although nutrient concentrations (particularly nitrate-nitrite nitrogen and total nitrogen) and average E. coli concentrations are markedly higher at Balclutha than at Millers Flat (Table 2). Water quality at the Balclutha site complies with all corresponding Schedule 15 limits when applied as a 5-year 80th percentiles, with the exception of nitrate-nitrite nitrogen (), which exceeds the Schedule 15 limit of 0.075 mg/L.

Of the two sites, water quality measured at the Millers Flat site is likely to be most representative of the water quality in the reach affected by the construction of the bridge at Beaumont, as the Millers Flat site is 22 km upstream of Beaumont and no major tributaries or discharges that are expected to have an appreciable effect on water quality in the Clutha River Mata-Au enter it between these two locations.

Based on the effective stormwater treatment systems proposed, the impact on water quality of the Clutha River Mata-Au will be less than minor and no significant change to water quality will occur.

An ESDCP will be prepared and implemented during construction works to effectively manage discharge impacts on receiving environments.

During rainfall events, exposed surfaces of the ground can mobilise sediments to discharge into waterways which can impact the quality and ecosystem of the receiving waterway. Where possible construction stormwater will be discharged to land. Stormwater that cannot discharge to land will discharge into the river and stream via treatment.

There will be incidental discharge of sediments to water during construction works from bed disturbance associated with the movement of machinery in the riverbed, and piling activity. This will occur with the construction of the new bridge, installation of rock rip rap structures on the bridge abutments, forming and removing the temporary staging platform. It is considered that the quantity of sediment release will not exceed the amount of sediment expected to be released during high flow events.

8.9.1 Mitigation Measures

The actual and potential effects on water quality are mitigated through:

Operational

- Adequate stormwater treatment systems are proposed and designed to a capacity to withstand overflow during high rainfall.

Construction

- All construction phase stormwater being managed by way of an ESDCP prepared in accordance with industry guidelines.

8.9.2 Summary

The proposed stormwater treatment systems have been designed to accommodate stormwater runoff volumes during low intensity and high intensity rainfall periods. This will mitigate any potential discharge of contaminants from entering the waterways.

Throughout the project area best practice erosion and sediment control measures to prevent fine sediment entering adjacent waterways will be managed by way of an ESDCP prepared in accordance with guidelines.

8.10 Aquatic Ecology

8.10.1 Operational Effects on Aquatic Ecology

It is considered that the stormwater runoff volume from the road embankments, once the bridge is in operation, will be greater than the existing bridge due to the increase of the road surface area with the bridge becoming two lanes. Potential contaminants arising from vehicles on the road such as diesel particulate matter, brake lining dust and other sediments, pathogens and road film, is likely to be carried by the stormwater runoff and to essentially end up in waterways. In order to mitigate adverse effects on aquatic ecosystems, stormwater treatment systems have been proposed. A stormwater detention basin will be installed to trap sediments washing off from the road on the eastern side of the proposed bridge.

8.10.2 Construction Effects on Aquatic Ecology

Construction activity has the potential to impact on the habitat of aquatic ecology at the site, though the following activities:

- Enabling works in the bed including construction of any temporary gravel working platforms;
- Construction and deconstruction of the staging platform;
- Piling.

These activities have the potential to disturb the bed, and also to mobilise sediment.

Five species of fish have been recorded as being present in the main stem of the Clutha River Mata-Au in the vicinity of the proposed works :

- longfin eel (*Anguilla dieffenbachii*);
- torrentfish (*Cheimarrichthys fosteri*);
- common smelt (*Retropinna retropinna*);
- quinnat salmon (*Onchorhynchus tshawytscha*) and
- brown trout (*Salmo trutta*).

In addition to these species, it has been identified that several other species could be reasonably expected to reside in or pass through this area:

- lamprey (*Geotria australis*);
- shortfin eel (*Anguilla australis*);
- common bully (*Gobiomorphus cotidianus*);
- upland bully (*Gobiomorphus breviceps*);
- kōaro (*Galaxias brevipinnis*) and
- rainbow trout (*Onchorhynchus mykiss*)

The construction of the bridge piles is likely to cause a minor amount of habitat loss and sediment release from the disturbance to the bed. The increase in turbidity from machinery operating in the riverbed can affect feeding rates of fish species and limit migration and recruitment. Sedimentation release in the waterway can harm life expectancy and habitats of fish species by blocking interstitial spaces, reducing fish cover, shelter, foraging areas, food supply and spawning sites.

The report prepared by Ryder notes that downstream of the Roxburgh Dam the river is affected by daily flow fluctuations resulting from electricity generation. The report states that this causes a “varial zone”, an area of the riverbed that is intermittently wetted and dried, which reduces the suitability of this area for aquatic life. This wetting and drying activity is noted as resulting in low densities and diversity of macroinvertebrates, as few freshwater invertebrates are adapted to frequent wetting and drying (p14). The report goes on to state the fluctuations in the varial zone reduce the suitability for fish habitat, and also the lower densities in invertebrates (identified above) reduces the local food availability for any fish present.

Mitigation Measures

In order to mitigate the effects on aquatic and terrestrial ecosystems and their habitats within the Clutha River Mata-Au from the proposed works, the following mitigation measures have been included in the construction methodology:

Bridge works:

- An emergency contingency plan for concrete spills should be prepared prior to any works commencing.

Stormwater discharge:

- An ESDCP Plan will be put in place to manage any adverse effects.
- The stormwater basin will be installed on the eastern side of the realignment to trap sediments that have washed off from the road. The proposed planting will aid in filtering sediments and contaminants.

8.10.3 Summary

The adverse effects on aquatic ecosystems during construction works and operation of the bridge can be appropriately mitigated and managed through the mitigation measures, noting the low aquatic habitat value of parts of the site, due to wetting and drying effects associated with frequent water level changes. It is

considered that aquatic habitats will be disturbed and/or lost during construction works however any effects associated with this are less than minor.

8.11 Terrestrial Ecology

8.11.1 Construction effects

Flora

The project will have the potential to impact on terrestrial ecology through the general land disturbance associated with the project. Generally speaking the areas to be disturbed by the project are either existing pasture, roadside verges and riparian areas adjacent to the river. The Ryder report assessed the project footprint and identified eighty plant species (16 native, 64 exotic) within the footprint. The flora within the footprint was typical of pasture, road-side and disturbed riparian vegetation, being dominated by exotic grasses and herbs with a scattering of mainly introduced trees and shrubs. Native plants comprised <1% of the total cover. No nationally, or regionally, threatened or at-risk plant species were detected.

The report also identified that because the existing vegetation values of the footprint are very low weed species are not considered to pose a significant threat to the existing vegetation in the footprint. The report did not state that there is the potential for new weed species to be introduced to the site (e.g. on construction machinery or in aggregates).

Fauna

In terms of birdlife, the report noted that the loss of mature trees (the large macrocarpa on the eastern bank, as well as willow species), may result in the loss of potential roosting habitat of grey teal or black shags. Any loss of this habitat is localised at the site, and similar habitat stretches for many kilometres up and downstream of the site.

The report did not assess potential lizard and invertebrate fauna-habitats but identifies lizard species may occur within the footprint given the presence of suitable habitat along the edges of pasture and existing roads. All lizard species are protected under the Wildlife Act (1953), administered by the Department of Conservation, and a dedicated lizard survey is recommended prior to works commencing. This has been promoted as a draft condition of the designation.

8.11.2 Mitigation Measures

Any effects on vegetation (and associated habitat loss) within the project area will be mitigated through replanting of the areas disturbed as part of the proposed landscaping treatment. These areas will be replanted with appropriate plant species.

Summary

The vegetation within the project area is highly modified with almost no indigenous vegetation present. The areas of vegetation disturbance will be replanted through the proposed landscaping treatment with appropriate species. This will mitigate any adverse effects on vegetation ecosystem within the area.

8.12 Hydrology and Hydraulics

The placement of a new structure in the bed of the Clutha River Matau-Au has the potential to adversely affect the downstream morphology of the river through changes to the flow characteristics brought about by the new piers in the wet bed.

Additional to this, the bridge also needs to be designed to remain serviceable in flood events, and to not have any impacts on up or downstream flood levels

Performance in Flood Events

A flood frequency analysis has been completed for the Clutha River based on flow records from the Roxburgh Dam, 50km upstream of the proposed bridge, and flow records at Balclutha, approximately 60km downstream of the bridge.

The analysis estimates the following design flood flows for various Annual Recurrence Intervals (ARIs) including for climate change effects:

- 20 year ARI (to inform design of pedestrian and cyclist linkages) = 3,140m³
- 100 year ARI (Serviceability Limit State (SLS)) event for bridge design) = 5,250m³
- 1,000 year ARI (Upper Limit State (ULS)) event for bridge design) = 7,100m³

Further details of the analysis are contained in the Hydrological Assessment Report attached in Appendix 5.

The design flood flows from the hydrological assessment and hydrographic survey outputs (river cross sections) have been incorporated in a hydraulic flood model to assess design flood levels for the new bridge and associated pedestrian / cyclist linkages.

The modelling indicates the following design flood levels for various Annual Recurrence Intervals (ARIs) including for climate change effects:

- 20 year ARI (to inform design of pedestrian and cyclist linkages – linkage remains open) = RL45.31m
- 100 year ARI (SLS event for bridge design – bridge remains open) = RL 47.93m
- 1,000 year ARI (ULS event for bridge design – bridge closed due to flooding, but remains intact) = RL 49.91m

Scour protection for the proposed bridge piers and abutments, and hydraulic loadings against the bridge structure require careful consideration. The desired response in a 100 year ARI flood event is that bridge will remain serviceable, and that in a 1,000 year ARI flood event the bridge structure will not be undermined to the extent of destabilising the bridge piers, and the bridge structure will not be weakened under pier rotation or horizontal deflection but will not be useable due to flooding. Brittle behaviour in bridge members and the risk of structural collapse has been considered. The close proximity of the two bridges to each other can amplify the scour at the downstream bridge depending on the relative location of the piers and this has been considered when assessing scour protection works.

Velocities have been output from the hydraulic model to assist with the design of scour protection to bridge abutment and piers. The proposed scour protection will consist of a rock revetment around the abutments as described above in Section 5.

Effects on existing flood risk

The proposed bridge's abutments will reduce the flow of floodwaters across the floodplain, and its piers will further impede the flow of water down the Clutha River Matau Au channel. Consequently, it can be expected that the water levels upstream of bridge will increase. The Hydraulic Assessment Report attached in Appendix 5 details the existing flood levels, and the expected change in flood levels following the construction of the proposed bridge for a range of flood events.

The results in the Hydraulic Assessment Report demonstrated the effect of the proposed SH8 Beaumont Bridge across the Clutha River Matau Au will have a less than minor effect on the flood risk upstream of the existing SH8 Bridge. The maximum increase in flood level for the scenarios considered is 0.10 m, which is within the model error range.

The existing Beaumont bridge soffit level was surveyed to be 48.68 m RL. This provides 0.52 m of freeboard to the 100 year ARI flood event including the effects of climate change out to 2120 in the existing situation. Freeboard will reduce to 0.42 m following the construction of the proposed bridge which provides acceptable provision for passing flood flows including potential debris.

Temporary Staging Platform

Freeboard requirements for the SLS flood event are not specified in the NZTA Bridge Manual. 600mm freeboard to the 25 year event is considered appropriate and shall be incorporated in the Project Specification, to ensure any effects from the presence of the temporary staging platform in a flood event can be adequately mitigated.

8.13 Cultural Values

As identified in Section 4 consultation has been undertaken with Aukaha and Te Ao Marama throughout both the business case phase of the project, and as part of the current phase of the project.

The cultural values associated with Mata-Au particularly as a Statutory Acknowledgement conveys the importance of undertaking ongoing consultation with Aukaha and Te Ao Marama in development of the bridge and alignment design. Ongoing consultation with Aukaha and Te Ao Marama has been and will be undertaken throughout the duration of the project to ensure correct measures are implemented to avoid, remedy and mitigate any actual or potential effects on cultural values. Further to this, opportunities to incorporate cultural elements into the detailed design of the project (for example aesthetic treatments to bridge abutments) are being explored with Aukaha and Te Ao Marama.

An Accidental Discovery Protocol will be implemented during the construction works. The proposed landscaping will contribute to enhancing the cultural values of the area.

8.14 Archaeological and Heritage values

Archaeology

An archaeological assessment of the site has been undertaken, to identify the archaeological risk for the project, and to accompany an application for an Archaeological Authority.

The recorded sites identified in proximity of the project area are shown below in Table 4.

Table 4: NZAA Entries

NZAA ID	Site Type	Distance from Project Area	Details
G44/3	Midden/Oven	0.3 km	Site recorded along 1966 fence line leading down small gully as ovens over 1.5 acres. Recorded as ploughed, which brought charcoal, ovenstones and flakes to the surface. SRF contains limited information, although an update in 2012 notes that it was down Chinamans Flat Road in middle of paddock on left-hand side, past landowners house. During the site upgrade, a test pit revealed that there is undisturbed material below the plough zone.
G44/4	Artefact find	0.7 km	Site recorded as a find spot of a 1A adze on Mrs Morris's land. Recorded in 1965 and not revisited during the Site Upgrade Project.
G44/64	Mining - gold	1 km	Located upstream of Beaumont Bridge on river's true left. Recorded as tailing and dredge ponds across the whole flat, approximately 600 m upstream of the Beaumont River Mouth.
G44/86	Historic – domestic	0.9 km	Site recorded as a hut/floor site, associated with the railway. Site situated on river side of old railway formation approximately 20-30 metres north of the Beaumont River.
G44/87	Transport/ communication	0.8 km	Old road bridge next to the old railway bridge. It is a mortared schist bridge abutment on both banks of the Beaumont creek.
G44/88	Mining – gold	0.8 km	Water race approximately 40 metres from new bridge. Is revetted in places. Race is 1.5 m wide.
G44/143	Historic – domestic	0.8 km	Hut platform by a revetment, supposedly built after 1900. Includes a hut floor site and a

			benched track that runs to the south of the project area.
--	--	--	---

All pre-1900 archaeological sites are protected under the provisions of the HNZPTA, whether the sites are recorded or not. It is illegal to destroy or modify archaeological sites without an archaeological authority from Heritage New Zealand. This archaeological assessment has identified that there are risk areas associated with the Project works at Beaumont to realign the road and provide an alternate bridge crossing.

There is a risk of encountering unrecorded archaeological remains within the Project area. These potential remains are likely to be modified or destroyed by the road realignment and associated works.

There are potential effects posed to known or potential archaeological sites surrounding the Beaumont area associated with tranches of the work required to successfully realign the road and bridge around Beaumont. Works around the banks of the Clutha River Mata-au pose risk for encountering unrecorded Māori archaeological remains, such as ovens. Excavation in these zones will be required for the bridge approaches and the realignment of the road. The potential effects of these proposed works are destruction of any archaeological features.

The archaeological assessment has identified the following areas of archaeological risk, which will be included in the application for an archaeological authority -

- Site of the former Bridge Hotel, stables and blacksmith.
- Proximity to the Clutha River Mata-au and Low Burn - potential for encountering Māori ovens and occupation sites.
- Existing Beaumont Bridge and approaches.
- Proximity to the historic house site along Rongahere Road (immediately south of the existing bridge).

Heritage

As part of the Detailed Business Case (DBC) investigation an assessment of the Heritage Assessment of the Beaumont Bridge was undertaken (Opus, 2016). The assessment concluded that the Beaumont Bridge has high aesthetic and cultural value, and exceptional historic, contextual, technological, scientific and archaeological value; and the settlement of Beaumont has exceptional cultural, archaeological, historic and social value.

Subsequent to the DBC the option chosen by the NZ Transport Agency was to:

- Retain the Beaumont Bridge;
- Find a new use for the Beaumont Bridge taking advantage of existing opportunities such as cycle trails;
- Undertake repair works necessary to make the bridge suitable for the selected alternative use;
- In designing the new bridge consider the heritage significance of both the existing bridge and the Beaumont settlement;
- Undertake an Archaeological Assessment for the Beaumont Bridge and the wider area to be affected by works.

In terms of the above recommendations above the proposed alignment ensures the existing bridge can be retained, a use for it has been proposed (pedestrian and cycle linkage), the heritage significance of both the bridge and settlement was considered in selecting a new bridge option and an archaeological assessment has been undertaken (and authority applied for).

In terms of the repair works to the existing bridge, and the preparation of a Conservation Management Plan, these are matters that the Transport Agency, as asset owner, will undertake outside of this RMA process. This includes seeking an archaeological authority, if required.

Aside from the existing bridge, the other listed items in the Clutha District Plan are a series of scheduled trees near the corner of Weardale Street and SH8. Of these trees, there is the potential for some of the northern limbs of trees H80E and H80F (both English Oak) to be trimmed as these will ‘hang’ over the new highway alignment. The extent of this will be fully documented in any Outline Plan submitted. These works will be supervised by an arbourist to ensure an appropriate level of care is undertaken.

Summary

There will be some minor adverse effects on archaeology and heritage values from the proposal, particularly the loss of some limbs on two scheduled trees. Apart from that, appropriate measures are proposed to ensure any other actual and potential effects on archaeology and heritage are appropriately mitigated.

8.15 Social and Recreation

The proposed alignment of the SH8 route will affect properties within and immediately adjacent the project area during construction. This will be through temporary elevated levels of noise, presence of machinery, traffic management, and other construction related activities. The contractor will be required to address and manage these effects through the implementation of the CEMP.

No property accesses are proposed to be closed as part of the project.

There will be some temporary restrictions on access to the river downstream of the existing bridge for safety reasons during construction, due to the footprint of works. The access to the river on the western bank will be reinstated on completion of the works. Maintaining the river access ensures that the river remains accessible to the local residents, wider community and tourists to continue to carry out their desired recreational activity. This retains the recreational value of the area.

Consultation has also been undertaken with the harbourmaster regarding safety for river users during construction. Appropriate signage to manage river users will be in place for the duration of the works to alert river of access restrictions, and where necessary demarcate any temporary platform / working area in the river.

The project will produce positive effects to the community. The accessibility in relation to social impacts is considered to be positive. The provision for pedestrian and cycling facilities within the project area will improve the connectivity within Beaumont. Providing sustainable transport modes across the bridge will facilitate more public movement around areas within the township and with more choice. Enhancement of the rest area on the eastern river bank adjacent Craig Flat Road will also further support recreation and amenity values in the project area.

It is considered that the project will have a positive impact on the social and recreational value of the area.

8.16 Infrastructure

Telecommunications

Consultation with service providers has confirmed existing Chorus copper services routed along SH8 and across the existing bridge. As part of the new bridge project, the existing services will need to be retained/protected with localised relocation anticipated around the Rongahere Road intersection where the new bridge approach

is elevated. To future proof for possible future fibre optic installation a 100mm duct is to be installed across the new bridge and extended as a continuous length along the approach embankments and terminated in chambers in the shoulder/verge.

Electricity

11 kV and 400V overhead power lines operated by PowerNet located at the site conflict with the proposed bridge and approach alignment. A preferred power relocation option has been developed in liaison with PowerNet and comprises diversion of the 11kV network to a new overhead crossing of the river upstream of the existing bridge.

Private Reticulation

Consultation has identified a gravity water feed on the eastern side of the river supplied from a gully northeast of the existing bridge, making use of an intake that was installed to service the former Beaumont Railway Station. The water supply is understood to feed water troughs within the Mitchell property, a residential dwelling at 12 Weardale Street and the old store. The proposed alignment on the eastern approach to the bridge crosses the pipeline and this will need to be located and reinstalled in a duct below the alignment.

Futureproofing

It is proposed to install an additional four 150mm ducts through the new bridge abutments to allow for any potential future power or service relocations. This low-cost option will eliminate the need to core through reinforced abutment headwalls in the future. This would also enable retrofit of street lighting across the bridge in the future, however, given the location, this is not envisaged to be required. No provision has been made for future water or sewer supplies across the new bridge and discussions with Clutha District Council (Chris Bopp) indicate these are not anticipated. Notwithstanding this, the bridge form is amenable to future retrofit of services between steel girders should this be required.

8.17 Summary of Effects

The effects assessment shows that there will be a number of positive effects from the project. The project will be able to provide security and reliability of route within the Clutha District. It will also improve safety within the project area for road users and local residents. The provision for pedestrian and cyclist facilities on both bridges will improve connectivity and encourage alternative modes of transport to and from the Beaumont Township. The geometry of the new bridge will provide improved provision for the movement of heavy/large loads across the bridge and reduce traffic delays and risk of incidents.

Noise generated will be limited to the duration of construction works. The effect from construction noise is considered to be temporary in nature and less than minor. The vibration from construction works will be intermittent and managed through Construction Noise and Vibration Management measures in the CEMP to reduce any adverse effect on nearby properties and structures to an appropriate level. Any dust generated from construction works will be managed by the ESDCP to mitigate the risk of dust beyond the designation or construction area boundaries. Public access to Clutha River Mata-Au will be retained on the western side of the river through the relocated access track.

There is expected to be some effect to the landscape and visual amenity values of the surrounding area during construction. However, these effects are considered to be less than minor and temporary in nature for road users and nearby residents. The new bridge structure and route alignment will permanently alter the landscape of the area. In order to mitigate any adverse effects, landscaping treatments are proposed to provide an attractive landscape which complements the surrounding environment.

Discharge of stormwater during construction and post construction will have a less than minor effect on water quality of the Clutha River Mata-Au. The ESDCP will be put in place during construction works to mitigate the adverse effects on water quality. Stormwater treatment systems will be used to manage and treat stormwater runoff from the bridge and road embankments. This will ensure the mitigation of contaminants entering the receiving waterways. The discharge of contaminants during construction of the new bridge will be limited to sediments and the movement of machinery in the waterway will create temporary effects to the water quality of the Clutha River Mata-Au.

There is a potential that archaeological material will be found during the removal earthworks associated with the project. The effects to archaeological values will be managed through the guidance of the Archaeological Authority Management Plan during construction works.

Noise and vibration effects will need to be managed through a construction noise and vibration management plan.

There will be some effects on scheduled trees at the site, which will be managed through the use of an arborist to oversee any trimming required.

This application does not propose to remove the existing Beaumont Bridge.

Overall, the adverse effects generated from the proposal and associated construction works will be minor.

A set of draft conditions for both the Notice of Requirement and the resource consents are contained in Appendix 4 of this document.

9. Statutory Assessment

This section outlines the statutory and planning provisions that are relevant to the Notice of Requirement and consenting of the Project. As outlined, a number of resource consents are required from the Otago Regional Council and Clutha District Council under the RMA.

9.1 Notice of Requirement

9.1.1 Section 181 RMA

Section 181(1) of the RMA, in summary, provides that a requiring authority may give notice to a territorial authority of its requirement to alter an existing designation in an operative district plan or a requirement for a designation in a proposed district plan.

Furthermore, subject to Section 181(3) of the RMA, a territorial authority may at any time alter an existing designation or a designation requirement if certain conditions are met as follows:

A territorial authority may at any time alter a designation in its district plan or a requirement in its proposed district plan if –

- (a) The alteration—*
 - (i) Involves no more than a minor change to the effects on the environment associated with the use or proposed use of land or any water concerned; or*
 - (ii) Involves only minor changes or adjustments to the boundaries of the designation or requirement; and*
- (b) Written notice of the proposed alteration has been given to every owner or occupier of the land directly affected and those owners or occupiers agree with the alteration; and*
- (c) Both the territorial authority and the requiring authority agree with the alteration - and sections 168 to 179 and 198AA to 198AD shall not apply to any such change.*

If all of the criteria of Section 181(3) are satisfied, the designation alteration may occur without further formality (i.e, on a non-notified basis).

The effects criterion is one of two options available to the requiring authority under Section 181(3)(a). The other relates to a determination of the extent of change or adjustment to the boundaries of the designation.

It is important to note that it is not necessary to satisfy both the effects and boundaries tests of Section 181(3)(a)(i) and (ii). The two limbs of Section 181(3)(a)(i) and (ii) are disjunctive, so it is only necessary to satisfy one of the two criteria.

The extent to which this Notice of Requirement for designation alteration is able to satisfy the tests of Section 181(3) of the RMA is discussed below.

9.1.2 Effects on the Environment

Actual or potential adverse effects on the environment are assessed as minor, and can be avoided, remedied or mitigated to the extent that any such effects will likely be minor, and positive effects will arise. The designation alteration will therefore result in no more than a minor change to the effects on the environment. In this context the proposal can be regarded as satisfying the effects test of Section 181(3)(a)(i) of the RMA.

9.1.3 Extent of Boundary Alteration

The existing SH8 designation needs to be altered to cater for the new location of the bridge and changes to the bridge approaches. The extent to which the designation alteration departs from the boundaries is relatively minor when considered in relation to the SH8 designation. It is therefore considered the proposal can be regarded as satisfying the boundaries test of Section 181(3)(a)(ii) of the RMA.

9.1.4 Directly Affected Party Approvals

To satisfy section 181(3)(b) it is necessary to obtain the written approvals to the designation alteration from every owner or occupier of land directly affected, that is, land required for the project and not owned by the Transport Agency.

Written approvals have not been sought. The Transport Agency has instead requested public notification of the application.

9.1.5 Territorial Authority and Requiring Authority Agreement

To satisfy Section 181(3)(c) of the RMA, both the requiring authority and the territorial authority must agree to the designation alterations. The Transport Agency, as requiring authority, agrees to the designation alterations.

9.1.5 Section 171(1) Resource Management Act 1991

When considering a notice of requirement and any submissions received, a territorial authority, subject to Part 2 consider the effects on the environment of allowing the activity, having particular regard a number of matters including:

(b) whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if—

(i) the requiring authority does not have an interest in the land sufficient for undertaking the work; or

(ii) it is likely that the work will have a significant adverse effect on the environment; and

(c) whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought;

In this instance the Transport Agency does not have an interest in the land sufficient for undertaking the work. At present funding for the property acquisition component of the project is not available and therefore the Transport Agency has not been in a position to undertake property acquisition with directly affected landowners. The alternatives were considered at length at the business case phase of the project as detailed above in Section 6.

For the reasons discussed in the assessment of environmental effects above, the proposal is not expected to give rise to any significant adverse environmental effects.

The work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought for the reasons outlined in Section 2 of this document.

9.1.6 National Policy Statements

There are five National Policy Statements (NPS) in place. These are:

- Electricity Transmission
- Renewable Electricity Generation
- NZ Coastal Policy Statement
- Freshwater Management
- Urban Development Capacity

Only the NPS on freshwater management is considered to be of relevance to the applications.

9.1.7 National Environmental Standards

There are five National Environmental Standards (NES) in force as regulations. The following NES is considered relevant to the proposed designation to which CDC must consider.

Assessing and Managing Contaminants in Soil to Protect Human Health

The NES for Assessing and Managing Contaminants in Soil to Protect Human Health is relevant to this proposal. An application to Clutha District Council under the NES for is being applied for as part of this application.

9.1.8 Regional Policy Statements

In considering the proposal the consent authorities must have particular regard to the regional policy statements.

Currently Otago has two regional policy statements, the Partially Operative Regional Policy Statement for Otago 1998 and the Partially Operative Otago Regional Policy Statement 2019. Both RPS's are broad policy documents which consider all of the Otago's regionally significant resource management issues and provides objectives, policies and methods to address those issues. It sets out how natural and physical resources are to be managed in an integrated way to promote sustainable management. Sections 104 and 171(1)(a) of the RMA directs the consent authorities to have particular regard to the proposed RPS when considering the effects on the environment of allowing the requirement and granting resource consents.

Another key issue is consistency with relevant objectives and policies of the proposed RPS itself. Objectives and policies from the RPS's that are relevant to consideration of the proposal and are considered in this AEE relate to:

- Provision for Ngai Tahu and their relationship with resources
- Resilient and Sustainable Communities
- Use and Development of resources
- Regionally Significant Infrastructure
- Land and Water
- Air Quality

Relevant objectives and policies are listed in Appendix 3 Table 1 and an assessment as to the consistency of the project with these is also summarised in Appendix 3 Table 1. It is considered the proposed designation

alteration is at least consistent with, and even promotes, the relevant Objectives and Policies contained within the RPS.

9.1.9 Clutha District Plan

The Clutha District Plan provides a framework to help manage the use, development and protection of the physical and natural resources of the Clutha District. Specifically, the District Plan sets down objectives, policies and rules to guide the use and development of land in a way that promotes the wellbeing of people and the environment.

A designation means that the District Plan rules no longer apply to the designated sites(s) however, it is necessary to consider the designation in the context of the policy framework. The designation should be consistent with the direction set by the District Plan policies.

Objectives and policies from the District Plan that are relevant to consideration of the proposal are listed in Appendix 3 Table 3 and an assessment as to the consistency of the project with these is also summarised in Appendix 3 Table 3.

The evaluation finds the proposal is consistent with these objectives and the associated policies.

The need for the work, the proposal, and the alternatives considered, are discussed above respectively. It is considered this discussion demonstrates that the proposal will have an overall positive effect on the capacity, security, safety and efficiency of the road network, and form part of a sustainable, integrated transport system for the Otago Region.

9.2 Resource Consent Applications

9.2.1 Section 104 RMA

Section 104 of the RMA applies to the consideration of resource consent applications.

104 Consideration of applications

- (1) *When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to –*
- (a) *any actual or potential effects on the environment of allowing the activity; and*
 - (b) *any relevant provisions of –*
 - (i) *a national environmental standard;*
 - (ii) *other regulations;*
 - (iii) *a national policy statement;*
 - (iv) *a New Zealand coastal policy statement;*
 - (v) *a regional policy statement or proposed regional policy statement;*
 - (vi) *a plan or proposed plan; and*
 - (c) *any other matter the consent authority considers relevant and reasonably necessary to determine the application.*
- (2) *When forming an opinion for the purposes of subsection (1)(a), a consent authority may disregard an adverse effect of the activity on the environment if a national environmental standard or the plan permits an activity with that effect.*

An assessment of the actual or potential effects on the environment has been undertaken in Section 8 above. The extent to which the proposed resource consent is able to satisfy Section 104(1)(b) and(c) and Part 2 of the RMA is considered below.

9.2.2 National Environmental Standards

There are five National Environmental Standards (NES) in force as regulations. The following NES are considered relevant to the proposed consent applications to which ORC must consider.

Air Quality

The NES for Air Quality includes standards for PM10 – fine particulate. The standard for PM10 is 50 µg/m³ as a 24-hour average with one exceedance permitted in any 12 month period. The NES is relevant in that air discharge permits can be declined if a proposal is likely to result in exceedance of the standards.

Air quality may be a potential issue during construction where fugitive dust emissions from disturbed ground have the potential to create an adverse effect. However, fugitive dust can be managed and controlled through specific on-site measures. The contractor will be required to prepare and implement an ESDCP which will identify how fugitive dust emissions will be managed.

9.2.3 Other Regulations

It is considered there are no other regulations relevant to the consideration of this resource consent application.

9.2.4 National Policy Statements

Only the NPS on Freshwater Management is considered to be of relevance to the proposed resource consents.

The proposed new bridge and road alignment will require stormwater disposal, which has the potential to affect water quality and freshwater ecosystems.

The stormwater treatment system uses roadside swales and a treatment pond to treat stormwater runoff. The stormwater runoff from the bridge will be treated using a treatment pond. It is considered that the design of the treatment system will hold low intensity and high intensity rainfall volumes.

It is therefore considered the discharges will also be consistent with the relevant objectives and policies of the NPS on freshwater management.

9.2.5 Regional Policy Statements

Otago currently has two Regional Policy Statements: the 1998 Regional Policy Statement for Otago: Partially Operative at January 2019, Partially Operative Regional Policy Statement 2019. The relevant objectives and policies of both RPS's are listed in Appendix 3 Table 1 and an assessment as to the consistency of the project with these is also summarised in Appendix 3 Table 1. It is considered the proposal is at least consistent with, and even promotes, the relevant Objectives and Policies contained within the RPS's.

9.2.6 Regional Plans

Regard needs to be had to the relevant Regional Plans – being the Regional Plan: Water for Otago, and the Regional Plan: Waste. A key issue is consistency with relevant objectives and policies of these plans.

These relevant objectives and policies are listed in Appendix 3 Table 2 and an assessment as to the consistency of the project with these is also summarised in Appendix 3 Table 2.

Actual or potential effects of the proposal on the environment are assessed above as minor, particularly with the mitigation measures proposed above and in Appendix 4.

Overall, it is considered the proposal is consistent with the relevant objectives and policies.

9.2.7 Section 107 RMA

Section 107 of the RMA places restrictions on the ORC in granting discharge permits (e.g. to discharge stormwater). In particular the Council must not grant a discharge permit if, after reasonable mixing, the contaminant or water being discharged is likely to give rise to certain effects in the receiving waters. These effects include any one or more of the following in the receiving waters:

- the production of any conspicuous oil or grease films, scums or foams or floatable or suspended materials
- any conspicuous change in the colour or visual clarity
- any emission of objectionable odour
- the rendering of fresh water unsuitable for consumption by farm animals
- any significant adverse effects on aquatic life.

The discharge of stormwater from the project to water will not cause the above effects.

9.3 Other Matters

9.3.1 Iwi Environmental Management Plans

The *Kāi Tahu Ki Otago Natural Resource Management Plan 2005* is relevant as it provides important guidance for in the resource management decision-making framework in Otago. The document outlines environmental outcomes sought by Te Runanga and the means by which they are seeking to work with resource management agencies to achieve the outcomes. One of the key sections, as relevant to this proposal, is on water quality. Central to the objectives and policies is the need to restore, maintain and protect the mauri of freshwater resources. More specifically the policies seek to adopt a catchment approach so that integrated management occurs, identify freshwater resources where the mauri is affected and unaffected and protect the opportunities for future use of freshwater resources.

Similarly *The Cry of the People Te Tangi a Tauira Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008* seeks to maintain the mauri of waterbodies, protect cultural values and uses and protect instream values (instream flora and fauna).

The stormwater treatment system uses grassed roadside swales and a pond to treat stormwater runoff. The stormwater runoff from the bridge will be treated using a treatment pond. It is considered that the design of the treatment system will hold low intensity and high intensity rainfall volumes.

In addition, the proposed alignment is considered to be a better outcome for the township of Beaumont township compared to the alternative alignments considered in the Detailed Business Case and discussed in Section 5 of this application. The proposed alignment provides the closest retainment of the existing route through Beaumont, has the least impact on properties and waterways and least potential adverse effects on the environment.

9.3.2 Other Statutory Approvals Required

Outline Plan

An Outline Plan in terms of Section 176A(3) of the RMA for the proposed works will be lodged following confirmation of the designation.

Heritage New Zealand Pouhere Taonga Act 2014

An authority from the Heritage New Zealand will be required to destroy, damage or modify archaeological sites that may be impacted by the project will be lodged following the confirmation of the alteration to designation.

9.4 RMA Part 2

In assessing the proposal against the need to meet the sustainable management of natural and physical resources sections 6 to 8 are assessed below with each analysis contributing to the final evaluation of section 5 – the Purpose of the RMA.

9.4.1 Section 6

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. Matters in Section 6 that are of relevance to the project are considered to include the following.

Section 6(a) of the RMA requires recognition and provision of *‘The preservation of the natural character of ...wetlands, and lakes and rivers and their margins and the protection of them from inappropriate subdivision, use and development’*.

The proposed alignment crosses over the Clutha River Mata-Au, downstream of the existing bridge. The riverbanks in this location will require earthworks and vegetation clearance to provide for the construction of bridge abutments and rock rip rap structures. Once the works are completed, the margins will be reinstated with appropriate landscaping.

Section 6(c) of the RMA requires the *‘protection of indigenous vegetation and significant habitats of indigenous fauna’*.

There are no areas of significant indigenous vegetation identified along the proposed alignment. As identified there is the potential for lizards to be present at the site. As such a lizard survey is being promoted as a pre-construction condition.

Section 6(d) of the RMA addresses the *‘maintenance and enhancement of public access to and along rivers’*. During construction there may be some restrictions on public access to and along the Clutha River Mata-Au particularly in relation to the ‘boat ramp’ area on the western bank downstream of the existing bridge. This is because the river access falls within the project area and a part of the western riverbank will be required as additional land for construction purposes, to eventually become State highway. Once works are completed, public access along the river will be maintained through the relocated western river access.

In regard to the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga (Section 6(e)), on-going consultation with Aukaha and Te Ao Marama will ensure that correct measures are implemented to avoid, remedy and mitigate any actual or potential effects on

tangata whenua. Further to this engagement is being undertaken to get feedback on some design aspects of the bridge to recognise the importance of the Mata-Au to Ngāi Tahu.

Under Section 6(f), historic heritage is to be protected from inappropriate use and development. There are no recorded archaeological sites within the project area. As such, the proposal will not impact on any recorded archaeological sites. However, an archaeological authority will be sought for physical works associated because of the potential for encountering unrecorded prehistoric archaeological sites. Earthworks will be covered by the Accidental Discovery Protocol (ADP) developed by the Transport Agency, Heritage NZ and Ngāi Tahu.

It is considered none of these Section 6 matters will be adversely affected by the proposal, based on the assessment of actual or potential effects of the proposal on the environment and the proposed mitigation measures.

9.4.2 Section 7

Section 7 of the RMA sets out those other matters that a consent authority is to have particular regard to in achieving the purpose of the RMA. Matters in Section 7 that may be of relevance to the proposal are considered to include the following.

The proposed mitigation measures in respect of cultural heritage and archaeology will help meet Section 7(a) of the RMA.

Section 7(b) requires a consideration of whether a proposal is an efficient use and development of natural and physical resources. A proposal may provide an efficient use of a resource, noting that the existing state highway is a physical resource, if it enables people to provide for their social and economic well-being but only to the extent that it: does not impair the social well-being and health of other people and the community; avoids, remedies, or mitigates adverse effects on the environment; and maintains and enhances amenity values and the quality of the environment. The proposal will contribute to the efficient use and development of the state highway network as a physical resource in the Clutha District and Otago Region, satisfying Section 7(b) of the RMA.

Considering the maintenance and enhancement of amenity values (Section 7(c)) and the maintenance and enhancement of the quality of the environment (Section 7(f)) requires an all-encompassing view of amenity and the environment. There will be some impacts on amenity and quality of the environment during construction. Post construction the environment would be different due to the presence of a new bridge structure, but it is not considered that there would be a significant adverse effect on the quality of the environment.

In having regard to the intrinsic values of ecosystems (Section 7(d)) it is necessary to consider the RMA definition of 'intrinsic values' being:

in relation to ecosystems, means those aspects of ecosystems and their constituent parts which have value in their own right, including—

(a) Their biological and genetic diversity; and

(b) The essential characteristics that determine an ecosystem's integrity, form, functioning, and resilience.

The ecological assessment report has considered the values and effects on the freshwater and terrestrial ecosystems. The proposed mitigation measures in respect of stormwater discharges and ESDCP will help avoid, remedy or mitigate adverse effects.

Section 7(g) requires a consideration of the finite characteristics of natural and physical resources. The proposed mitigation measures in respect of stormwater management and ecology will avoid, remedy or mitigate adverse effects.

It is considered none of these Section 7 matters will be adversely affected by the proposal, based on the assessment of actual or potential effects of the proposal on the environment and the proposed mitigation measures.

9.4.3 Section 8

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

The wording shall take into account requires decision makers to consider the principles of the Treaty with all other matters.

Ongoing consultation with Aukaha and Te Ao Marama will ensure that appropriate methods are implemented to avoid, remedy and mitigate any actual or potential effects on tangata whenua. Recommendations have been made to avoid remedy or mitigate adverse effects on tangata whenua values with specific measures having been adopted by the Transport Agency and /or incorporated into the project.

9.4.4 Section 5

Applying Section 5 involves an assessment of whether an application would promote the sustainable management of natural and physical resources. This recognises that the RMA has a single purpose.

Section 5 goes on to elaborate on the definition of sustainable management that in summary, includes managing resources in a way that enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety, while achieving specified bottom line environmental outcomes.

Case law has indicated that making a judgement under Section 5 is not a balancing exercise between positive and negative effects, that adverse effects must under section 5(2)(c) be avoided, remedied or mitigated, regardless of positive effects¹.

That is not to say however that adverse effects are not acceptable, rather it is a question of fact and degree. In this case, there will be positive benefits as the project will, for example:

- Achieve security of route
- Increase resilience and reliability of the State Highway network.
- Provide connectivity and predictable travel on the West Coast.
- Improve safety to road users.
- Improve load and traffic capacity of the crossing.

Significant regard has been given to the existing environmental values along the alignment route within the technical assessments. As a result, the proposal has been developed to ensure that where adverse effects

¹ NZ Rail Ltd v Marlborough DC [1994] NZRMA 70 (HC), Campbell v Southland DC W114/94 (PT).

cannot be avoided they have been adequately remedied or mitigated. Overall, it is considered that with the mitigation measures proposed, the proposal will achieve the purpose of the RMA.

10. Summary

The Transport Agency proposes to construct, use and maintain the new Beaumont Bridge and alignment. The bridge will essentially replace the existing Beaumont Bridge for general traffic use and become part of the existing SH8 network through the realigned bridge approaches. An alteration of designation is sought from Clutha District Council which will include the entire infrastructure of the alignment and areas needed for construction. Resource consents are also required from ORC and CDC.

The proposal will achieve the primary objective of the project being security of route within the Clutha District, improve efficiency, connectivity and accessibility, provide pedestrian and cycling facilities across the river and improve the load carrying capacity of the bridge.

The need for the proposed work has been outlined in the Notice of Requirement above and has been demonstrated as being reasonably necessary for the Transport Agency as the requiring authority to achieve its objectives. The extent of the proposed designation is considered reasonably necessary in order for the Transport Agency as the requiring authority to undertake the work.

Technical assessments have been undertaken and form part of this application. These technical assessments have identified where there is the potential for adverse effects to arise within the project area from construction works and operation of the bridge. Where adverse effects cannot be avoided, appropriate mitigation measures have been proposed in order to remedy or mitigate those effects.

The key RMA tests for consideration of both a notice of requirement and a resource consent, as contained in sections 171 and 104 RMA respectively, are assessed in Section 9 above. It is the conclusion of this assessment that the proposed designation and resource consent application meets the purpose and principals of the RMA.

The NZ Transport Agency requests these applications are publicly notified.

Appendix 1 Design Plans

Appendix 2 Designation Plan

Appendix 3 - Relevant Objectives and Policies

TABLE 1: REGIONAL POLICY STATEMENT FOR OTAGO 1998: PARTIALLY OPERATIVE AS OF 14 JANUARY 2019	
OBJECTIVE / POLICY	COMMENT
Chapter 5 - Land	
<p>Objective 5.4.1 To promote the sustainable management of Otago’s land resources in order:</p> <p>(a) To maintain and enhance the primary productive capacity and life-supporting capacity of land resources; and</p> <p>(b) To meet the present and reasonably foreseeable needs of Otago’s people and communities.</p>	<p>The proposal will result in the loss of some small areas of productive land in Beaumont. This land is required to construct the approaches to the new Beaumont Bridge to meet the needs of Otago’s people and communities. It should also be noted that some of the land that is currently highway will be returned to pasture post construction.</p>
<p>Policy 5.5.5 To minimise the adverse effects of landuse activities on the quality and quantity of Otago’s water resource through promoting and encouraging the:</p> <p>(a) Creation, retention and where practicable enhancement of riparian margins; and</p> <p>(b) Maintaining and where practicable enhancing, vegetation cover, upland bogs and wetlands to safeguard land and water values; and</p> <p>(c) Avoiding, remedying or mitigating the degradation of groundwater and surface water resources caused by the introduction of contaminants in the form of chemicals, nutrients and sediments resulting from landuse activities.</p>	<p>The proposal will also result in the loss of some small disturbance to riparian margins. These areas will be appropriately rehabilitated, where practicable following completion of the works. No significant indigenous flora has been identified in these areas.</p>
Chapter 6 - Water	
<p>Objective 6.4.2 To maintain and enhance the quality of Otago’s water resources in order to meet the present and reasonably foreseeable needs of Otago’s communities.</p>	<p>The proposal will result in some short term effects on water quality through the remobilisation of sediments associated with bed disturbance.</p>
<p>Objective 6.4.4 To maintain and enhance the ecological, intrinsic, amenity and cultural values of Otago’s water resources.</p>	<p>Stormwater from the project will be disposed of via roadside swales and as identified above stormwater from the bridge will be captured and discharged to land on the eastern bank of the river.</p>
<p>Objective 6.4.5 To avoid, remedy or mitigate degradation of water resources resulting from the use, development or protection of the beds and banks of Otago’s water bodies and of adjacent land areas.</p>	<p>Riparian vegetation disturbance will be kept to a minimum. It is also noted that no riparian vegetation of any significance has been identified at the site.</p>

<p>Policy 6.5.7 To maintain and where practicable enhance existing well vegetated riparian margins and, where necessary, to promote the creation of further such margins:</p> <p>(a) To provide for the preservation of the natural character of wetlands, rivers, lakes and their margins; and</p> <p>(b) To maintain and enhance water quality; and</p> <p>(c) To maintain and enhance ecological, amenity, intrinsic and habitat values; while considering the need to reduce threats posed by flooding and erosion.</p>	
<p>Chapter 10 - Biota</p>	
<p>10.4.1 To maintain and enhance the life-supporting capacity and diversity of Otago’s biota.</p>	<p>There will be some vegetation disturbance and removal to enable to project. None of this vegetation has been identified as being of significance. Additionally landscaping, including native plants is proposed as part of the overall project.</p>

TABLE 2: PARTIALLY OPERATIVE OTAGO REGIONAL POLICY STATEMENT 2019: APPEALS VERSION	
OBJECTIVE / POLICY	COMMENT
Chapter 1 – Resource Management in Otago is integrated	
Objective 1.13 - Otago’s resources are used sustainably to promote economic, social, and cultural wellbeing for its people and communities	<p>In order to ensure the economic and social wellbeing of Otago’s communities a new bridge across the Clutha River Mata-Au at Beaumont is required, which is the primary objective of the project.</p> <p>In undertaking the project, the Transport Agency had provided for the matters identified in (a) – (f) though incorporating feedback obtained through consultation, undertaking appropriate mitigation, and ensuring resilience and accessibility through the construction of a modern bridge over the Clutha River - Mata-Au.</p>
<p>Policy 1.1.21 - Social and cultural wellbeing and health and safety - Provide for the social and cultural wellbeing and health and safety of Otago’s people and communities when undertaking the subdivision, use, development and protection of natural and physical resources by all of the following:</p> <p>a) Recognising and providing for Kāi Tahu values;</p> <p>b) Taking into account the values of other cultures;</p> <p>c) Taking into account the diverse needs of Otago’s people and communities;</p> <p>d) Avoiding significant adverse effects of activities on human health;</p> <p>e) Promoting community resilience and the need to secure resources for the reasonable needs for human wellbeing;</p> <p>f) Promoting good quality and accessible infrastructure and public services.</p>	
PART B Chapter 2 Kāi Tahu values and interests are recognised and kaitiakitaka is expressed	
Objective 2.1 - The principles of Te Tiriti o Waitangi are taken into account in resource management processes and decisions.	<p>The Transport Agency have undertaken consultation with iwi through the phases of the project to date and this will continue as the project proceeds through detailed design (and the outline plan process in relation to the designation).</p> <p>The Transport Agency will to continue consultation with iwi to ensure the mauri of the Mata-Au is maintained as the project proceeds.</p>
Objective 2.2 Kāi Tahu values, interests and customary resources are recognised and provided for	
Part B – Chapter 3 – Otago has high quality natural resources and ecosystems	
Objective 3.1 The values (including intrinsic values) of Otago’s ecosystems and natural resources are recognised, and maintained, and or enhanced where degraded.	The values associated with ecosystems at the site have been assessed in the ecological assessment.

<p>Policy 3.1.2 Beds of rivers, lakes, wetlands, and their margins</p> <p>Manage the beds of rivers, lakes, wetlands, their margins, and riparian vegetation to:</p> <ul style="list-style-type: none"> a) Safeguard the life supporting capacity of fresh water; b) Maintain good quality water, or enhance it where it has been degraded; c) Maintain or enhance bank stability; d) Maintain or enhance ecosystem health and indigenous biological diversity; e) Maintain or enhance, as far as practicable: <ul style="list-style-type: none"> i. Their natural functioning and character; and ii. Amenity values; f) Control the adverse effects of pest species, prevent their introduction and reduce their spread; and, g) Avoid, remedy or mitigate the adverse effects of natural hazards, including flooding and erosion. 	<p>With regards to the matters identified in Policy 3.1.2 provided the proposed mitigation measures are implemented, the matters identified in (a) to (g) will be addressed. The proposal will result in some localised loss of riparian vegetation. There will be localised loss of natural character however in the context of the modified nature of the environment this is considered less than minor.</p> <p>Air quality will be managed through the implementation of a CEMP.</p>
<p>Policy 3.1.6 Air quality</p> <p>Manage air quality to achieve the following:</p> <ul style="list-style-type: none"> a) Maintain good ambient air quality that supports human health, or enhance air quality where it has been degraded; b) Maintain or enhance amenity values 	
<p>Part B – Chapter 4 – Communities in Otago are resilient, safe and healthy</p>	
<p>Objective 4.3 – Infrastructure is managed and developed in a sustainable way</p> <p>Policy 4.3.13 - Managing infrastructure activities</p> <p>Recognise and provide for infrastructure by all of the following:</p> <ul style="list-style-type: none"> a) Protecting and providing for the functional needs of lifeline utilities and essential or emergency services; b) Increasing the ability of communities to respond and adapt to emergencies, and disruptive or natural hazard events; c) Improving efficiency of natural and physical resource use; d) Minimising adverse effects on existing land uses, and natural and physical resources; e) Managing other activities to ensure the functional needs of infrastructure are not compromised. 	<p>The existing bridge is obviously requiring replacement and therefore NZTA as managing the State highway network in a sustainable manner seeks to construct a new bridge.</p> <p>In the construction and ongoing management of the new bridge NZTA will have regard to the matters identified in Policy 4.3.13 particularly (a) and (d).</p> <p>As being infrastructure of regional significance it is important to recognise the need for this infrastructure balanced with managing the adverse effects of the infrastructure. The Transport Agency has achieved as appropriate balance in this regard through the provision of a new bridge, coupled with appropriate mitigation measures.</p>

<p>Policy 4.3.2 - Nationally and regionally significant infrastructure</p> <p>Recognise the national and regional significance of all of the following infrastructure:</p> <ul style="list-style-type: none"> a) Renewable electricity generation activities, where they supply the, National Grid and or local distribution network; b) National Grid; c) Electricity sub-transmission infrastructure; d) Telecommunication and radiocommunication facilities; e) Roads classified as being of national or regional importance; f) Ports and airports and associated navigation infrastructure; g) Defence facilities; h) Rail infrastructure Structures for transport by rail.; i) Municipal infrastructure. <p>Policy 4.3.4 Adverse effects of nationally and regionally significant infrastructure</p> <p>(1) Minimise Manage adverse effects from of infrastructure that has national or regional significance, by all of the following:</p> <ul style="list-style-type: none"> a) Giving preference to avoiding its location in all of the following: <ul style="list-style-type: none"> i. Areas of significant indigenous vegetation and significant habitats of indigenous fauna in the coastal environment; ii. Outstanding natural features, landscapes and seascapes; iii. Areas of outstanding natural character; ii. Outstanding natural character in the coastal environment; iii. Outstanding natural features and natural landscapes, including seascapes, in the coastal environment; iv. Areas of significant indigenous vegetation and significant habitats of indigenous fauna beyond the coastal environment; v. Outstanding natural character in areas beyond the coastal environment; vi. Outstanding natural features and landscapes beyond the coastal environment; 	
--	--

<p>viiiv. Outstanding water bodies or wetlands; viii. Places or areas containing significant historic heritage of regional or national significance.</p>	
<p>Part B Chapter 5 – People are able to enjoy Otago’s natural and built environment</p>	
<p>Policy 5.1.1 Public access Maintain and or enhance public access to the natural environment, including to the coast, lakes, rivers and their margins, and where possible areas of cultural or historic significance, unless restricting access is necessary for one or more of the following: a) Protecting public health and safety; b) Protecting the natural heritage and ecosystem values of sensitive natural areas or habitats; c) Protecting identified sites and values associated with historic heritage or cultural significance to Kāi Tahu; d) Ensuring a level of security consistent with the operational requirements of a lawfully established activity.</p>	<p>Whilst there will be some localised necessary restrictions on public access to the bed of the Clutha River Mata-Au during construction for health and safety reasons on completion of the project this will be restored.</p>
<p>Objective 5.4 Adverse effects of using and enjoying Otago’s natural and physical resources are minimised</p>	
<p>Hazardous Substances</p>	
<p>Objective 15.2.1 – To ensure that the adverse effects from the discharge of hazardous substances into or onto land, on water and soil quality, social, cultural, and amenity values, indigenous flora and fauna, and human health are avoided, remedied or mitigated.</p>	<p>Mobile fuel tanks will be stored on site for refuelling purposes of machinery. Mitigation measures will be put in place to avoid spillage and leakage of fuel tanks and mitigate any effect on water quality, soil quality and aquatic ecosystems.</p>
<p>Policy 15.3.1 – To avoid inappropriate disposal or discharge of hazardous substances to land.</p>	

TABLE 3: REGIONAL PLAN: WATER FOR OTAGO	
OBJECTIVE / POLICY	COMMENT
Chapter 5 – Natural and Human Use Values of Lakes and Rivers	
Objective 5.3.1 To maintain or enhance the natural and human use values, identified in Schedules 1A, 1B and 1C, that are supported by Otago’s lakes and rivers.	<p>The proposed mitigation measures will ensure the natural and human use values, and schedule 1D matters of the Clutha River Mata-Au are maintained.</p> <p>As identified above the site is of low natural character (aside from the river itself) and it is not considered the activity is an inappropriate use in the location.</p> <p>Public access to the river will be disrupted in a localised manner during construction, however existing levels of access will be restored on completion of the project.</p>
Objective 5.3.2 To maintain or enhance the spiritual and cultural beliefs, values and uses of significance to Kai Tahu, identified in Schedule 1D, as these relate to Otago’s lakes and rivers.	
Objective 5.3.3 To protect the natural character of Otago’s lakes and rivers and their margins from inappropriate subdivision, use or development.	
Objective 5.3.5 To maintain or enhance public access to and along the margins of Otago’s lakes and rivers.	
Chapter 7 Water Quality	
Objective 7.A.1 To maintain water quality in Otago lakes, rivers, wetlands, and groundwater, but enhance water quality where it is degraded.	<p>Water quality at the site will be largely maintained through both the construction stages of the project, particularly having regard to the relatively small amounts of bed disturbance in the context of the large active bed. It is also noted upon completion of piling the majority of construction activity will be able to be undertaken out of the wet bed.</p>
Objective 7.A.2 To enable the discharge of water or contaminants to water or land, in a way that maintains water quality and supports natural and human use values, including Kāi Tahu values.	
Policy 7.B.3 Allow discharges of water or contaminants to Otago lakes, rivers, wetlands and groundwater that have minor effects or that are short-term discharges with short-term adverse effects.	
<p>7.C.2 When considering applications for resource consents to discharge contaminants to water, or onto or into land in circumstances which may result in any contaminant entering water, to have regard to:</p> <p>(a) The nature of the discharge and the sensitivity of the receiving environment to adverse effects;</p> <p>(b) The financial implications, and the effects on the environment of the proposed method of discharge when compared with alternative means; and</p> <p>(c) The current state of technical knowledge and the likelihood that the proposed method of discharge can be successfully applied.</p>	

Chapter 8 – The Beds and Margins of Lakes and Rivers	
<p>Objective 8.3.1 To maintain:</p> <p>(a) The stability and function of existing structures located in, on, under or over the bed or margin of any lake or river;</p> <p>(b) The stability of the bed and bank of any lake or river; and</p> <p>(c) The flood and sediment carrying capacity of any lake or river.</p>	<p>The project will not give rise to any adverse effects on the stability of existing structures or river banks. The effects on flood carrying capacity have been assessed in the hydraulic assessment and have been found to be negligible.</p> <p>Water clarity will be largely unaffected noting the identification in the ecological report of low water clarity existing in the Clutha River Mata-Au.</p>
<p>Objective 8.3.2 To minimise reduction in water clarity caused by bed disturbance.</p>	
<p>Policy 8.6.1 In managing the disturbance of the bed or margin of any lake or river, to have regard to any adverse effect on:</p>	
TABLE 4: REGIONAL PLAN: WASTE FOR OTAGO	
OBJECTIVE / POLICY	COMMENT
Chapter 5 – Contaminated Sites	
<p>Objective 5.3.1 To avoid, remedy or mitigate any adverse effects of contaminated sites.</p>	<p>Whilst contaminated land will be disturbed as part of the project, appropriate investigations have been undertaken and determined the disturbance is highly unlikely to pose a risk to human health.</p>
<p>Policy 5.4.3 To contain contaminated sites and rehabilitate them to the extent that is practicable having regard to the use to which the land is to be put.</p>	

TABLE 5: OPERATIVE CLUTHA DISTRICT PLAN	
OBJECTIVE / POLICY	COMMENT
Section 3.3 Transportation	
Objective TRAN.1 - To achieve and maintain appropriate public safety levels in respect of the District transportation network.	<p>The project has been designed in accordance the Transport Agency safety requirements, and has been designed, and will be constructed in accordance with Transport Agency standards.</p> <p>In undertaking the design of the project the Transport Agency has sought to ensure that adverse effects on the environment are avoided, remedied or mitigated as discussed above in Section 8.</p>
Objective TRAN.3 - To maintain the amenity values of the District, while enabling the continual development and upgrading of the transportation network.	
Policy TRAN.7 - To manage the transportation network and its development and maintenance to ensure that adverse effects on the environment are avoided, remedied or mitigated.	
Policy TRAN.9 - To require that new roads and access points be constructed to a standard appropriate to their intended use, and that the adverse effects of maintenance, upgrading and construction be avoided, remedied, or mitigated.	
Section 3.5 Heritage	
Objective HER.1 - To recognise the importance of, and provide for the appropriate protection, conservation, use and where possible, enhancement of the District’s natural, built, and cultural heritage resources.	<p>As identified above, there will be some trimming of trees that are identified as heritage items in the Clutha District Plan. This will be done under appropriate supervision to ensure it is undertaken in an appropriate manner.</p> <p>The other item of heritage value at the site – the existing Beaumont bridge is proposed to be retained.</p>
Policy HER.4 - To conserve the heritage values of those buildings and structures, identified in the Register of Heritage Items contained in Table 13.1.	
Section 3.6 Water	
Objective WAT.3 – Environment - To ensure that structures erected and activities carried out upon the waters surface or within the margins of the Districts waterbodies, avoid, remedy or mitigate adverse effects on the environment, particularly the natural character of the Districts waterbodies and their margins.	<p>The proposal will result in some localised loss of riparian vegetation. There will be localised loss of natural character however in the context of the modified nature of the environment this is considered less than minor.</p>
<p>Policy WAT.4</p> <p>To ensure structures, land use, and water surface activities avoid, remedy, or mitigate any adverse effects that they may have on the aesthetic and ecological values (including indigenous vegetation and habitats of indigenous fauna) of the Districts waterbodies and their margins.</p>	

Section 3.13 Noise	
Objective NSE.1 - To protect the Districts amenity values and the wellbeing of the Districts people from the adverse effects of noise.	As identified above there will be some noise generated by the project particularly during construction. Having identified that some of these noise levels will be elevated during construction, and what that likely level is, the Transport Agency will require a Construction Noise and Vibration Management Plan to be developed and implemented by the contractor, to ensure these effects are appropriately mitigated.
Policy NSE.1- To mitigate the adverse effects of noise on (i) The well-being of the people of the District; and (ii) The amenities of the District.	
Section 4.1 Rural Resource Area	
Policy RRA.4 - To ensure that the adverse effects land use activities can have on the water quality within the Districts waterbodies are avoided, remedied or mitigated by requiring the use of buffer zones or similar management methods.	Water quality at the site will be largely maintained through both the construction stages of the project, particularly having regard to the relatively small amounts of bed disturbance in the context of the large active bed. It is also noted upon completion of piling the majority of construction activity will be able to be undertaken out of the wet bed.
Policy RRA.5 To ensure that the use, development and/or protection of land within riparian margins is managed so as to avoid, remedy or mitigate adverse effects on waterbodies including the effects of <ul style="list-style-type: none"> · reducing bank stability · increasing nutrient and sediment loadings · reduction in habitat quality 	
Section 4.6 Rural Settlements	
Objective RST.1 - To maintain the low density and quiet amenity values of rural settlements.	The proposal will not increase the density of the Beaumont community. As identified, there will, particularly during construction, be some changes to the noise environment in the location. Noise and vibration will be managed through a construction noise and vibration management plan, once the proposed construction methodology is known.
Policy RST.3 - To avoid, remedy or mitigate the adverse effects that activities can have on the amenity values of rural settlements.	

Appendix 4 Proposed Conditions

Proposed Consent Conditions (Otago Regional Council)

Resource Consent No	Type of resource consent	Activity/Location
	Land Use Consent	Earthworks and vegetation clearance in riparian margins, earthworks and the excavation of land and deposition of material in areas where excavation has occurred
	Land Use Consent	Erection of structures and associated bed disturbance of the Clutha River Mata-Au
	Water Permit	To temporarily divert water associated with bridge construction and deconstruction works
	Water Permit	To permanently divert the Clutha River Mata-Au
	Discharge Permit	To discharge contaminants to land associated with construction works
	Discharge Permit	To discharge contaminants to water associated with bridge construction and deconstruction works

PROPOSED CONDITIONS APPLYING TO ALL REGIONAL COUNCIL CONSENTS

1. The works shall be carried out in general accordance with the details contained in the consent application submitted to the Consent Authority, except where inconsistent with these conditions.
2. The Consent Holder shall supply any agent or contractor working under these consents with a copy of the consents.
3. Any person working under these consents shall have a copy of the consent conditions on site and present it to an officer of the Consent Authority upon request.
4. All activities under these consents shall generally be undertaken at the location identified and in accordance with the site plans attached and any more detailed plans developed as part of the Construction Environmental Management Plan (CEMP).
5. All equipment refuelling, lubrication, mechanical repairs and storage of fuels shall be undertaken in an area that provides sufficient mitigation measures to ensure that no spillages onto the land surface or into water occur. No refuelling or lubrication shall be undertaken within the bed of the Clutha River Mata-Au, with the exception of equipment that is required to be located in the bed of the river for an extended period and is not practically moveable, including equipment located on temporary staging. For this equipment refuelling, lubrication and mechanical repairs within the bed of the river will be kept to a minimum as far as practicable and mitigation measures specified in the CEMP (Hazardous Substances/Spill Contingency Procedures) will be put in place.
6. The Consent Holder shall ensure that all machinery is cleaned in accordance with Biosecurity New Zealand’s hygiene procedures before entering water to minimise the entry of petroleum products, other contaminants and/or pest plants/weeds including didymo.

Advice note: You can access the most current version of these procedures from the Biosecurity New Zealand website <http://www.biosecurity.govt.nz>

7. All practicable measures shall be undertaken to prevent sediment from entering water including, but not limited to:

- a. establishing sediment controls prior to the onset of works and maintaining them in place until disturbed areas are stabilised;
 - b. stabilisation of disturbed areas as soon as practicable following the works;
 - c. no washing down of plant shall where sediment may enter any waterbodies.
8. The Consent Holder shall submit a Construction Environmental Management Plan (CEMP) to the Consent Authority at least ten working days prior to the commencement of the construction activities, outlining all practices and procedures to be adopted in the construction of the road bridge and bridge approaches. The submission of the CEMP, including any amendments, to the Consent Authority shall be for the purpose of information, assurance and to enable comment from the Consent Authority on the proposed management practices and procedures.
9. The CEMP shall contain as a minimum the following information:
- a) An Erosion, Sediment and Dust Control Management Plan;
 - b) A Hazardous Substances/Spill Contingency Procedure;
 - c) Bridge Construction Management Plan;
10. The CEMP shall detail, as a minimum, how the following objectives shall be achieved for the duration of the consents:
- a) The practices and procedures to be adopted to achieve compliance with the conditions of these consents;
 - b) How any adverse effects of construction activities will be avoided or mitigated;
 - c) How the discharge of sediment during the earthworks will be avoided or mitigated; and
 - d) How the disturbance of the riverbed and riparian margins of the Clutha River Mata-Au will be limited to the extent necessary to undertake construction works and avoid or mitigate adverse effects on the quality and flow of surface water and aquatic habitats.
- Advice Note: In the event of any conflict between the conditions of these consents and the CEMP practices and procedures, the resource consent conditions shall take precedence.*
11. The Bridge Construction Management Plan shall include, but not be limited to the following:
- a) details of the specific bridge construction contractors and contact details;
 - b) the proposed bridge construction methodology and programme;
 - c) details of any temporary access staging required for bridge construction works;
 - d) methods for managing any concrete pours and potential spillages during the bridge construction works;
 - e) flood contingency measures; and
 - f) methods for managing any potential impacts upon river users.
12. Pursuant to section 128 of the resource management act 1991, the consent authority may review the conditions of these consents by serving notice within a one month period of each anniversary of the date of commencement of the consents for any of the following purposes:
- a) to deal with any adverse effect on the environment which may arise from the exercise of these consents and which it is appropriate to deal with at a later stage.
 - b) to require the consent holder to adopt the best practicable option to remove or reduce any adverse effect on the environment.

To disturb the bed of Clutha River Mata-Au associated with construction and discharge contaminants to water

13. The Consent Holder shall maintain fish passage for the duration of the works.

14. Any sediment discharges associated with disturbance of the riverbed shall not give rise to any conspicuous change in the colour or visual clarity of the waters in the river, beyond the timeframe of works taking place in the active watercourse.
15. Any material excavated from the bed for the construction of temporary staging or new bridge piles shall be captured and removed from the wet bed.
16. The Consent Holder shall ensure that the site is restored on completion of the physical works as follows:
 - (a) The banks are left in a stable condition and exposed soil areas not being used for the ongoing operation of the road bridge and shall be revegetated as soon as practicable after the completion of the construction works;
 - (b) All rubbish, left over materials and debris are removed from site and disposed of in a legal manner;
 - (c) All equipment and signs associated with the construction works are removed; and
 - (d) Any disturbed areas of the river bed are reshaped to a natural form.

To temporarily divert water associated with bridge construction works

17. The Consent Holder shall ensure that the temporary diversion does not:
 - a) Cause or exacerbate flooding of another person's property, erosion, land instability, sedimentation or property damage;
 - b) Leave any fish stranded.

PROPOSED CONDITIONS APPLYING TO THE CDC RESOURCE CONSENTS

1. The works shall be carried out in general accordance with the details contained in the Resource Consent Application submitted to the Consent Authority, except where inconsistent with these conditions.
2. Any trimming of Significant Trees H80D, H80E and H80F shall be undertaken under the supervision of a suitably qualified arborist.
3. Prior to construction works commencing, plans and specifications for any road construction activity to be undertaken on Clutha District Council's roading network must be provided to Council's Group Manager Service Delivery for certification.
4. The Consent Holder shall submit a Construction Environmental Management Plan (CEMP) to the Consent Authority at least ten working days prior to the commencement of the construction activities, outlining all practices and procedures to be adopted in construction of the works. The submission of the CEMP, including any amendments, to the Consent Authority shall be for the purpose of information, assurance and to enable comment from the Consent Authority on the proposed management practices and procedures.
5. The CEMP shall contain as a minimum the following information:
 - a) An Erosion, Sediment and Dust Control Management Plan;
 - b) A Hazardous Substances/Spill Contingency Procedure;
 - c) Construction Noise and Vibration Management Plan.
6. The CEMP shall detail, as a minimum, how the following objectives shall be achieved for the duration of the consents:
 - a) The practices and procedures to be adopted to achieve compliance with the conditions of these consents;
 - b) How any adverse effects of construction activities will be avoided or mitigated;
 - c) How the discharge of sediment during the earthworks will be avoided or mitigated; and

- d) How noise and vibration effects from the construction works will be avoided or mitigated.

Advice Note: In the event of any conflict between the conditions of these consents and the CEMP practices and procedures, the resource consent conditions shall take precedence.

PROPOSED CONDITIONS APPLYING TO THE ALTERATION OF DESIGNATION

1. The works shall be carried out in general accordance with the details contained in the Alteration to Designation Application submitted to the Consent Authority, except where inconsistent with these conditions.
2. The Consent Holder shall submit a Construction Environmental Management Plan (CEMP) to the Consent Authority at least ten working days prior to the commencement of the construction activities, outlining all practices and procedures to be adopted in construction of the works. The submission of the CEMP, including any amendments, to the Consent Authority shall be for the purpose of information, assurance and to enable comment from the Consent Authority on the proposed management practices and procedures.
3. The CEMP shall contain as a minimum the following information:
 - a) An Erosion, Sediment and Dust Control Management Plan;
 - b) A Hazardous Substances/Spill Contingency Procedure;
 - c) Construction Noise and Vibration Management Plan.
 - d) The results of a lizard survey undertaken to confirm the presence, or otherwise, of native lizards.
4. The CEMP shall detail, as a minimum, how the following objectives shall be achieved for the duration of the construction activities:
 - a) How any adverse effects of construction activities will be avoided or mitigated.
 - b) How the discharge of sediment during the earthworks will be avoided or mitigated.
 - c) How noise and vibration effects from the construction works will be avoided or mitigated.
 - d) If the lizard survey required by condition 3 above identifies the presence of lizards, a description of the methodology for survey, trapping and relocation of lizards.

Appendix 5 Technical Reports

A - Ecology Report

B - Preliminary Site Investigation

C - Hydraulic Report

D - Hydrology Report

E - Archaeological Assessment

F - Noise and Vibration Assessment