NZ TRANSPORT AGENCY
WAKA KOTAHI

Gravel Extraction: Whitestone River Bridge SH 94

Application for Permissions from DOC for activities over Public Conservation Land

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Quality Assurance Statement

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Revision Schedule

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Contents

1. Introduction

State highway 94 (SH 94) is the principal road link between Te Anau and Fiordland National Park, including Milford Sound/Piopiotahi, that also connects to the wider Central Otago and Southland regions. During 2010 and 2013, Waka Kotahi NZ Transport Agency has undertaken several remedial actions after successive washouts of the riverbanks at the Whitestone River (SH 94) bridge. Historically, gravel has been extracted by private contractors downstream of the site and that has assisted in the migration of material away from the Whitestone River (SH 94) bridge. With the commercial gravel extraction activities no longer occurring the build-up of gravel at the bridge site is becoming more evident and is starting to impact on the carrying capacity of the river during flood events.

Figure 1: Photo of Whitestone River (SH 94) Bridge Washout taken April 2010.

Figure 2: Photo of Whitestone River (SH 94) Bridge Washout taken January 2013

Waka Kotahi is a Crown entity with its objective, functions, powers and responsibilities set out in the Land Transport Management Act (2003) and the Government Roading Powers Act (1989). Waka Kotahi is also a requiring authority under Section 167(3) of the RMA. Waka Kotahi take an integrated approach to transport planning, funding and delivery that includes as one of its roles the construction, operation and maintenance of state highways.

Waka Kotahi consider that if no appropriate action is undertaken, the potential for a high flow event to have an adverse effect on the Whitestone River (SH 94) bridge (i.e. washout) will increase. Waka Kotahi therefore, consider that the permission application to the Department of Conservation (DOC) for the proposed works within the adjacent marginal strip at this bridge site are necessary to fulfil its legal responsibilities under Land Transport Management Act (2003). The proposed activity also protects other key infrastructure (e.g. fibre optic cable) that use the Whitestone River (SH94) bridge as a conduit across the river, which have all been washed out and temporarily disconnected in past flood events.

Waka Kotahi holds a resource consent for bridge maintenance activities, including works on the bridge structure and piers in the bed of the river, and erosion protection structures installation and maintenance at the bridge (ES Permit 201872). Waka Kotahi obtained land use consent to extend the groynes further across the bed of the Whitestone River (ES Permit AUTH-20146812-01-V1). However, the existing (and lapsed AUTH-20146812.01 V1) resource consent does not authorise any gravel extraction by Waka Kotahi from the bed of this river for purposes of flood or erosion protection andno approvals been obtained from DOC for access and gravel extraction activities within this section of marginal strip.

Figure 3: Photo of Erosion Protection Groynes and Bridge Washout Reclamation Constructed 2010.

This report and the supporting resource consent application (ref: 20202169) includes a comprehensive and integrated assessment of environmental effects, which addresses all aspects relevant to the consideration and determination of the application for permissions from DOC for the proposed works under the Conservation Act 1987. Note: The resource consent application (ref. 20202169) lodged with Environment Southland is included in Appendix 1 as supporting information for this application.

2. Purpose and Scope of Applications

Part of the proposed works are located within the DOC Marginal Strip shown in Figure 5. Waka Kotahi is therefore seeking the following permissions from the DOC:

(a) A Long -Term Concession under Form 7a "Other" for gravel extraction activities within a Marginal Strip;

This report provides the necessary supporting information required for the Concession under the Conservation Act 1987.

3. Description of the Activity

Waka Kotahi propose to extract gravel from the bed of the Whitestone River, in any aggraded area within an area 350 metres upstream and 380 metres downstream of the centerline of the Whitestone River (SH 94) bridge. This activity is to be undertaken within the proposed gravel extraction area shown in Figure 5 of this application.

The intent of the proposed gravel extraction activity is to protect the bridge from flooding and damage from erosion that results from ongoing bed aggradation. The proposed gravel extraction activity is to allow the river to flow across the entire bed width of the river. This will avoid gravel build-up at the bridge which forces the water flow into the bridge. The activity also includes associated vegetation removal, bed disturbance, machinery access, sediment release and flood debris removal adjacent to the bridge.

Figure 5 shows the extent of the proposed gravel extraction area which is approximately 26,150m^3 in area. The volume of the proposed amount of gravel extraction is estimated at 26,000m^3.This is based on the approximate size of the extraction area of 26,000m^2 x 1.0 metre depth. The exact amount removed will be determined by the conditions within the river and the rate of aggradation.

The river in this location is typically a single channel which carries very low flows in summer periods. It is expected that at the time of extraction, the river flow will be occupying the lowest part of the riverbed. It is unlikely that gravel will be removed from flowing water within the channel. However, some extraction from the wet bed may be required where the build-up presents a risk to the bridge or groynes (i.e. under the bridge or immediately adjacent to the groynes).

The maximum depth of extraction will depend on the build-up of material but will be no lower than 300mm above surface water level. The exception to this is within 100 metres up / downstream of the centreline of the Whitestone River bridge where material will be removed in accordance with the riverbed levels at the time of the bridge construction shown in Figure 6.

All gravel extracted from the bridge site will be undertaken by a Waka Kotahi approved Contractor. The gravel will be removed from the bridge site by the Contractor and will not be on-sold for a profit or used by Waka Kotahi for its project works.

4. Site Description

4.1 Whitestone River (SH 94) Bridge

The Whitestone River (SH 94) bridge is located 7.5km southeast of Te Anau and 60km northwest of Mossburn (Figure 4). The New Zealand Map Grid reference for the Whitestone River Bridge (SH 94) is N5514555.0 and E2102585.0. The New Zealand Mercator Projection is N4952622.5 and E1192565.0.

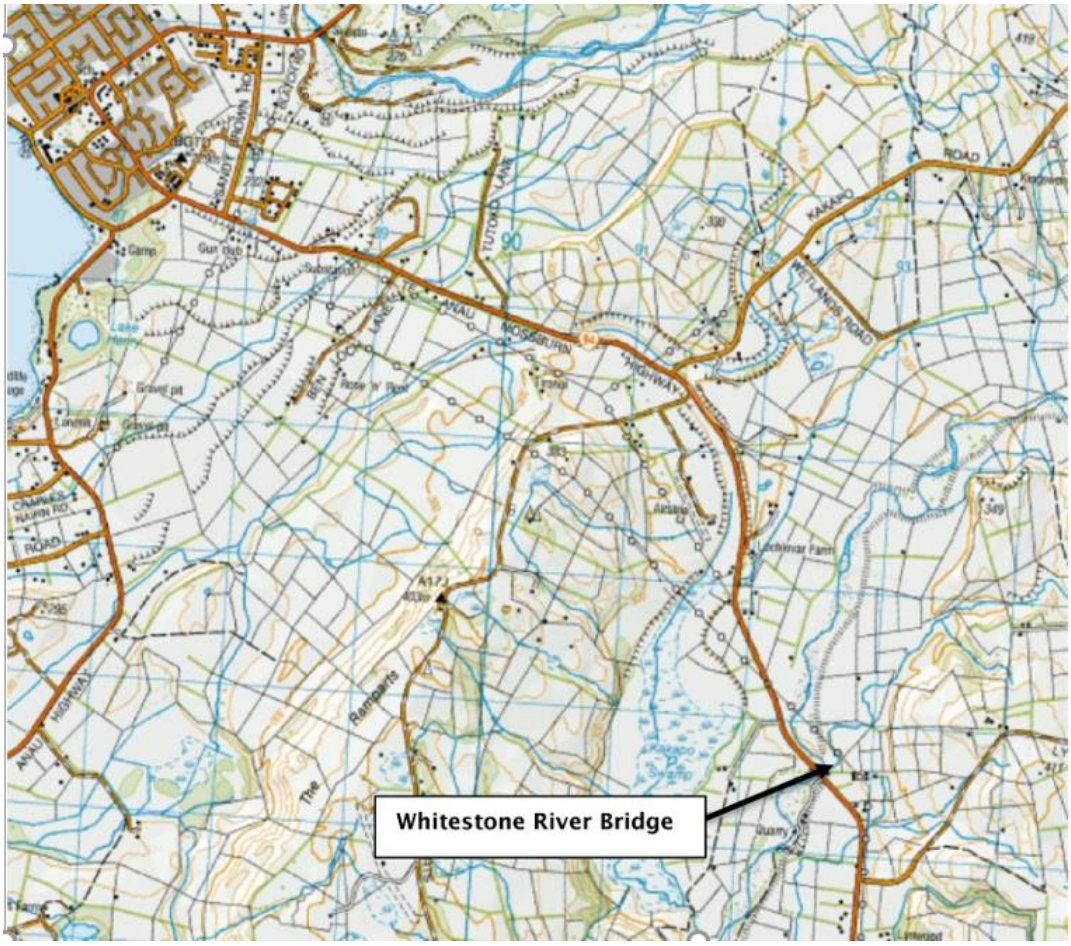


Figure 4: Location of the Whitestone River (SH 94) Bridge

4.2 DOC Marginal Strip

Waka Kotahi are seeking permission to access and extract gravel from the Marginal Strip within the Whitestone River. The Proposed Gravel Extraction Area is partly located with the marginal strip (DOC) and riverbed (Crown) as shown in Figure 5 below.

The Whitestone River is a dynamic system and the course of this river may change over time depending on its flow characteristics. As a result, the exact location of the gravel extraction activities is reliant on where the build-up of gravel causes a flood or erosion risk to the bridge structure at any given time. The purpose of the proposed gravel extraction area is to set out limits as to where the works are to occur within the marginal strip and riverbed. This area is specified as 350 metres upstream and 380 metres downstream of the Whitestone River bridge centreline and covers an area of approximately 26,150m^2 in size.

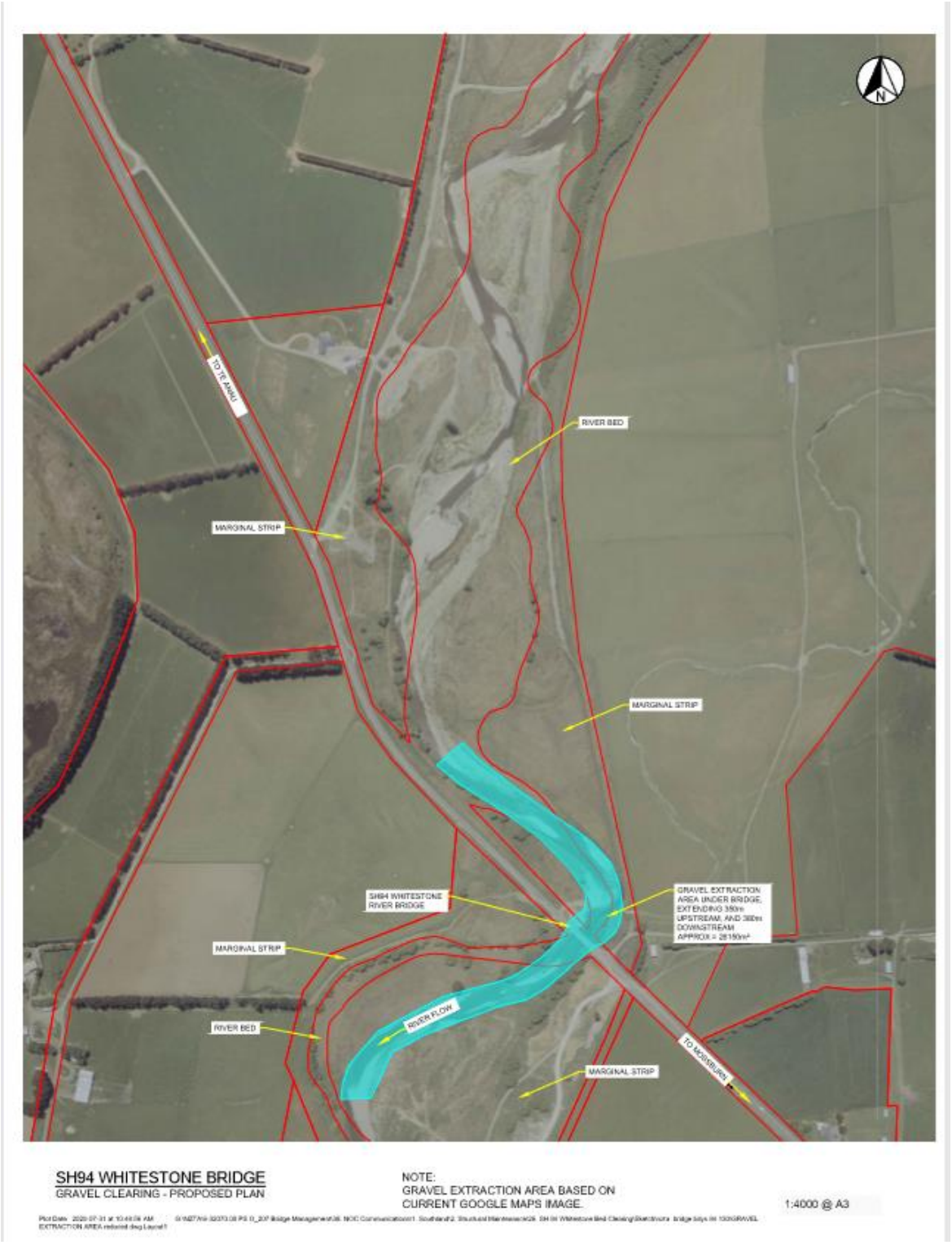
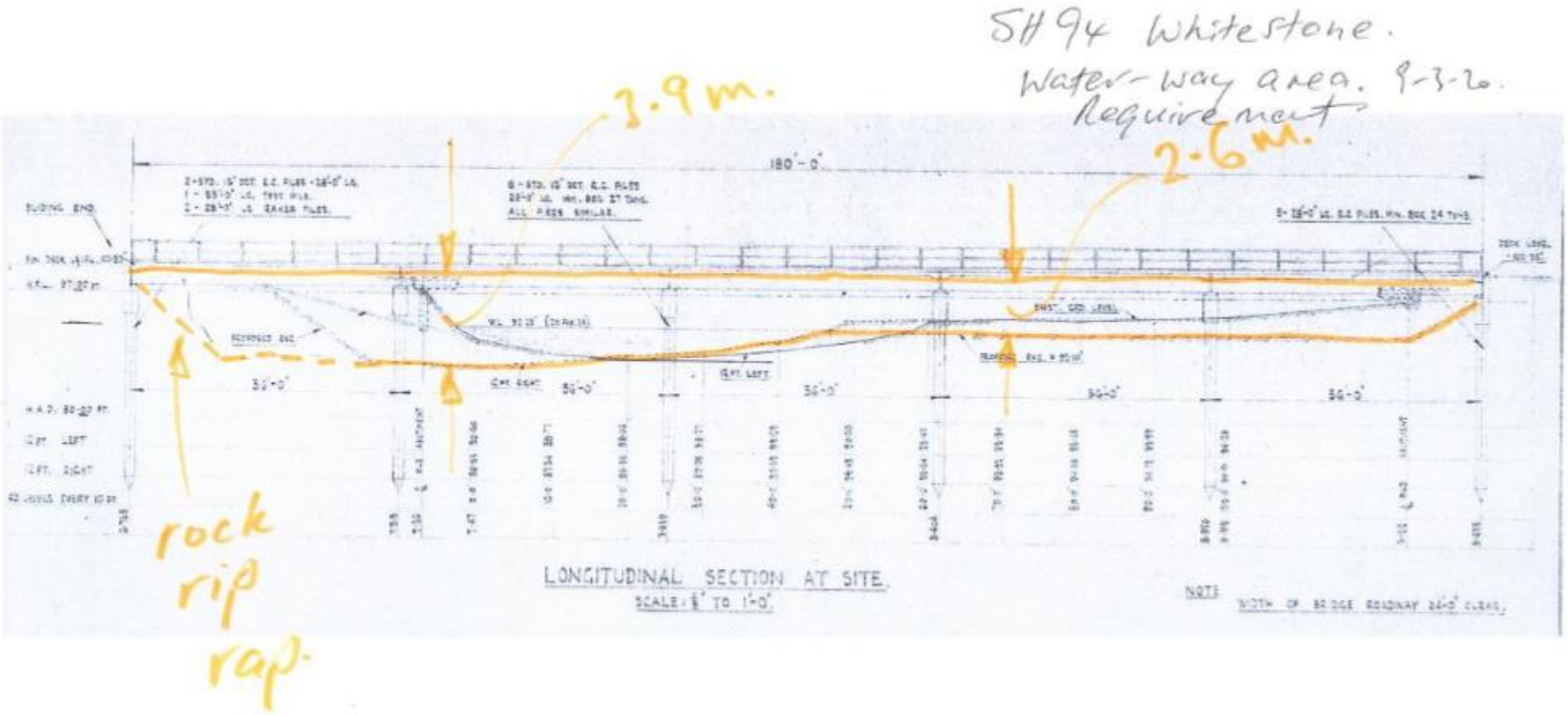


Figure 5: Plan of the Proposed Gravel Extraction Area at the Whitestone River (SH 94) Bridge (refer Appendix 2)

Figure 6: Cross Sections of Gravel Removal in the Riverbed



Above: Cross section at existing bridge showing desired bed level (orange line)

4.3 Whitestone River System

The Whitestone River originates from the southern-most reaches of the Livingstone Mountains in northern Southland. The river flows southwards to its confluence with the Mararoa River (approximately 8km south of the Whitestone River bridge). SH 94 crosses the Whitestone River 7.5km southeast of Te Anau and 60km northwest of Mossburn. The Whitestone River is typical of rivers located within the Te Anau basin, featuring an active gravel bed brought about by the steep upper catchment, high bed material load and high flow velocity.

4.4 Land Use at Whitestone River Bridge Site

The land surrounding the Whitestone River is primarily used for pastoral farming. The margins of the bed at the bridge are characterised by a grassed bank, shallow flow and gravel beaches. There are two access tracks on the true left bank bridge margins: one to the former McGregor contracting activity south of the bridge and one to an existing farming activity upstream of the bridge. There are further existing access tracks on the north side of the bridge from SH 94. The bridge is located on SH 94 which is owned by the Crown and managed by Waka Kotahi.

4.5 Geology

The geology of the Southland region has been mapped at a 1: 250,000 scale by the New Zealand Geological Survey (INZGS, 1981) and at a 1: 250,000 scale by the Institute of Geological and Nuclear Sciences (IGNS, 2002). The Murihiku geological map covers 18,000km^2 of South Otago and Southland. The geology of this area is described in the QMAP text for Murihiku as being flat to gently rolling terrain between Aparima, Oreti and Mataura Rivers, known as the Southland and Waimea Plains. The terrain is comprised of Quaternary alluvial plains and terraces built of gravel derived from the Paleozoic and Mesozoic rocks of the river catchments.

The braided or semi-braided riverbeds within the Southland region are therefore alluvial outwash plains that have formed during these glacial periods. Braided or semi-braided riverbeds within this part of Southland typically carry high sediment loads, contain mobile channels with a gravel flood plain. The variable flow characteristics of these rivers results in the formation of gravel beaches, bars, runs, riffles and backwaters. The channels can also branch and rejoin creating a pattern of low islands and shallow bars within the river system.

5. Duration and Term

5.1 Term of Concession

The term of the concession sought for the proposed gravel extraction is for **25 years.** The term is consistent with the application for resource consent lodged with Environment Southland (RC application 2020-2169) for this proposed activity. The term of the concession is deemed necessary to provide for the long-term protection of regionally significant infrastructure against damage cause by flooding and erosion, resulting from the ongoing build-up of gravel at the bridge site.

5.2 Duration of Concession

The timing and duration of the proposed gravel extraction will be in summer during typically low river flow periods and generally outside of the trout spawning period (1 May – 20 November). However, this is dependant to a degree on when flood events occur which may deposit gravel/material that subsequently requires removal. The duration of the proposed work is expected to be two to five days (initial establishment until completion) and the gravel extraction activity may occur up to three times per annum. Waka Kotahi intends to restrict works during the period of 23 December to 10 January to avoid conflict with heavier summer traffic volumes and recreational activities near the site.

6. Proposed Works

The overall design of the proposed works is generally dictated by the level of gravel that has built up in the riverbed and as a result, the proposed works are responsive. In this regard, the amount of gravel extracted from the river bed is to be determined (up to the level stated in Section 3 of this application) based on an assessment of the existing depth and area of gravel requiring removal in order to retain the necessary freeboard at the Whitestone River (SH 94) bridge and to remove the risk of the material in the river upstream aggrading at the bridge. The methodology for the proposed works within the Marginal Strip is outlined below:

- Establish a sloped access ramp (if required) to the bed from the upstream or downstream access tracks by the movement of gravel by excavator. The grade of the access ramp will be dependent on the slope of the riverbank to enable the safe movement of an excavator.
- Undertake gravel removal by excavator. This will include the removal of any vegetation or vegetation flood debris necessary for gravel extraction. Only small / low growing colonised plants are to be removed from the riverbed.
- Gravel will be loaded onto a truck for removal;
- The excavated gravel will be skimmed from beaches as opposed to large pits or holes;
- The maximum depth of extraction will depend on the build-up of material but will be excavated no deeper than 300mm above surface water level. The exception to this is within 100 metres up/downstream of the centreline of the Whitestone River bridge where material will be removed in accordance with the riverbed levels at the time of the bridge construction shown in Figure 6;
- It is anticipated that no gravel will be extracted from the wet bed unless where the build-up presents a risk to the bridge of groynes (i.e. under the bridge or immediately adjacent to the groynes);
- Undertake any reinstatement or levelling out of the riverbed (if necessary) on completion of the extraction particularly of riverbanks disturbed to access the riverbed; and
- Disestablish from the site until such time as gravel beaches reform within 200m of river;
- Machinery used at the site of the works will be checked cleaned to be free of any pest plant material or unwanted organisms prior to being brought to site;
- Any gravel removed from the bed will be transported away from the extraction site as opposed to any long-term stock piling;
- Monitoring report: to be submitted to Environment Southland within six months of completed the works detailing the annual volume of gravel extracted and comparative cross sectional and thalweg surveys to monitor the changes in the mean bed level bridge site every three years.

7 Assessment of Environmental Effects

7.1 Hydraulic Flow and Characteristics

7.1.1 Waiau Catchment – Whitestone River

The Waiau River Catchment incorporates the Orauea River, Lill Burn, Wairaki River, Monowai River, Mararoa River, Upukerora River and the Whitestone River as its main tributaries. This catchment is 217km in length and is 8,202km^2 in size. The rainfall within this catchment is approximately 809 – 9,605 mm /yr and the mean flow with the catchment is 136.6m^3/s (refer: https://waterandland.es.govt.nz/repository/libraries/). One of the key characteristics of the Whitestone River in this location with respect to this proposal, is that it is typically a single channel which means that it is prone to both very low flows within the summer periods and flooding events during high rainfall. This can cause the washouts of its riverbanks as seen by the flooding during 2010 and 2013 at the bridge site.

7.1.2 River Flow and Volume

The proposed works will not decrease the overall flow or volume of the river and will not create significant discharge, with the works being undertaken largely in or from the dry riverbed. While the proposed works could alter the natural processes of the river, the proposed works are deemed necessary to protect and maintain important key infrastructure and to reduce the risk of flooding in high flow events. The proposed works will continue to allow the river to flow and dissipate around the existing flood and erosion protection structures (i.e. the four groynes), by allowing it to flow across the width of the river bed rather than being directed into the corner of the river at the groynes. Previously the flow has been directed at the bridge abutment and the proposed works will help avoid this direction of flow at peak velocity times.

The proposed works will not increase the potential flood risk to the surrounding land rather the works will provide more capacity within the riverbed to accommodate flow away from the bridge abutments and banks. The gravel extraction will ensure the bridge has adequate freeboard to cope with high flow events, alleviating potential flood risk in the vicinity.

7.1.3 Effects on the Riverbed

The hydraulic and flow characteristics through the riverbed may be altered due to the proposed activity described in this application. The natural flow and path of the river in terms of speed, direction, volumes within this section of the riverbed may change with removal of gravel in this location. Riverbeds naturally do alter their flow and path due to ongoing erosion and deposition processes and natural processes in the area are already affected by flood protection infrastructure upstream of the bridge. The removal of the gravel from below the bridge has been undertaken in the past by other industries such as McGregor Concrete production. As this activity has ceased, gravel aggradation under the bridge has been continuing to occur creating a potential erosion and flood risk.

7.2 Water Quality

7.2.1 Water Quality Indicators for Overall Health of River

The Land Air Water Aotearoa (LAWA) data available for the Whitestone River is from the Manapouri Hill site (located downstream of Whitestone River Bridge SH 94). The indicators used by LAWA to determine the overall health of the stream is the MCI or (Macroinvertebrate Community Index), Taxonomic Richness and Percent EPT Richness or Ephemeroptera (mayfly), Plecoptera (stonefly) and Trichoptera (caddisfly) index. The monitoring undertaken over the past 5 years (median values) for MCI by LAWA shows that the overall state of the lower Whitestone River as being in "good" health. In terms of bacteria levels for this section of the Whitestone River the 5-year median for E-coli is 20n / 100ml. This is in the best 25% of all sites monitored by LAWA. Total Nitrogen (0.635g/m3), Total Oxidised Nitrogen (0.47 g/m3) these levels are in the worst 50% of all sites monitored by LAWA while the Ammoniacal Nitrogen levels of (0.005 g/m3) were in the best 25% of all sites monitored. The levels for Phosphorus i.e. Dissolved Reactive Phosphorus (0.002 g/m3) and Total Phosphorus (0.005 g/m3) were in the best 25% of all sites monitored by LAWA. This data provides a general indication of important bacteria and contamination levels within the Whitestone River which relate to its ecological, cultural and recreational values and uses.

The LAWA Clarity and Turbidity Indicators are of most relevance to the proposed gravel extraction activity as these works are most likely to impact on these measures of overall water quality within the Whitestone River. The clarity monitoring shows that the river has a black disc (water clarity measure) of 3.585 m (median values) over last 5 years of monitoring. The turbidity monitoring (cloudiness of water measure) shows that the river has a 0.7 NTU or Nephelometric Turbidity Units over the last five years (median values). This identifies that this section of the Whitestone River is in the best 25% of all sites monitored for these water quality indicators. These values are directly influenced by events and activities such as heavy rainfall, river bed or bank disturbance and direct discharges such as sediment release.

7.2.2 Water Quality of River

The removal of gravel, bed disturbance, sediment release and removal of associated vegetation may adversely affect the water quality of the Whitestone River. The proposed activity will where possible remove gravel from the riverbed during times of low flow or from the dry gravel beaches, eliminating the need to enter the water as much as possible. Undertaking the work during low flow and from the dry riverbed minimises the effects on aquatic habitat and the potential for sediment release. Should gravel be required to be removed while there is still flow in the channel it will generally be undertaken from the highest points (i.e. removal of gravel build up) which will above water level and / or seasonal dry bed. Any gravel extraction within the dry riverbed will be kept to a minimum as sediment generated by in-stream works can have adverse effects on the water quality within the river (including filling the interstitial spaces in the bed of the river).

The removal of gravel from the wet bed may be required between the groynes to ensure their ongoing effectiveness. It should be noted that this 'opening' of any ponds between the groyne structures was required as part of the Environment Southland groyne construction consent (T110-104 Condition 3). The proposed works will not deviate from the requirements stated within the consent.

A "no extraction buffer zone" of 1 metre from the wet bed is to be implemented (where possible) measured 100m up/downstream from the centreline of the bridge and a 4 metre "no extraction buffer zone" beyond 100m

up/downstream to the extent of the Gravel Extraction Area is to be implemented. Within the 4 metre "no extraction buffer zone" no gravel extraction shall occur below mean flow level, be within 4 metres of the wet bed (if extraction is to occur when water levels are above the mean flow level) and not be excavated deeper than 300mm above surface water level. The maximum depth of extraction will depend on the build-up of material but will be no lower than 300mm above surface water level. Within 100 metres up/downstream of the centreline of the Whitestone River bridge material will be removed in accordance with the riverbed levels at the time of the bridge construction shown in Figure 6. This draft condition has been developed in consultation with the Department of Conservation (Te Anau Office) to mitigate any adverse environmental effects on water quality.

7.2.3 Summary

The Whitestone River can experience seasonal high and low velocity flows which may cause bed disturbances and impact on water quality and stream health. Any adverse effects that may occur from the proposed activity on water quality and stream health are small in size and scale and similar to the occasional bed disturbance that can occur through natural processes and events that are known to occur within this type of river system. The proposed activity seeks all precautions to avoid where possible working in the wet bed to minimise the risk of sediment discharge into the Whitestone River.

7.3 Ecological Values

7.3.1 Freshwater Fish

The removal of gravel from the riverbed and marginal strip may affect important native freshwater fish habitats. During 2012 and 2018 a fish rescue/retrieval was conducted at the Whitestone River Bridge (SH 94) following two significant decreases in river flow during dry weather conditions. The species removed from the river by Southland Fish and Game on those occasions included brown and rainbow trout, juvenile and adult lamprey, upland bullies and longfin eels to be released further down the catchment. This appears to be the most recent publicly available record of the native/exotic fish species located within this section of the Whitestone River.

The native fresh water fish species such as long fin eels are only found in the lakes and rivers within NZ and are considered to be at risk and declining while species such as lamprey are considered a threatened fish species. As these native fish species (and potentially others) inhabit this section of the Whitestone River care is required to avoid, remedy and mitigate the adverse effects that may occur as a result of the proposed gravel extraction.

Recent discussions between DOC and Waka Kotahi regarding the proposed works and the potential impact on freshwater species and habitat have been undertaken. The application includes a draft condition that states that no works shall impede fish passage and that the consent holder shall ensure that no stranding of fish will occur during the gravel extraction activities. The proposed "no extraction buffer zones" condition are required to ensure that the natural channel is maintained. This will enable the reinvasion of these habitats by fish seeking refuge to avoid predation by larger fish. If the gravel is removed and the bed is armoured then fish and invertebrate refugia can be lost. These proposed measures will protect freshwater fish and their environs.

7.3.2 Native Birds

Removal of gravel from the riverbed and marginal strip may damage important bird habitats. It is noted that there are more than 80 bird species that are found along braided rivers from the mountains to the sea within NZ. Of relevance is the protection of important bird habitat for the following birds that may be present within this section of the Whitestone River catchment:

- *Banded dotterel*
- *Black-backed gull*
- *Black-billed gull*
- *Black-fronted tern*
- *Black shag*
- *Canadian geese*
- *South Island pied oyster catcher*
- *Paradise duck*
- *Pied stilt*
- *White-faced heron*
- *Variable oystercatchers*

Data has shown that for Southland rivers, bird colonies nesting on islands can often have better nesting success than colonies nesting on banks, presumably as predatory mammals cannot reach them as easily. In addition, weed encroachment on riverbeds has removed suitable breeding habitat on some rivers, and can force birds to nest closer to the water's edge, making nests more vulnerable to flooding.

Recent discussions between DOC and Waka Kotahi regarding the proposed works and the potential impact on native bird species and habitat has resulted in draft condition 16 being included in the application for resource consent (developed in consultation with the DOC). This draft condition sets out the inspection processes to locate any breeding/nesting sites of birds listed above prior to works as well as the processes to avoid any vehicles and machinery damaging sites (i.e. one set of tracks and working on one set of reach/beach of the waterway at any time and not operating within 50 metres of any nesting/rearing sites for native birds). This approach is seen to be a practical way to managing any potential adverse environmental effect from the proposed activity on native birds.

7.3.3 Native Plants and Vegetation

The land surrounding the Whitestone River in this location is predominately pastoral farming with sections of mainly grassed banks. Section 7.3.4 & 5 below identifies the possible threatened, at risk plants that may be located within braided and semi-braided rivers within the Southland region.

7.3.4 Wetlands

The proposed works do not cause any loss of extent or damage to natural inland wetlands. The kakapo swamp is a regionally significant wetland identified in Proposed Southland Water and Land Plan (2018) and the Regional Water Plan for Southland (2010) is located approximately 0.75km to the west of the bridge site.

7.3.5 Southland Regional Policy Statement (2017) and Southland Operative District Plan (2018)

Appendix 2 Schedule of Threatened, At Risk and Rare Habitat Types of the Southland Regional Policy Statement (2017) identifies the Whitestone River as an example of a Braided or Semi-Braided River Bed habitat. These braided and semi-braided riverbeds provide habitat for rare and threatened plants, fish, birds and invertebrates. The threatened plants include native broom, leafless pohuehue and prostrate plants (*Epilobium* spp. and *Raoulia* spp.). Rare and threatened birds include black-fronted term (*Chlidonias albostriatus)*, black-billed gull (*Larus bulleri)* and banded dotterel (*Charadirus bicinctus)* as well as the black fronted dotterel (*Elseyornis melanops)* which is classified as a colonizer. Common species include oystercatchers and pied stilts. Threatened native fish include long finned eel, lamprey, torrent fish, bluegill and redfin bully, and koaro.

Appendix 2 identifies the Whitestone River in the mid to upper reaches an example of seepages, flushes and spring fed wetlands. Seepages and flushes form where groundwater emerges on hillsides due to a change of slope. These are identified as being small isolated systems usually covering no more than few dozen square metres in size and can merge with cushion bogs in some situations. The importance of these seepages, flushes and spring fed wetlands is that they support indigenous sedgeland, cushionfield and mossfield vegetation. These may include the nationally endangered *Iphigenia novae-zealandiae* and at risk species such as *Tetrachondra hamiltonii* and the sedge *Carex capillacea*.

7.3.6 Aquatic and Riverine Ecosystems and Habitats

The removal of gravel, bed disturbance, sediment release and removal of associated vegetation may have an adverse effect the aquatic and riverine ecosystems and habitats of the Whitestone River. The proposed activity will where possible remove gravel from the riverbed during times of low flow or from the dry gravel beaches, eliminating the need to enter the water as much as possible. Undertaking the work during low flow and from the dry river bed minimises the effects on aquatic habitat and the potential for sediment release. Should gravel be required to be removed while there is still flow in the channel it will generally be undertaken from the highest points (i.e. removal of gravel build up) which will above water level and/or seasonal dry bed. Any gravel extraction within the dry river bed will be kept to a minimum as sediment generated by instream works can have adverse effects on the water quality within the river (including filling the interstitial spaces in the bed of the River). No large trees (e.g. Willow) that provide shade and habitat and assist with keeping water temperature low will be removed as part of the gravel extraction. Overall, the adverse effects that may occur are small in size and scale and similar to the occasional bed disturbance that can occur through natural processes and events that occur within this type of river systems. Care will therefore be taken to minimise any impact on aquatic and riverine habitats (as outlined in Section 8.0 of this report).

7.4 Cultural and Heritage Values

7.4.1 Scheduled Cultural / Heritage Sites

There are no recorded sites of iwi or archaeological significance identified in the vicinity of the proposed activity. However, the imposition of an accidental discovery protocol as a draft condition has been promoted within the resource consent application to Environment Southland. The river is not identified under the Ngāi Tahu Claims Settlement Act 1998. Consultation has been undertaken with local iwi representatives, Te Ao Marama Incorporated have provided their written approval to the application for resource consent (Appendix 3).

There are no scheduled heritage sites within the vicinity of the proposed works under the Operative District Plan. There are also no listed heritage items or features with Heritage New Zealand within this vicinity.

7.4.2 Cultural and Heritage Values

The impact of the proposed works on the cultural and heritage sites is likely to be less than minor and in the event of any discovery or suspected discovery of a site of cultural importance the accidental discovery protocol will be adhered to.

7.5 Scenic and Visual Amenity Values

7.5.1 Visual Amenity Landscape Overlay – Southland Operative District Plan

The Operative District Plan identifies the Whitestone River in this location as being within the Visual Amenity Landscape Overlay contained within the planning maps. This overlay includes areas that have a mix of human and natural elements; generally have high aesthetic value; are visible from the main highways and contribute as a scenic resource of the area. Balance is sought between the maintenance and enhancement of a natural feature and landscape values, while enabling the continuation as predominately working rural environment.

7.5.2 Scenic and Amenity Values

Given the size, scale and duration of the proposed works and that bed aggradation/deposition are naturally occurring processes the proposed activity in context is seen to have a less than minor impact on the scenic and visual amenity values associated within this area.

7.6 Public Access and Recreational Values

7.6.1 Access to the Whitestone River for Recreational Activities

The Whitestone River in this location is used for predominately for recreational activities such as fishing and pullover site as a rest-stop along SH 94. Public access to the Whitestone Riverbed and Marginal Strip may be at times be restricted in specific areas where the gravel extraction works are occurring to ensure public safety. These effects will be temporary in addition during these periods public access will still be available in other parts of the riverbed/marginal strip excluded from the area of works.

7.6.2 Public Access and Recreational Values

Measures have been identified to undertake the works outside of public holidays, summer peak times for recreational uses and trout spawning season. The timing and duration of the proposed gravel removal works is seen to have only a minor impact on public access to this section of the Whitestone River. It is noted, that SH 94 and the bridge provide public access to this section of the river.

The positive effects of the proposed gravel extraction works are that the infrastructure (SH 94 and the Bridge) that provides access to this section of the riverbed/marginal strip are protected against damage from flooding and washouts. The damage that occurs from flooding and washouts may also have an adverse effect on the overall recreational values and access associated with this section of the riverbed and marginal strip.

7.7 Positive Effects

The positive effects of the proposed gravel extraction works enable the bridge infrastructure to withstand higher flows thereby decreasing the likelihood of a washout, damage to the bridge and/or its approaches in a flood event. This avoids the potential loss of the bridge, closure of the bridge, effects on vital services (telecommunications) and/or lengthy detours for SH 94 users thereby enabling Waka Kotahi to meet its statutory obligations under the Land Transport Management Act (2003).

The positive effects also include the avoidance of the potential risk of flooding and damage to surrounding DOC land being the marginal strip and the adjoining farmland.

8. Methods to Avoid, Remedy and Mitigate Actual or Potential Adverse Environmental Effects

The proposed gravel extraction activity will be undertaken in such a manner to avoid, remedy or mitigate the adverse effects on water quality and quantity, the ecological, recreational, cultural, heritage and visual amenity values of the Whitestone River. This can be achieved by the following measures promoted as part of the application for resource consent to Environment Southland for Whitestone River (SH 94) bridge site:

- The proposed gravel extraction within the riverbed and the marginal strip will not decrease the overall flow or volume of the river or create a significant discharge as the works will largely be undertaken in or from the dry riverbed.
- The proposed activity seeks to enable water to pass and directly flow under the bridge reducing the risk of material building up around the bridge structure in high flow events. This will reduce the risk of high flood events causing damage to riverbanks, increasing sediment discharge and flood debris which can have an adverse effect on overall water quality.
- Where possible, removal of gravel from the riverbed and the marginal strip will be undertaken during times of low flow or from the dry gravel beaches, eliminating the need to enter the water as much as possible. Undertaking the work during low flow and from the dry bed minimises any significant effects on water quality, on bed disturbance and the release of sediment into the river.

- Should gravel be required to be removed while there is flow in the channel it will be generally undertaken from the highest points (removal of gravel build-up) which will be above the water level and/or seasonal dry bed. Any gravel extraction from the wet bed will be kept to a minimum as sediment generated by instream works can have adverse effects on the water quality within the river (including filling the interstitial spaces in the bed of the river. Proposed works are to be undertaken outside of trout spawning season so not carried out in flowing water between 1 May and 20 November inclusive.
- The intention that the passage of fish will not be prevented as part of the gravel removal works. Provision will be made for small ponds to be installed to allow indigenous freshwater fish to accumulate into areas where the water is deeper and more shaded. It is noted that the areas around the groynes is usually deeper/shaded allowing fish to accumulate. Areas between the groynes are usually shallower and contain silt and generally result lower number of fish being observed in these locations.
- No large trees that provide shade and habitat that assist with keeping water temperature low and erosion control will be removed as part of the proposed activity.
- The gravel extraction works will not cause erosion or the banks or riverbed by adherence to the buffer zones outlined in proposed conditions below.
- It is proposed that all machinery used at the riverbed and the marginal strip will be cleaned to be free of any pest plant material or unwanted organisms prior to being brought to the site.
- No storage of fuel or refuelling of vehicles and machinery is to be undertaken within the riverbed or marginal strip.
- The gravel extraction area is to be marked out on site to identify where the works are to occur and estimated volumes of gravel to be extracted are to be provided to the Council.
- All gravel removed from the riverbed and the marginal strip will be transported away from the site as opposed to long term stockpiling (no longer than 2 weeks).
- Proposed monitoring is to be implemented during gravel extraction works to determine volumes extracted and any changes in water clarity (if works occur for longer than 2 hours) and after the works any changes in mean bed level and thalweg of the bridge site.
- A condition is promoted in the application for resource consent to Environment Southland providing for the accidental discovery of archaeological material.
- A condition is promoted in the application for resource consent to locate all bird breeding or nesting sites of protected birds prior to any works commencing.

Waka Kotahi proposes the following conditions of resource consent to Environment Southland as a means of mitigating the potential effects as discussed above:

1) *The term of this consent is for 25 years.*
2) *This resource consent authorises the extraction of up to volume of 26,000 cubic metres (26,000m^2 x 1.0m depth) of gravel per year from the bed of the Whitestone River within the area shown in Appendix 2 Gravel Extraction Area attached to this document.*
3) *The consent holder shall provide a copy of this consent and all documents referred to in the consent to any operator or contractor undertaking works authorised by this consent, prior to works commencing.*

4) *The consent holder shall undertake comparative cross sectional and thalweg surveys in the Whitestone Riverbed SH 94, every three years to determine in any changes to the mean bed level and channel length.*

5) *When exercising this consent, the consent holder shall maintain a record of the volume of gravel extracted and submit this record to the Consent Authority* ***annually.***

6) *The consent holder shall supply a monitoring report to the Council detailing:*

   i) The annual volume of gravel extracted pursuant to the consent; and

   ii) If gravel has been extracted any changes in the mean bed level and thalweg of the SH 94 Whitestone River Bridge site.

7) *Extraction areas are to be clearly marked out by the consent holder prior to the gravel extraction occurring.*

8) The *consent holder shall ensure that during the exercise of this consent:*

   i) That any areas where gravel has been stored or removed shall be left with battered slopes of a gentle contour.

   ii) All equipment, machinery, plant, debris and signs associated with the gravel extraction activity shall be removed from the site on the completion of the works.

   iii) There shall be no stockpiling of material in the riverbed.

   iv) Any work undertaken on or within the beds of rivers for longer than a two-hour period shall not cause a conspicuous discolouration of stream water; Note: conspicuous discolouration means reduction in black disc visibility of the water more than 20% 100 metres downstream of the disturbance site.

   v) All work within the water is kept to the minimum necessary to avoid, as much as practicable, discolouration of the river.

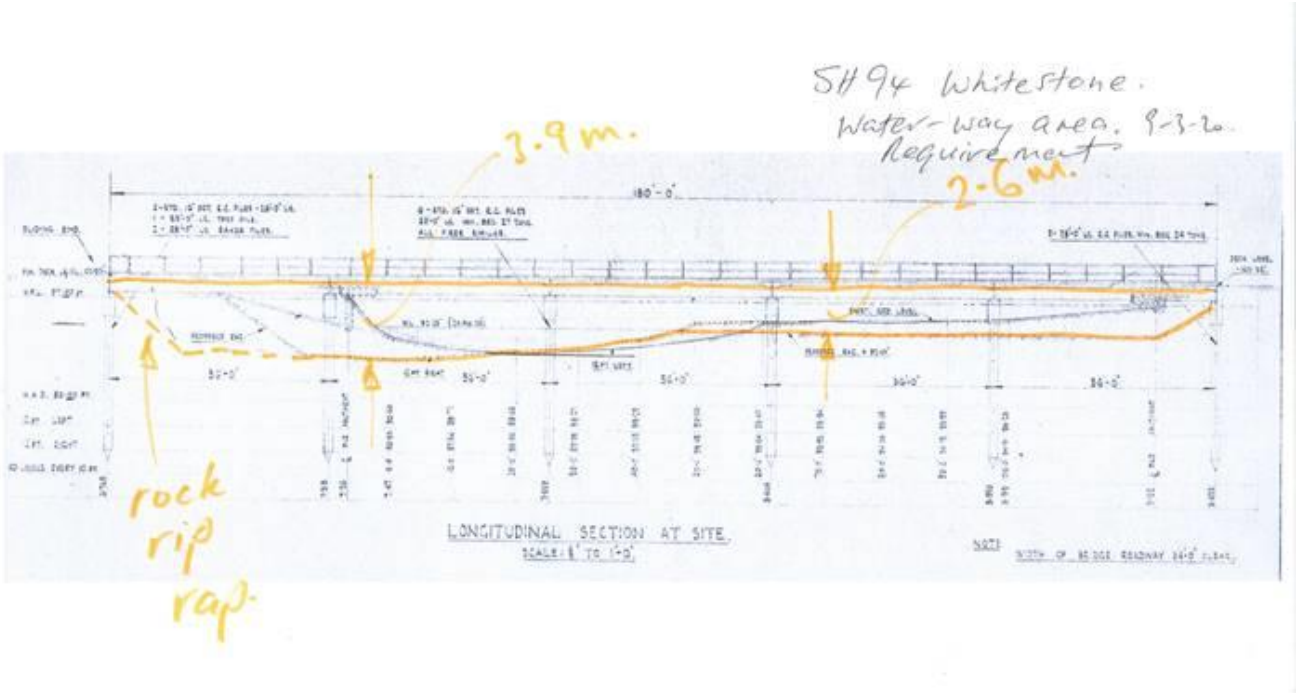
   vi) Works shall not impede fish passage.

   vii) The consent holder shall ensure no stranding of fish will occur during the gravel extraction works.

   9) *The consent holder shall implement (where required) the following "no extraction buffer zones" adjacent to the wet bed as specified below:*

      i) A "no extraction buffer zone" of 1 metre from the wet bed, should be implemented where possible, measured 100m upstream and downstream from the centreline of the bridge.

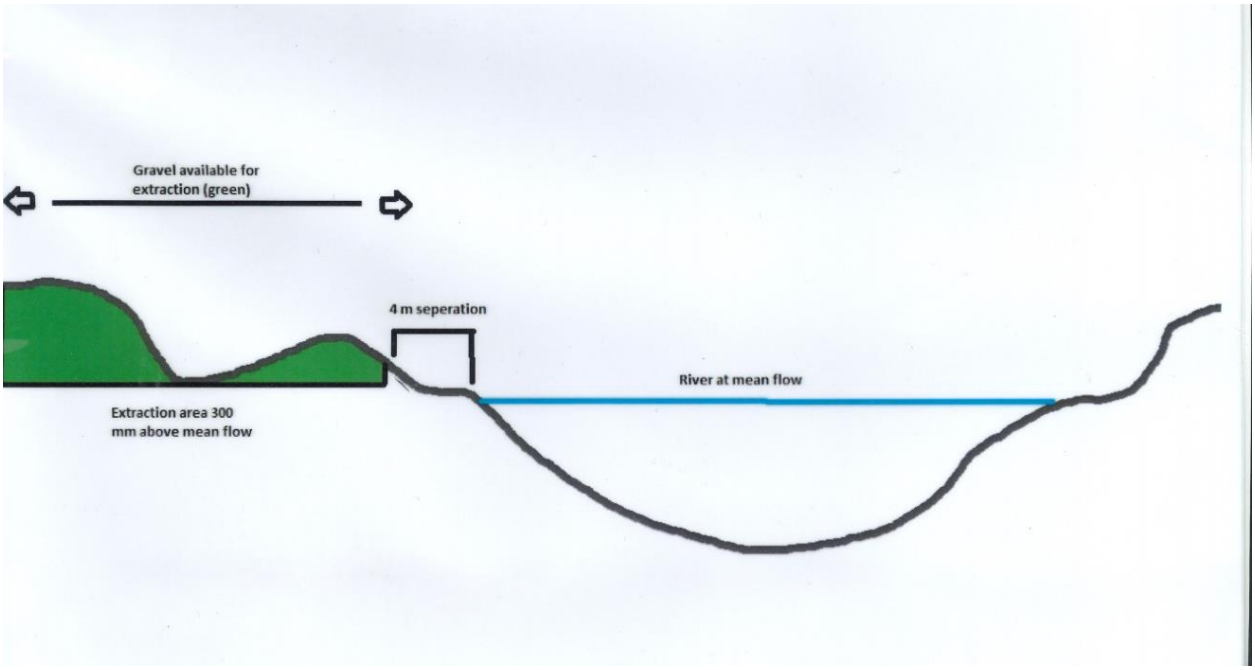
   For clarification purposes: This resource consent authorises the extraction of gravel to maintain the bed at the bridge in accordance with Diagram 1 below (being 3.9 metres and 2.6 metres below underside of deck level and the allowable length downstream to 4.1 metres below bridge underside of deck level)



ii) *A "no extraction buffer zone" of 4 metres from the wet bed shall be implemented, beyond 100m upstream and downstream of the centreline of the bridge to the outer extent of the Gravel Extraction Area (shown in Appendix 2 to this document). Beyond 100 metres upstream and downstream of the bridge:*

- *Gravel extraction shall not occur below the mean flow level.;*
- *Gravel extraction shall not occur within 4 metres of the wet bed (if extraction is to occur when water levels are above the mean flow level); and*
- *Gravel extraction should not be excavated deeper than 300mm above the surface water level.*

For clarification purposes: the mean flow for the Whitestone at this river reach is 6.55m3/s (6.5 cumecs) or 6550 L/s – this flow statistic is from the REC reach number 15255916;



10) *All gravel extraction works shall not cause erosion to the banks of the riverbed.*

11) *No trees or large vegetation that provide shade or habitat that assist with keeping water temperature low and erosion control shall be removed as part of the gravel extraction works.*

12) *Damage to riverbanks and riverbank vegetation shall be avoided where possible.*

13) *The consent holder shall take all reasonable precautions to minimise the spread of pest plants and aquatic weeds. In particular, the consent holder shall thoroughly check and clean all equipment and machinery to ensure it is clear of weeds or excessive dirt (that may harbour seeds) prior to works onsite. In particular, the consent holder shall:*

   i) remove any vegetation caught on machinery;

   ii) where necessary, clear vegetation from the site before gravel is extracted;

   iii) avoid working in areas where aquatic weeds such as Lagarosiphon major are known to be present (for information contact Environment Southland); and

   iv) to avoid the spread of didymosphenia germinata or any other pest plant, do not use machinery in the berm or bed of the river that has been used in any area where the pest plant(s) are known to be present in the previous 20 working days, unless it has been thoroughly cleansed.

14) *All works shall be carried out in a manner which avoids the potential for fuel or other hazardous material to enter the water. This includes:*

   i) No cleaning or refueling of machinery or equipment shall take place on any area of the riverbed, or in any area where spills may enter surface water;

   ii) Fuel shall not be stored at any location where fuel can enter the waterbody;

   iii) All machinery, equipment and materials used for the activity shall be removed from the riverbed every night on completion of the activity (to avoid the possibility of floodwaters damaging and/or washing away machinery, or fuel leakages occurring).

15) *In the event of a discovery, or suspected discovery, of a site of cultural importance (Waahi Taonga/Tapu) during the construction, the consent holder shall immediately cease operations in that location and inform the local iwi authority (Te Ao Marama Inc, phone 03 931 1242). Operations may recommence at a time as agreed upon in writing with the Consent Authority. The discovery of Koiwi (human skeletal remains) or Taonga or artefact material (e.g. pounamu/greenstone) would indicate a site of cultural importance. Appendix * to this consent outlines the process that is to be followed in the event of such a discovery.*

16 *Prior to any works authorised by this consent being carried out in the period of 1 August – 28 February, the consent holder shall ensure that:*

i) A suitably qualified person inspects the proposed area of works, no earlier than eight days prior to any works being carried out, to locate any breeding sites of birds listed in List A to this consent;

ii) The person carrying out the inspection prepares a report (can be an email) that identifies that all the located bird breeding or nesting sites or conversely that no sites were identified, and provides copies of that report to the Department of Conservation (Te Anau) and to the Consent Authority (Environment Southland);

iii) The name and qualifications of the person carrying out the inspection are provided with the report;

iv) Any persons carrying out the works authorised by this consent are informed of any bird breeding or nesting sites located; and

v) Where work ceases for more than eight days, the site will be re-inspected for bird breeding and nesting sites in accordance with parts (i) to (iv) of this condition prior to recommencement of works;

vi) Vehicles and / or machinery shall not be operated within 50 metres of birds which are nesting or rearing their young in the bed of the river, as identified by the inspection undertaken in accordance with this condition.

vii) Vehicles and / or machinery shall be confined to one set of tracks, as far as practicable [to reduce the potential for crushing nests (or other fauna), especially if inconspicuous nests are re-established, and minimise disturbance of wider feeding habitat].

ix) Gravel extraction and associated activities shall be confined to one extraction reach / beach of the waterway at any one time [if a consent covers multiple reaches, this is to minimise overall disturbance by ensuring that only one beach is worked at a time during the nesting season, rather than operations over several beaches where birds are present].

List A Listed Birds for the Purpose of Condition

- *Banded dotterel*
- *Black-backed gull*
- *Black-billed gull*
- *Black-fronted tern*
- *Black shag*
- *South Island pied oyster catcher*
- *Paradise duck*

- *Pied stilt*
- *White-faced heron*
- *Variable oystercatcher*

9 Consideration of Alternative Locations or Methods

There are two main alternative options that can be considered with respect to this matter:

Option 1: Do nothing approach: which would essentially allow the on-going aggradation of gravel at the Bridge to occur without removing any build-up;

Option2: Apply for DOC permissions (and application for resource consent from Environment Southland) for the necessary approvals to undertake gravel extraction at the bridge site.

The implication of Option 1 is that the build-up of the river bed under the bridge will continue to increase to higher levels and the ability of the bridge to withstand higher flows underneath will be reduced thereby increasing the likelihood of a washout, damage to the bridge and / or its approaches in a flood event. This could lead to the loss of the bridge, closure of the bridge, effects on vital services (telecommunications) and/or lengthy detours for SH 94 users. Option 1 is considered unacceptable to Waka Kotahi as the infrastructure provider as the damage to the bridge or approaches would be significant. Further, Waka Kotahi would be failing to meet its statutory obligations under the Land Transport Management Act (2003).

Option 2 is therefore the most appropriate method for Waka Kotahi on this matter. There are no other viable sites, locations or other methods that can essentially remove the gravel build up within the riverbed at the Bridge site. Waka Kotahi have prepared this application to seek the necessary approval from DOC in order to fulfil its statutory infrastructural obligations under the Land Transport Management Act (2003). Option 2 therefore provides the most comprehensive way to obtain the necessary approvals for the proposed activity within this section of Marginal Strip.

10 Consultation

10.1 Written Approval from Affected Parties

Consultation has been undertaken with the following affected parties with respect to the application for resource consent:

- Fish and Game Southland;
- Department of Conservation;
- Te Ao Marama Incorporated;
- Owen and Mary Buckingham (Buckingham Farms – neighbouring property)

Written approval from these identified affected parties was sought during June 2020. Written approvals have been obtained from Te Ao Marama Incorporated and Owen and Mary Buckingham (Buckingham Farms – neighbouring

property). Consultation with Fish and Game Southland and Department of Conservation (Te Anau Office) is ongoing. These are included in Appendix 3.

11 Conclusion

In summary, the overall intent of the proposed gravel extraction is to protect the bridge from flooding and damage from erosion that results from ongoing bed aggradation. The proposed gravel extraction is to allow the river to flow across the entire bed width of the river rather than build-up occurring at specific points resulting in the water flow being forced into the bridge infrastructure.

The environment effects of the proposed gravel extraction works can be addressed by taking the precautionary approach adopted in Section 8.0 of this report. The overall impact from the proposed works is seen to be of limited in scale and duration and in part protects the values associated with marginal strip, and wider area against damage due flooding during a high rainfall event.

Waka Kotahi request that the Department of Conservation approve a Long Term Concession under Form 7a "Other" for gravel extraction activities within the adjacent Marginal Strip at the Bridge site for a term of 25 year) to align with the term of the resource consent.

Resource Consent Application to Environment Southland

Deb Carstens

April 2020

VERSION 1

Whitestone River Bridge, State Highway 94 – Gravel Extraction

NZ TRANSPORT AGENCY WAKA KOTAHI

New Zealand Government

This report has been prepared for the benefit of the NZ Transport Agency (the 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: Peter Robinson

Prepared by: Deb Carstens

Reviewed by: Shane Roberts

Approved for issue by: Richard Shaw

Application for Resource Consent under Section 88 of the Resource Management Act 1991 (RMA)

To: Environment Southland
Private Bag 90116
Invercargill

From: NZ Transport Agency
PO Box 5245
Dunedin

(Please note different address for service given below)

The NZ Transport Agency applies for the following resource consent:

ACTIVITY	TERM
Land use consent for gravel extraction from a river bed	25 years

A description of the activity to which the application relates is:

- The extraction of gravel from the bed of a river, in any aggraded area within the extent 2000 metres upstream and 100 metres downstream of the State Highway 94 Bridge centreline;

  The extraction of gravel is to prevent erosion of the State Highway 94 Bridge by allowing the River to flow across the entire bed width of the River (rather than around the build-up and be forced into infrastructure); and,
- Associated vegetation removal and bed disturbance activities as a result of the gravel extraction.

Further details are contained in the attached "Assessment of Effects on the Environment" (AEE) and its appendices, which form part of this resource consent application.

The description of the site at which the activity is to occur is:

The Whitestone River at the SH94 River Bridge, at or about:

New Zealand Map Grid		New Zealand Transverse Mercator Projection	
Northing	Easting	Northing	Easting
5514555.0	2102585.0	4952622.5	1192565.0

The full names and addresses of the owners of the sites are:

LAND	FULL NAME AND ADDRESS OF EACH OWNER OR OCCUPIER OF THE SITE
River bed	The Crown

Marginal Strip	Department of Conservation C/- Te Anau Area Office, PO BOX 29, 9640, Te Anau

There are other activities that are part of the proposal to which the application relates.

Permitted activities

- Machinery access for the purposes of carrying out the consented activity (if granted) is provided for under Rule 45;
- Sediment release;
- Flood debris removal (Rule 43) for infrastructure protection.

No additional resource consents are required in relation to the proposal.

Attached is any information relating to the activity, including an assessment of the activity's effects on the environment, as required by Schedule 4.

The information has been provided in sufficient detail to satisfy the purpose for which it is required.

Included is an assessment of actual and/or potential environmental effects for the proposed activity is contained in the attached document as required by the Fourth Schedule of the RMA, which correspond to the scale and significance of the potential effects of the activity on the environment

Included is an assessment of the proposed activity against the matters set out in Part 2 of the Resource Management Act 1991, I attach 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,

Nothing in this application is affected by affected by Section 124 or 165ZH(1)(c) of the Resource Management Act 1991 (which relate to existing resource consents).

The proposed activity is NOT within an area covered by a customary marine title group planning document under Section 85 of the Marine and Coastal Area (Takutai Moana) Act 2011.

The application is not for any form of subdivision under the Act. Information, as required by the relevant Regional Plan Appendix A is contained in the attached document.

Signed by:

Richard Shaw
Team Leader – Consents and Approvals
Waka Kotahi NZ Transport Agency
Pursuant to authority delegated by the NZ Transport Agency

Date: 27 April 2020

Address for Service:

WSP New Zealand Ltd
197 Rattray Street
Dunedin 9016
Attn: Deb Carstens
Phone: 03 474 0497
Email deb.carstens@wsp.com

1. The NZ Transport Agency

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 Roading Powers Act 1989. The Transport Agency is also a requiring authority under s.167(3) of the 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. We connect 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.

2. Application

On behalf of the Transport Agency, this document comprises an application to Environment Southland (the Council) for resource consent for gravel extraction as a discretionary activity.

The proposed works are located adjacent to SH94, 7.5km southeast of Te Anau at Route Station 130 and Route Position 0/0.00. The proposed activity includes work within the bed of Whitestone River (the River) upstream and downstream of the SH94 Bridge.

Figure 1: Location of Proposed Bridge Protection Works

The proposed works involve gravel extraction from the bed of the Whitestone River adjacent to the SH94 in order to protect the Bridge and the river bank from erosion (bank protection measures already in place) resulting from ongoing bed aggradation. The scope of the proposed works is outlined in Section 4.0 of this report. Resource consent is required from Environment Southland for the proposed works under the Proposed Southland Regional Land and Water Plan (2018) and the Operative Regional Water Plan for Southland (2010).

3. Background

Strategic Importance of SH94

SH 94 is the principal road link between Te Anau, Fiordland National Park, including Milford Sound/Piopiotahi, that also connects to the wider Central Otago and Southland Regions. SH 94 links to SH6, SH95 and SH97. The section of the State highway network from Te Anau to Mossburn is a 'Regional Route' under the One Network Road Classification within the Otago & Southland Regional Land Transport Plan (2015-2021), in recognition of the significant volume of tourist traffic on this route.

Prior Bridge Management

During 2010 and 2013 the NZ Transport Agency has undertaken several remedial actions after successive washouts of the river banks at the Whitestone Bridge.

Photo 1: SH94 Whitestone River Bridge approach washout in April 2010.

This remediation has included bank reclamation and rebuild, placement of erosion protection structures (four groynes) and rock rip rap erosion protection at and upstream of the Bridge (Environment Southland Permit T110-104).

Photo 2: Erosion protection groynes and bridge washout reclamation constructed in 2010.

Historically, gravel has been extracted by private contractors downstream of the site that has assisted in the migration of material away from the Bridge. With the commercial gravel extraction activities no longer occurring the build-up of gravel at the Bridge site is becoming more evident and is starting to impact on the carrying capacity of the river during flood events.

Photo 3: constructed groynes in 2014 with gravel beach build up on true right side of River (left of photo).

The NZ Transport Agency holds resource consents for Bridge maintenance activities, including works on the bridge structure and piers in the bed of the River, and erosion protection structures installation and maintenance at the Bridge (ES Permit 201872).

The NZ Transport Agency has obtained land use consent to extend the groynes further across the bed of the Whitestone River (ES Permit APP-20146812-01). However, the existing (and lapsed) resource consents does not authorise any gravel extraction from the bed of this river for purposes of flood or erosion protection. No land use consents have been issued by Environment Southland for gravel extraction activities in the vicinity of the Whitestone Bridge (SH 94). It is noted, that the NZ Transport Agency holds existing resource consents for gravel extraction at other rivers in the Te Anau Basin and Milford.

This application for resource consent is for 25 year term to enable active management of the beaches that form due to gravel migration located specifically up to 2km upstream and 100m downstream of the Whitestone Bridge (SH 94).

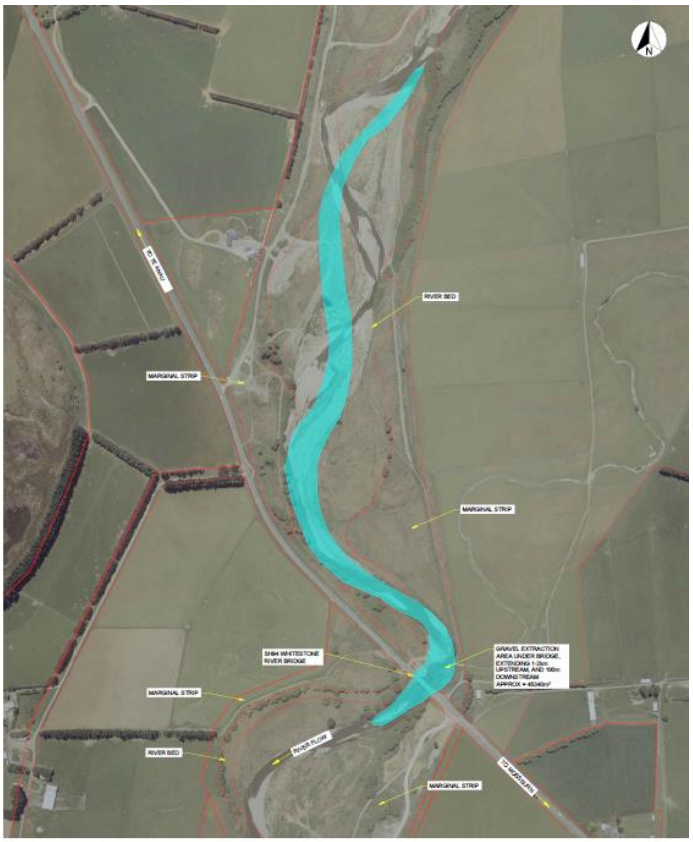
4. Site Description

The site is located on SH94, 7.5 km south of Te Anau. The site is located at or about GPS coordinates NZMG E2102585.0, N5514555.0.

The Whitestone River originates from the southernmost reaches of the Livingstone Mountains in Northern Southland. The river flows southwards to its confluence with the Mararoa River (approximately 8km south of the SH94 Bridge). State Highway 94 crosses the Whitestone River 7.5km southeast of Te Anau and 60km northwest of Mossburn. The Whitestone River is typical of the Te Anau basin, featuring an active gravel bed brought about by the steep upper catchment, high bed material load and high flow velocity. The margins of the bed at the Whitestone Bridge are characterised by a grassed bank, shallow flow and gravel beaches.

The land surrounding the Whitestone River is primarily used for pastoral farming. There are two access tracks on the true left bank Bridge margins: one to the former McGregor contracting activity south of the Bridge and one to an existing farming activity upstream of the Bridge. There are further existing access tracks on the north side of the Bridge from SH94. The Bridge is located on SH 94 which is owned by the Crown and managed by the NZ Transport Agency.

The site is shown in Figure 2 below:



5. Proposal

Methodology

The proposed works to be carried out are stated as follows:

- Establish a sloped access ramp (if required) to the bed from the upstream or downstream access tracks by the movement of gravel by excavator;
- Undertake gravel removal by excavator – this will include the removal of any vegetation or vegetation flood debris necessary for gravel extraction;
- Gravel will be loaded on to a truck for removal;
- The excavated gravel will be skimmed from beaches as opposed to large pits or holes. Gravel will be extracted to a within 500mm of existing water level (vertically);
- No gravel will be extracted from the wet bed;
- Any stockpiling will be for relatively short durations, no longer than two weeks for any extraction event;
- Undertake any reinstatement necessary upon completion of the extraction (particularly of river banks disturbed to access the bed); and
- Disestablish from the site until such time as gravel beaches reform within the 200m of River that is the subject of this consent.

Machinery used at the site of the works will be cleaned to be free of any pest plant material or unwanted organisms prior to being bought to site. Any gravel removed from the bed will be transported away the extraction site as opposed to stockpiling.

Timing and Duration of the Works

The timing for the proposed works is during summer during typically low river flow periods and generally outside of the trout spawning period (May – October). However, this is dependant to a degree on when flood events occur which may deposit gravel / material that subsequently requires removal. The duration of proposed work is expected to be two to five days (initial establishment until completion) and any necessary reinstatement works and the extraction activity is to occur up to three times per annum. The NZ Transport Agency intends to restrict works during the period 23 December to 10 January to avoid conflict with heavier traffic volumes and recreational activities.

Term of the Resource Consent

The application for resource consent seeks a 25-year term to provide for the long-term maintenance of the Bridge and associated erosion protection structures against potentially damaging flood events resulting from bed aggradation. The overall intent of the application is therefore to provide for the protection of Whitestone Bridge and SH94 roading infrastructure on an ongoing basis.

6. Activity Status

The proposed works have been assessed against the relevant sections of the Proposed Southland Water and Land Plan (2018), Operative Regional Water Plan for Southland (2010), Operative Regional Air Plan for Southland (2016) and the Operative Southland District Plan (2018) to determine what resource consents are required.

Gravel Extraction (Proposed Southland Water and Land Plan 2018)

Rule 73(b) of the Regional Water and Land Plan applies to gravel extraction within a river bed as follows:

(b) *The excavation or disturbance of the bed of a lake, river or modified watercourse for the purpose of extracting gravel or aggregate (except where the extraction of gravel is associated with the maintenance of structures which is otherwise authorised under Rule 66) for flood or erosion control or the protection of infrastructure is a restricted discretionary activity provided the following conditions are met:*

ai) *the general conditions set out in Rule 55A other than conditions (i), (j) and (k) of that Rule.*

The Southland Regional Council will restrict its discretion to the following matters:

1. *the location of the extraction;*

2. *the design of the works and the quantity of material extracted;*

3. *any effects on infrastructure, flood risk, river morphology and dynamics (including erosion or deposition), aquatic and riverine ecosystems and habitat, taonga species and the spiritual and cultural values and beliefs of the tangata whenua.*

The provisions within Rule 55A apply with the exception of (i), (j) and (k) and are stated below:

(a) *Fish passage is not impeded as a result of the activity; and*

(b) *There is no disturbance of roosting and nesting areas of the black fronted tern, black billed gull, banded dotterel or black fronted dotterel; and*

(c) *Any activity in the water is kept to a minimum to avoid, as much as possible, discoloration of the water in the water bodies listed in the chapeau12 of the rule, including from any temporary sediment release; and*

(d) *Any bed disturbance is kept to the minimum necessary to undertake the activity and the bed is returned as near as practicable to its original channel shape, area, depth, and gradient on completion of the activity (with the exception of revegetation); and*

(e) *No fuel storage or machinery refuelling occurs on any area of the bed; and*

(f) *No contaminants, other than sediment released from the bed, are discharged to water as a result of use of the structure unless allowed by a relevant permitted activity rule in this Plan or a resource consent; and*

(g) *Before any equipment, machinery, or operating plant is moved to a new activity site it is effectively cleaned to prevent the spread of "pests" or "unwanted organisms" as defined by the Biosecurity Act 1993; and*

(h) *All equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity is removed from the site on completion of the activity; and*

(i) *The structure or bed disturbance activity does not cause significant erosion of, or deposition on, the surrounding bed or banks; and*

(j) *Any build-up of debris against the structure which may adversely affect flood risk, drainage capacity or bed or bank stability is removed as soon as practicable; and*

(k) The structure is maintained in a state of good repair; and

(l) From the beginning of November until the end of May, there is no disturbance of whitebait spawning habitat.

The intent of the proposed works is to extract gravel from the river bed for flood or erosion control and for the protection of infrastructure and is therefore considered under Rule 73(b) of the Regional Plan. The general conditions in Rule 55A except (i), (j) and (k) therefore apply. The proposed works meet all these general conditions except (d) relating to the return as near as practicable of the river bed to its original shape, area, depth and gradient. The size and scale of the proposed works are seen to exceed Rule 55A(d) and therefore are assessed against Rule 73(c) which is stated as follows:

(c) The excavation or disturbance of the bed of a lake, river or modified watercourse for the purpose of extracting gravel or aggregate (except where the extraction of gravel is associated with the maintenance of structures which is otherwise authorised under Rule 66) that cannot meet the conditions in Rules 73(a) or 73(b) and is a discretionary activity.

As the intent of the proposed works is for flood and erosion control and the protection of infrastructure and not for the maintenance of structures under Rule 66, the application would require a discretionary activity resource consent application under this Regional Land and Water Plan.

It is noted that there are other rules in this Regional Plan that apply to the gravel extraction activity. These include Rule 75 relating to vegetation flood debris removal including plants dislodged and transplanted during flood flows and Rule 77 relating to vehicles and machinery entering the river bed. These are both permitted activities providing the general conditions stated within each of these two rules are met. It is anticipated that the proposed works will be able to meet the general conditions contained within these two rules.

Gravel Extraction (Proposed Southland Water and Land Plan 2018)

Rule 41(b) of the Operative Regional Water Plan applies to gravel extraction within a river or stream bed and is stated as follows:

(b) The excavation or disturbance of the bed of any lake or river, modified watercourse, stream or lake for the purposes of extracting gravel or aggregate for flood or erosion control or the protection of infrastructure is a restricted discretionary activity.

The Council will restrict its discretion to the following matters:

(i) The location of the extraction;

(ii) The design of the works and the quantity of material extracted

(iii) Any effects on infrastructure, flood risk, river morphology, and dynamics (including erosion or deposition), aquatic and riverine ecosystems and habitat, and heritage and cultural values;

(iv) Any standard conditions in Rule 48(a) that cannot be met.

The activity is therefore considered a **restricted discretionary activity** under this provision and the Matters for Discretion set out under Rule 41(b) (i) to (iv). This assessment is included in Section 6 of this application. It is noted that Rule 41(b)(iv) refers to the standard conditions set out in Rule 48(a) of the Regional Plan which are stated below:

(a) Standard conditions for placement, erection, reconstruction, maintenance, alteration, extension, demolition and removal of structures and bed disturbance activities:

(i) fish passage shall not be impeded as a result of the activity;

(ii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;

(iii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;

(iv) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and the site shall be reinstated, as near as practicable, to its original condition on completion of the activity (with the exception of revegetation);

(v) no fuel storage or machinery refuelling shall occur on any area of the bed;

(vi) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;

(vii) there are no recorded historic heritage sites, at the site of the activity;

(viii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of "pests" or "unwanted organisms" as defined by the Biosecurity Act 1993;

(ix) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;

(x) the activity shall not result in significant adverse effects on aquatic ecosystems;

(xi) between the beginning of November and the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.

This application is assessed against these standard conditions within the assessment of environmental effects contained in Section 6.0 of this report.

Rule 48(b) of the Regional Water Plan states the following:

Additional standard conditions for placement, erection, reconstruction, use, maintenance, alteration, extension, demolition and removal of structures:

(i) the structure shall not cause significant erosion of, or deposition on, the surrounding bed or banks;

(ii) any build-up of debris against the structure, which may adversely affect flood risk, drainage capacity or bed and bank stability, shall be removed as soon as practicable;

(iii) the structure shall be maintained in a state of good repair.

While a restricted discretionary activity application for the proposed works is required under Rule 41(b) of the Regional Water Plan, the NZ Transport Agency is also required to comply with requirements set out in Rule 48(b) of this Plan. Under this Rule, the NZ Transport Agency has a legal obligation to remove as soon as practicable the build-up of debris against the structure in the river bed which may adversely affect flood risk, drainage capacity or bed and bank stability. It also required to maintain the structure in a good state of repair. The NZ Transport Agency therefore deem an application for resource consent of this nature is necessary to fulfil its legal responsibility under Rule 48(b) of the Regional Water Plan.

Discharges of Sediment (Operative Regional Water Plan for Southland 2010)

The proposed works may cause a discharge of sediment into the river should these works be required in or immediately adjacent to the wet bed. Rule 1: Discharge to surface water bodies that meet water quality standards therefore applies:

Except as provided for elsewhere in this Plan or in any other Southland Regional Council regional plan, the discharge of any:

(a) contaminant or water into a surface water body; or

(b) contaminant onto or into land in circumstances where it may enter a surface water body

is a discretionary activity provided the following condition is met:

(i) the discharge does not reduce the water quality below any standards set for the relevant water body in Appendix G "Water Quality Standards" after reasonable mixing.

Under Rule 1 discharges of contaminants into a surface water body requires a discretionary activity resource consent unless it is provided for elsewhere in the Regional Plan. Under Rule 48(a)(vi), a contaminant does not include the discharge of sediment released from the bed into the water as part of the bed disturbance activity. Therefore, Rule 1 does not apply to this application and no resource consent is sought for the discharge of sediment.

Minor Diversions of Water (Operative Regional Water Plan for Southland 2010)

Rule 20 of the Regional Water Plan sets out the requirements for a minor diversion of water within a river to be considered a permitted activity. This rule is stated as follows:

Notwithstanding any other rule in this Plan, the diversion of water within a river or lake bed is a permitted activity provided the following conditions are met:

(i) the diversion is for the purposes of undertaking a permitted activity under Rules 24 to 46 or for the purposes of habitat creation, restoration and enhancement, and is carried out in accordance with the conditions of Rule 48;

(ii) the diversion is carried out completely within a river or lake bed (i.e. no water is diverted outside of the river or lake bed);

(iii) the water is returned to its original course after completion of the activity, no later than one month after the diversion occurs;

(iv) the diversion does not result in adverse effects on existing water users;

(v) the diversion does not result in a net loss of water from the catchment.

The purpose of the proposed activity is to extract gravel from the Whitestone River bed to protect the SH 94 bridge and for bank protection measures. As part of proposed works some alteration to the flow of the river may result over time. However, any alteration to the flow of the river is seen to comply with the permitted activity standards sets out in Rule 20 of the Regional Plan and therefore would not require resource consent.

Discharges to Sediment to Air (Operative Southland Regional Air Plan 2016)

The proposal has also been assessed against the Environment Southland Operative Regional Air Plan (2016). Rule 5.5.3(10) permits any discharges of contaminants into the air for gravel extraction activities provided the volume extracted at 100 tonnes or less in any hour. The NZ Transport Agency's contractors will not exceed this limit, ensuring the proposal is a **permitted activity** in terms of the Regional Air Plan.

Activities within the Zone (Operative Southland District Plan 2018)

The area subject to the proposal is zoned Rural under the Operative Southland District Plan (2018) and is included within the Natural Hazard Overlay – Flood Area and the Visual Amenity Landscape Overlay. With respect to the Natural Hazards Overlay – Flood Area, no resource consent application is required under Section 2.7 of the District Plan. Overall, the proposed works are seen to reduce the potential impact of flooding on the surrounding land uses. No resource consent application is required for the proposed works under the Visual Amenity Landscape Overlay provision set out in Section 2.3 of the District Plan.

7. Assessment of Environmental Effects

This assessment of environmental effects has been provided in such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

The following Rule 41(b): Matters for Discretion apply to the application for a restricted discretionary activity under the Operative Regional Water Plan for Southland 2010:

(i) the location of the extraction;

(ii) the design of the works and the quantity of material extracted;

(iii) any effects in infrastructure, flood risk, river morphology and dynamics (including erosion or deposition), aquatic and riverine ecosystems and habitat, historic heritage and the spiritual and cultural values and beliefs of the tangata whenua;

(iv) any standard conditions in Rule 48(a) that cannot be met.

In addition to the above, the Assessment of Environmental Effects must include the information contained in Clause 8 of Section 88.

Purpose of the proposed works

The purpose of the proposed works is to ensure there is sufficient space within the bed of the River for water to pass and to flow under the Bridge, particularly in high flow events, without aggrading significant deposits of material into the Bridge structure. The proposed works therefore seek to remove the gravel build-up and deposits (beaches) which create the flood risk to the Bridge and SH94.

Location of the proposed works

The location of the proposed works is shown on the plan in Appendix 1 and can be described as up to 2000 metres upstream and 100 metres downstream of the Whitestone River Bridge. The size of the river bed between the bridge abutments is approximately 45m in width. Immediately upstream the river bed is up to 60m in width and downstream of the bridge the bed is up to 40m in width.

The NZ Transport Agency is seeking to incorporate the length and width of the river that is 2000m upstream and a 100m downstream into in an "extraction area", to provide flexibility in managing the potential erosion risk to the Whitestone River bridge and structures. This extraction area is approximately 45,350m2 in area. The volume of the proposed potential amount of gravel to be extracted is unknown due to no survey data being available at this time however given the footprint identified above this is likely to be at least 45,000m3.

The river in this location is typically a single channel which can carry very low flows within summer periods. It is expected that at the time of extraction, the river flow will be occupying the lowest part of the river bed. It is unlikely that gravel will be required to be removed from flowing water within the channel. However, some extraction from the wet bed may be required where the gravel build-up presents a risk to the bridge or groynes (i.e under the bridge or immediately adjacent to the groynes). The NZ Transport Agency therefore seeks approval under the resource consent for both gravel extraction within the wetbed and to allow associated machinery to enter the water where required to prevent a significant hazard risk.

The maximum depth of abstraction will depend on the build-up of material but will be no lower than 500mm above water level. The exception to this is under the bridge where material will be removed to maintain a minimum of 2.6 metres of freeboard.

Design of the proposed works

The design or the proposed works is generally dictated by the level of gravel that has built up in the River bed and as a result, the proposed works are responsive. In this regard, the amount of gravel extracted from the River bed is to be determined (up to levels stated in Section 6.5) based on an

assessment of the existing depth and area of gravel requiring removal in order to retain the necessary freeboard at the Bridge and to remove the risk of the material in the river upstream aggrading at the Bridge.

Quantity of material to be excavated

The total volume of gravel extraction resulting from the works within the proposed extraction area is unknown. Based on the approximate size of the extraction area of 45,000m^2 x 1.0 m depth) it would be expected a minimum of 45,000m^3 would be removed. The amount removed will be driven by the conditions within the river and rate of aggradation.

Effects on Infrastructure

The main positive effects from the proposed works is the protection of the Bridge infrastructure necessary to provide the safe and efficient functioning of SH 94. The main damage is potentially from high flow or flood events where significant deposits of material are aggrading at the Bridge structure. State highway 94 is an important strategic transport link that connects Mossburn to Te Anau and onwards to Milford Sound. The proposed works are therefore seen as being positive in terms of the ongoing maintenance and protection of this key transportation infrastructure. The proposed works also assist in reducing the overall risk of damage to surrounding land and roading infrastructure from flooding in high flow events. By creating sufficient space within the bed of the river for water to pass and directly flow under the bridge this reduces the risk of material building up around the bridge structure in high flow events potentially exacerbating the risk of a flood event on adjacent land in this location.

The proposal will have positive effects for other key infrastructure, particularly for the various other services (e.g. fibre optic cable) that use the SH94 Bridge as a conduit across the river, which have all been washed out and temporarily disconnected in the past flood events.

Photo 4: Whitestone River bridge washout 10 January 2013.

The NZ Transport Agency consider that if no appropriate action is undertaken, the potential for a high flow event to have an adverse effect upon the Whitestone River Bridge at SH 94 (i.e. washout) will increase. The NZ Transport Agency therefore consider an application for resource consent of this nature is also deemed necessary to fulfil its legal responsibility under Rule 48(b) of the Operative Regional Water Plan for Southland (2010) as discussed in Section 5.3 of this report.

Effects on Flood Risk

The proposed works will not increase the potential flood risk to the surrounding land rather the works will provide more capacity within the river bed to accommodate flow away from the bridge abutments and banks. The gravel extraction will ensure the bridge has adequate freeboard to cope with high flow events, alleviating potential flood risk in the vicinity.

The proposed works will continue to allow the river to flow and dissipate around the existing flood and erosion protection structures (i.e. the four groynes), by allowing it to flow across the width of the river bed rather than being directed into the corner of the River at the groynes. Previously the flow has been directed at the bridge abutment and the proposed works will help avoid this direction of flow at peak velocity times.

Effects on River Morphology and Dynamics (including Erosion and Deposition)

The hydraulic and flow characteristics through the river bed will be altered due to the proposed works described in this application. The natural flow and path of the river in terms of speed, direction, volumes within this section of the river bed may change with removal of gravel in this location. It is noted that river beds naturally do alter their flow and path due to ongoing erosion and deposition processes. It is also noted the natural processes in the area are affected by flood protection infrastructure upstream of the SH94 bridge.

The removal of the gravel from below the bridge has been undertaken in past by other industries such as McGregor Concrete production. As this activity has ceased, gravel aggradation under the bridge has been continuing to occur.

The proposed works will not decrease the overall flow or volume of the river and will not create significant discharge, with the works being undertaken largely in or from the dry bed. While the proposed works could alter the natural processes of the river, the proposed works are deemed necessary to protect and maintain important key infrastructure and to reduce the risk of flooding in high flow events. It should also be noted the natural processes in the river are already

Effects on Aquatic and Riverine Ecosystems and Habitats

The species of freshwater fish that have been identified within this location in the Whitestone River include rainbow and brown trout, adult lamprey, upland bullies and long fin eels inhabiting the river (findings from Southland Fish and Game, fish rescue operation that was undertaken at the bridge site in January 2018). Both high and low river flow events can detrimentally impact and/or damage important fresh water fish habitats. The proposed works seek to enable water to pass and directly flow under the bridge reducing the risk of material building up around the bridge structure in high flow events, causing flooding and damaging important fresh water fish habitat.

Where possible the removal of gravel from the bed will be undertaken during times of low flow or from the dry gravel beaches, eliminating the need to enter water as much as possible. Undertaking the work during low flow and from the dry bed minimises any significant effects on the aquatic habitat in the area, particularly effects from potential release of sediment. Should gravel be required to be removed while there is flow in the channel it will generally be undertaken from the highest points (removal of gravel build up) which will be above water level and/or seasonal dry bed. Any gravel extraction from the wet bed will be kept to a minimum as sediment generated by in-stream works can have adverse effects on the water quality within the river (including filling the interstitial spaces in the bed of the River).

The removal of gravel from the wet bed may be required between the groynes to ensure their ongoing effectiveness. It should be noted that this 'opening' of any ponds between the groyne structures was required as part of the Environment Southland groyne construction consent (T110-104 Condition 3). The proposed works will not deviate from the requirements stated within the consent.

No large trees (eg willow) that provide shade and habitat and assist with keeping water temperature low will be removed as part of the gravel extraction.

Overall, rivers such as the Whitestone River can experience seasonal high and low velocity flows which may cause bed disturbances and impact on freshwater ecosystems and habitats. Any adverse effects that may occur from the proposed works on the aquatic and riverine ecosystems and habitats are considered to be small in size and scale and similar to the occasional bed disturbance that can occur through natural processes and events that are known to occur within this type of river system.

Effects on Cultural and Heritage Values

There are no recorded sites of Iwi or archaeological significance identified in the vicinity of the proposed works. However, the imposition of an accidental discovery protocol as a condition would be appropriate. Esplanade Mechanism ER82 is identified in the Operative District Plan for the River. Access will continue to be available along the River during the works.

Though the River is not identified under the Ngai Tahu Claims Settlement Act 1998, consultation is still to be undertaken with local Iwi representatives, Te Ao Marama Incorporated, in respect of the proposed activity and the life supporting capacity or mauri of the River.

There are no scheduled heritage sites within the vicinity of the proposed works under the Operative District Plan. There are also no listed heritage items with Heritage New Zealand within this vicinity.

The Operative District Plan identifies the Whitestone River in this location as being within the Visual Amenity Landscape Overlay contained within the planning maps. This overlay includes areas that have a mix of human and natural elements; generally have high aesthetic value; are visible from the main highways and contribute as a scenic resource of the area. Balance is sought between the maintenance and enhancement of natural feature and landscape values, whilst enabling continuation as predominantly a working rural environment. It is considered that proposed works in context will have a less than minor impact of the visual and rural amenity values associated with this Overlay.

Assessment of Standard Conditions in Rule 48(a) of the Operative Regional Water Plan for Southland (2010) for a Restricted Discretionary Activity Application

A restricted discretionary application for resource consent under the Operative Regional Water Plan for Southland (2010) requires each of the standard conditions of Rule 48(a) of the be assessed. The proposed works have been assessed against these requirements as follows:

(i) fish passage shall not be impeded as a result of the activity;

Fish passage is not to be impeded as a result of the activity as the proposed works are to be undertaken within the dry bed. In the instance where work may be required in the wet bed whilst there might be some disturbance within the channel, unimpeded passage will be available.

(ii) there shall be no bed disturbance of the roosting and nesting areas of the black fronted tern, black billed gull, and banded and black fronted dotterel;

The contractors undertaking the proposed works will take care to avoid any areas where the roosting and nesting areas of black terns, black billed gull and banded and black fronted dotterel occur. Care will be undertaken to avoid these areas and to identify other possible options to access or undertake the proposed works within the river bed.

(iii) any activity in the water shall be kept to a minimum to avoid, as much as practicable, discoloration to the river or lake. Where any sediment release occurs, it will be only temporary;

The gravel extraction activity will avoid as much as possible working within or close to the wet river bed in order to avoid unnecessary sediment discharge into the Whitestone River. Where work in the wet bed is required any sediment discharge will only be temporary in nature and directly related to actual gravel extraction only.

(iv) any bed disturbance shall be kept to the minimum necessary to undertake the activity, and the site shall be reinstated, as near as practicable, to its original condition on completion of the activity (with the exception of revegetation);

The removal of the gravel will disturb the river bed but will be undertaken in such a manner as to minimise the impact on the natural flow and path of the river. The removal of the gravel is deemed necessary to protect key strategic infrastructure in terms of preventing ongoing aggradation of material against the bridge and reducing the impact of flooding in high flow events. Whilst the site will be altered as a consequence of the proposed works, it will be reinstated (e.g. contoured) to be as near as practicable to original condition (noting aggradation is expected to continue and rebuilt gravel levels in the river).

(v) no fuel storage or machinery refuelling shall occur on any area of the bed;

This requirement is a standard condition for all contractors working near or within river beds and will be adhered to.

(vi) no contaminants, other than sediment released from the bed, shall be discharged to water during the activity unless allowed by a relevant permitted activity rule or resource consent;

No other contaminants other than sediment discharge are likely to occur as a result of the proposed works.

(vii) there are no recorded historic heritage sites, at the site of the activity;

There are no record sites within Operative District Plan (planning maps), New Zealand Archaeological Association or with Heritage New Zealand within this vicinity.

(viii) before any equipment, machinery, or operating plant is moved to a new activity site it shall be effectively cleaned to prevent the spread of "pests" or "unwanted organisms" as defined by the Biosecurity Act 1993;

(ix) all equipment, machinery, operating plant and debris associated with the structure or bed disturbance activity shall be removed from the site on completion of the activity;

These requirements are standard conditions for all contractors working near or within river beds and will be adhered to.

(x) the activity shall not result in significant adverse effects on aquatic ecosystems;

Section 6.9 of this report provides an assessment of the actual and potential effects on the aquatic ecosystems and habitats related to the proposed works. In summary, any adverse effects that may occur from the proposed works on the aquatic and riverine ecosystems and habitats are considered to be small in size and scale similar to the occasional bed disturbance that can occur through natural processes and events that are known to occur within this type of river system. Any adverse effects that may occur are not considered to be significant and will not result in any long term or irreversible damage to this river ecosystem or habitat.

(xi) between the beginning of November and the end of May, there shall be no disturbance of the tidal river habitat up to the spring tide level.

The Whitestone River in this location is not tidal and the requirement does not apply.

It is considered that the proposed works meet the standard conditions set out in Rule 48(a) with the exception of Rule 48(a)(iv) relating to reinstatement of the site to original condition. The proposed works are not consistent with this part of (iv) provision as it is for gravel extraction and is therefore not considered relevant to the intent of this assessment.

Conclusion

Overall, the proposed works are seen to have a less than minor adverse effects on the environment. The proposed works have been shown to contribute a number positive effects on maintaining and protecting the integrity of key infrastructure and minimising the potential risk of flooding during high river flow events. Should the NZ Transport Agency not undertake the proposed works, i.e. removal as soon as practicable the build-up of debris against the structure in the river bed (which may adversely

affect flood risk, drainage capacity or bed and bank stability) it may be in breach of Rule 48(b) of the Regional Water Plan.

8. Mitigation Measures

Based on the above assessment, the adverse effects of the proposed activity will be mitigated by way of the following measures:

- The works being carried out in accordance with the details included with the application.
- The consent holder minimising discolouration of the River downstream of the site by limiting access to flowing water as much as possible.
- No storage of fuel or refuelling of vehicles and machinery in the River bed.
- The passage of fish shall not be prevented.
- Works shall not cause erosion of the banks or bed of the River.
- Works shall not be carried out in flowing water between 1 May and 30 November inclusive.
- A condition providing for accidental discovery of archaeological material.

9. Monitoring

The NZ Transport Agency is prepared to accept monitoring conditions similar to existing resource consents it maintains for the State highway network.

10. Consideration of alternative locations or methods

There are two main alternative options that can be considered with respect to this matter:

Option 1:	Do nothing approach: which would essentially allow the on-going aggradation of gravel at the bridge to occur without removing any build-up.
Option 2:	Apply for resource consent approach: which requires the NZ Transport Agency to apply for the necessary resource consent to undertake gravel extraction within the Whitestone River Bridge on SH 94.

The implication of the Option 1 is that the build-up of the river bed under the Bridge will continue to increase to higher levels and the ability of the Bridge to withstand higher flows underneath will be reduced thereby increasing the likelihood of a bridge washout, damage to the Bridge and/or Bridge approaches in a flood event. This could lead to the loss of the Bridge, closure of SH94, effects on vital services (telecommunications in this instance) and/or lengthy detours for SH94 users, particularly for tourist traffic travelling the route between Queenstown and Te Anau/Milford Sound. Option 1 is considered unacceptable to the NZ Transport Agency as the infrastructure provider as the associated risks and costs to the community and the travelling public of a bridge washout and/or damage to the bridge or approaches to the bridge would be significant. Further to this, the NZ Transport Agency would be failing to meet its statutory obligations under the Land Transport Management Act (2003) and Rule 48(b) under the Regional Water Plan and therefore considered Option 1 to not a sustainable long term option.

Option 2 is therefore the most appropriate approach for the NZ Transport Agency on this matter. It provides the most comprehensive way to assess any potential and actual of environmental effects of the proposed works. The NZ Transport Agency have therefore prepared this application for resource consent to seek the necessary regulatory approvals to fulfil its statutory infrastructural obligations under the Land Transport Management Act (2003).

11. Consultation

A copy of the application has been forwarded to each the following parties, seeking their written approval:

- Department of Conservation (DoC);

- Te Ao Marama Incorporated;
- Southland Fish and Game;
- Te Anau Rivers Liaison Committee.

12. Notification

Notification of a resource consent application is at the discretion of the Consent Authority (s95A).

One of the thresholds for determining whether to notify an application is consideration of whether the potential adverse effects of the activity on the environment are more than minor or not. In making this determination, the consent authority must disregard effects on persons who have provided written approval and persons who own or occupy land over which the activity will occur, or any land adjacent to that land (s95D). The consent authority may also disregard an adverse effect if a rule permits an activity with that effect.

Written approvals have been sought as listed in Section 11 as the adverse effects of the activity are considered to be minor, the application can be considered without the need for notification.

13. Conclusion – Effects

Overall, any actual or potential adverse effects of the proposal will be avoided, remedied or mitigated such that they will be no more than minor. There will be positive effects arising from the proposed works.

14. Statutory Assessment

Before making a decision on a discretionary activity pursuant to Section 104B of the RMA, Council must consider the proposal in terms of Section 104 of the RMA.

Section 104(1) outlines the following matters, which are relevant to Council's consideration of the application:

> *"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 and 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".*

Section 104(2) states that:

"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."

Council's decision in terms of a **discretionary activity** must be made in terms of Section 104B of the RMA. **Section 104B** states that:

"After considering an application for a resource consent for a discretionary activity or non-complying activity, a consent authority—

(a) may grant or refuse the application; and
(b) if it grants the application, may impose conditions under section 108."

14.4 Southland Regional Policy Statement 2017 (RPS)

The following objectives and policies in Chapter 3: Tangata Whenua; Chapter 4: Water; Chapter 8: Natural Hazards and Chapter 15: Infrastructure / Transportation of Southland Regional Policy Statement (2017) are considered relevant to this application.

Chapter 3: Tangata Whenua
Objective TW.2: Provision for iwi management plans*:*
All local authority resource management processes and decisions take into account iwi management plans.

Policy TW.1: Treaty of Waitangi*:*
Consult with, and enhance tangata whenua involvement in local authority resource management decision-making processes, in a manner that is consistent with the principles of the Treaty of Waitangi/Te Tiriti o Waitangi.

Chapter 4: Water
Objective WQUAL.1: Water quality goals*:*
Water quality in the region:

(a) safeguards the life-supporting capacity of water and related ecosystems;
(b) safeguards the health of people and communities;
(c) is maintained, or improved in accordance with freshwater objectives formulated under the National Policy Statement for Freshwater Management 2014;
(d) is managed to meet the reasonably foreseeable social, economic and cultural needs of future generations.

Policy WQUAL.1: Overall management of water quality:

(a) Identify values of surface water, groundwater, and water in coastal lakes, lagoons, tidal estuaries, salt marshes and coastal wetlands, and formulate freshwater objectives in accordance with the National Policy Statement for Freshwater Management 2014; and
(b) Manage discharges and land use activities to maintain water quality, or improve it, to ensure freshwater objectives are met.

Policy WQUAL.2: All waterbodies
Maintain or improve water quality, having particular regards to following contaminants:

(a) nitrogen;
(b) phosphorus;
(c) sediment
(d) microbiological contaminants

Policy WQUAL.7: Social, economic and cultural benefits
Social, economic and cultural benefits Recognise the social, economic and cultural benefits that may be derived from the use, development or protection of water resources

Policy WQUAL.11: Sources of community water supplies

Integrated management: Integrate the management of land use, water quality, water quantity, coast and air, and the use, development and protection of resources wherever possible to achieve the freshwater objectives formulated in accordance with Policy WQUAL.1.

Policy WQUAN.1: Instream values*:*
Maintain instream values of surface water that derive from flows and levels of water, while recognising the special circumstances of the Waiau catchment.

Policy WQUAN.7 – Social, economic and cultural benefits:
Recognise the social, economic and cultural benefits that may be derived from the use, development or protection of water resources.

Policy WQUAN.8 – Integrated management:
Integrate the management of land use, water quality, water quantity and use and development of resources wherever possible.

Objective BRL.1 – Lake and river bed values:
All significant values of lakes and rivers are maintained and enhanced.

Policy BRL.1 – Managing effects on values and physical processes*:*
Regional plans shall include policies and methods that:

- *(a) while recognising the need for some structures to be located within the beds of rivers and lakes, avoid as far as practicable, and only where avoidance is not practicable, remedy or mitigate adverse effects of activities in the beds of lakes and rivers on:*
  - *(i) natural character;*
  - *(ii) instream ecological values, including bird habitat;*
  - *(iii) historic heritage and cultural values, particularly tangata whenua cultural values, and spiritual values;*
  - *(iv) amenity values;*
  - *(v) recreational values;*
  - *(vi) the performance and operation of critical infrastructure;*
- *(b) manage adverse effects of activities in the beds of lakes and rivers on:*
  - *(i) erosion and deposition processes;*
  - *(ii) flooding risk, bank stability and drainage capacity;*
  - *(iii) the social, economic, cultural and environmental wellbeing of the community;*
- *(c) recognise the outstanding characteristics identified in water conservation orders applying to rivers within the region.*

Policy BRL.2: Existing use of lakes and river beds
Lawfully established structures and activities in the beds of lakes and rivers will be recognised, including the need for maintenance, enhancement and upgrading, while avoiding wherever practicable, mitigating or remedying, any adverse effects. Where the use, maintenance, enhancement and upgrading of such structures will have no more than minor adverse effects on the environment, these activities will be specifically provided for.

Policy BRL.3 – Managing gravel resources:
The region's fluvial gravel resources shall be managed sustainably and in such a way as to:

- *(a) manage adverse effects of removal of gravel on the ecological, recreational, amenity and cultural values, particularly tangata whenua cultural values, existing uses, natural character and physical processes of lakes and rivers;*
- *(b) avoid or remedy the adverse effects of rivers on adjacent land; and*
- *(c) provide for the social, economic and cultural wellbeing of people and communities.*

Policy BRL.5 – Social, economic and cultural benefits:
Recognise the social, economic and cultural benefits that may be derived from the use, development or protection of river and lake beds.

Chapter 8: Natural Hazards

Objective NH.1 – Communities becoming more resilient:
The risks to people, communities, their businesses, property and infrastructure from the effects of natural hazards are understood and avoided, remedied or mitigated, resulting in communities becoming more resilient.

Policy NH.4. – Management priorities:
In managing natural hazards, the following implementation priorities are to be adopted:

1) *avoid exposure to areas at significant risk from natural hazards where practicable by adopting a precautionary approach;*
2) *mitigate the effects of natural hazards by managing land use in areas known to be susceptible to the effects of natural hazards;*
3) *undertake physical works needed to reduce the potential for the natural hazard to affect people and infrastructure.*

Chapter 15: Infrastructure / Transport

Objective INF.1 – Southland's infrastructure:
Southland's regionally significant, nationally significant and critical infrastructure is secure, operates efficiently, and is appropriately integrated with land use activities and the environment.

Policy INF.1 – Regional, national and critical infrastructure
Recognise the benefits to be derived from, and make provision for, the development, maintenance, upgrade and ongoing operation of regionally significant, nationally significant and critical infrastructure and associated activities.

Policy INF.2 – Infrastructure and the environment:
Where practicable, avoid, remedy or mitigate the adverse effects of infrastructure on the environment. In determining the practicability of avoiding, remedying, or mitigating adverse effects on the environment, the following matters should be taken into account:

(a) any functional, operational or technical constraints that require the physical infrastructure of regional or national significance to be located or designed in the manner proposed;
(b) whether there are any reasonably practical alternative designs or locations;
(c) whether good practice approaches in design and construction are being adopted; and
(d) where appropriate, and such measures are volunteered by a resource user, whether any significant residual adverse effects can be offset or compensated for….

Policy INF.6 – Promoting consistent and integrated management of infrastructure across the region:
Provide for the integrated management of the region's infrastructure by:

(a) recognising the interconnected nature of natural and physical resources; and
(b) promoting a collaborative and consistent approach to managing infrastructure, particularly infrastructure networks that crosses zone and/or territorial boundaries.

Objective TRAN.1: Transport and land use

Development of transport infrastructure and land use take place in an integrated and planned manner which:

(a) integrates transport planning with land use;

(b) protects the function, safety, efficiency and effectiveness of the transport system;

(c) minimises potential for reverse sensitivity issues to arise from changing land uses;

(d) provides for positive social, recreational, cultural and economic outcomes;

(e) minimises the potential for adverse public health and environmental effects;

(f) enhances accessibility and connectivity, maximising transport choice for users of the transport system.

Policy TRAN.4 – Protection of health and environmental values:
Manage transport activities to avoid, remedy or mitigate adverse effects on public health and environmental values.

Conclusion
The proposed works are consistent with the objectives and policies stated above from the Southland Regional Policy Statement (2017). The proposed works are required to protect and maintain regionally significant infrastructure that exists at the Whitestone Bridge from potential natural hazards arising from flooding (Objective INF.1, Policies INF1, 2 & 6). This includes the key transportation link SH 94 and the fibre optic cable that is placed along the Bridge. The proposed works are specifically required to manage the risks to people, communities, their businesses, property and infrastructure from the effects of natural hazards (Objective NH.1. and Policy NH.4).

The proposed gravel extraction will be undertaken in a manner that manages the adverse effects on the ecological, recreational, amenity and cultural values, particularly tangata whenua cultural values, existing uses, natural character and physical processes of lakes and river (Objectives WQUAL.1, WQUAN 1 & BRL.1. Policies WQUAL 1, 2, 7, 11, WQUAN 1, 7 8, & BRL.1,2,3, 5). In this regard, the proposed works will avoid working within / near the wet bed; occur during low flow periods; will not decrease the volume or flow of the river; create any significant sediment discharges and avoid where possible trout spawning season. The proposed works will also avoid disruption during peak summer transportation periods (23 December – 10 January). Access along the river bed will not affected by the proposed works. Therefore, the proposed works are deemed necessary and will be undertaken in a manner consistent with the objectives and policies set out in the Regional Policy Statement.

14.5 Proposed Southland Water and Land Regional Plan 2018

The following objectives and policies in the Proposed Southland Water and Land Plan (2018) are considered relevant to this application.

Objective 1:
Land and water and associated ecosystems are sustainably managed as integrated natural resources, recognising the connectivity between surface water and groundwater, and between freshwater, land and the coast.

Objective 9B:
The effective development, operation, maintenance and upgrading of Southland's regionally significant, nationally significant and critical infrastructure is enabled.

Objective 14:
The range and diversity of indigenous ecosystem types and habitats within rivers, estuaries, wetlands and lakes, including their margins, and their life-supporting capacity are maintained or enhanced.

Objective 17:
The natural character values of wetlands, rivers, lakes and their margins, including channel and bed forms, rapids, seasonal variable flows and natural habitats, are protected from inappropriate use and development.

Objective 18:
All activities operate in accordance with "good management practice" or better to optimise efficient resource use, safeguard the life supporting capacity of the region's land and soils and maintain or improve the quality and quantity of the region's water resource.

Policy 26A – Infrastructure
Recognise and provide for the effective development, operation, maintenance and upgrading of regionally significant, nationally significant and critical infrastructure in way that avoids where practicable, or otherwise remedies or mitigates, adverse effects on the environment.

Policy 28 – Structures and bed disturbance activities of rivers (including modified watercourses) and lakes

Manage structures, bed disturbance activities and associated discharges in the beds and margins of lakes, rivers and modified watercourses, to avoid, remedy or mitigate adverse effects on:

1. water quality and quantity;
2. habitats, ecosystems and fish passage;
3. indigenous biological diversity;
5. the spiritual and cultural values and beliefs of the tangata whenua;
6. mātaitai and taiāpure;
7. public access (except in circumstances where public health and safety are at risk) and amenity values;
8. natural character values and outstanding natural features;
9. river morphology and dynamics, including erosion and sedimentation;
10. flood risk;
11. infrastructural assets;
12. navigational safety; and
13. landscape values.

Policy 29 – Provide for the extraction of gravel

Recognise the value of gravel and provide for its extraction to meet the social, economic and cultural needs of the community in a way that avoids, remedies or mitigates adverse effects on land, groundwater quality, rivers and their margins; and:

1. for river based extractions, requires the restoration of aquatic and riparian habitat once the gravel extraction activity has ceased; and
2. results in no long-term net loss of habitat in the river channel, bed or floodplain; and
2a. ensures that the rate and volume of gravel extraction is sustainable; and
3. ensures no degradation of flood protection and erosion control infrastructure and the integrity of physical resources; and
4. does not adversely affect the Ngāi Tahu cultural values and interests associated with the land or river, including taonga species habitat, mahinga kai, mātaitai and taiāpure; and
5. results in no long-term adverse effects on recreational values; and
6. maintains public access (except in circumstances where public health and safety are at risk).

The proposed works are consistent with the objectives and policies stated above from the Proposed Southland Regional Land and Water Plan (2018). The intent of the gravel extraction works is for flood and erosion control and to protect important infrastructure (Objective 9B, Policies 26A and 28). The proposed works will mainly occur in the dry bed with only works within the wet bed where it is deemed necessary to protect key bridge infrastructure and to mitigate against potential flooding hazards. The proposed works will be limited to an area predominantly upstream of the Whitestone Bridge and have a short duration (2 to 5 days). Any effects arising from this disturbance are considered less than minor due to the scope of the works, the size of the river bed affected and the infrequent nature of the activity. For these reasons the proposal is considered consistent with Objectives 1, 14, 17, 18 and Policies 28 and 29. It is noted that good management practices (Objective 18) will be employed for the gravel extraction works by avoiding works in / near the wet bed where possible, undertaken during period of low river flow, not impact on the volume and flow of the river and outside trout spawning where possible. Other practices including care of cleaning of pest plant material / unwanted organisms, washing machinery offsite will also be undertaken. Overall, the proposed works are consistent with intent of the objectives and policies stated above in the Proposed Southland Regional Land and Water Plan.

14.6 Operative Regional Water Plan for Southland (2010)

The following objectives and policies in of Regional Water Plan for Southland (2010) are considered relevant to this application:

Objective 2 – Maintain water quality
To manage water quality so that there is no reduction in the quality of the water in any surface water body, beyond the zone of reasonable mixing for discharges, below that of the date this Plan became operative (January 2010).

Objective 3 – Surface water bodies other than in Natural State Waters
In surface water bodies classified as mountain, hill, lake-fed, spring-fed, lowland (hard bed), lowland (soft bed) and Mataura 1, Mataura 2 and Mataura 3:

(a) bathing, in those sites where bathing is popular;
(b) trout where present, otherwise native fish;
(c) stock drinking water;
(d) Ngāi Tahu cultural values, including mahinga kai;
(e) natural character including aesthetics.

Objective 10 – Habitats and ecosystems:
To maintain or enhance the diversity and integrity of aquatic and riverine habitats and ecosystems.

Policy 1A – Take into account Iwi Management Plans
Any assessment of an activity covered by this plan must take into account any relevant Iwi Management Plan.

Policy 3 – No reduction in water quality
Notwithstanding any other policy or objective in this plan, allow no discharges to surface water bodies that will result in a reduction of water quality beyond the zone of reasonable mixing, unless it is consistent with the promotion of the sustainable management of natural and physical resources, as set out in Part 2 of the Resource Management Act 1991, to do so.

Policy 32– Manage structures and bed disturbance activities in the bed of rivers (including streams and modified watercourses) and lakes
Manage structures and bed disturbance activities in the beds of rivers and lakes, to avoid, remedy or mitigate adverse effects on:
(a) water quality and quantity;
(b) habitats, ecosystems and fish passage where this is normally expected to occur;
(c) indigenous biological diversity;
(d) historic heritage, and the spiritual and cultural values and beliefs of the tangata whenua; (e) public access (except in circumstances where public health and safety are at risk) and amenity values;
(f) natural character and outstanding natural features;
(g) river morphology and dynamics, including erosion and sedimentation;
(h) flood risk;
(i) infrastructural assets;
(j) navigational safety.

Policy 33: Provide for the extraction of gravel
Provide for the extraction of gravel to meet the needs of the community, in a way that avoids, remedies or mitigates adverse effects on the riverine environment; and
(a) maintains or enhances aquatic and riparian habitat; or
(b) equates to no net loss of habitat in the river channel and floodplain; or
(c) maintains or enhances flood protection, erosion control or the integrity of physical resources.

Policy 36: Promote good environmental practice

Use non-regulatory methods to promote good environmental practice in relation to structures and bed disturbance activities.

Conclusion

The proposed works are consistent with the objectives and policies stated above from the Regional Water Plan for Southland (2010). In this regard, the gravel extraction works are deemed necessary to protect key bridge infrastructure and to mitigate against potential flooding hazards. The proposed works will result bed disturbance that is limited to an area 2000m above / 100m below the location of the Whitestone Bridge. Any effects arising from this disturbance are considered less than minor due to the scope of the works, the size of the river bed affected and the infrequent nature of the activity. For these reasons the proposal is considered consistent with Objectives 2, 3 & 10 and Policies 3 and 32. The proposed works are also consistent with Policy 33 in that it is being undertaken to maintain or enhance flood protection, erosion control and integrity of physical resources (i.e. Whitestone Bridge). The proposed works will comply with good environmental practices (Policy 36) by avoiding works in / near the wet bed where possible; occurring during period of low river flow; not impact on the volume and flow of the river and outside trout spawning where possible. Other practices including care of cleaning of pest plant material / unwanted organisms, washing machinery offsite will also be undertaken. This application has considered the Te Tangi A Tauira –The Cry of the People, Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008 (Te Tangi a Tauira) the Iwi Management Plan in accordance with Policy 1A. Overall, the proposed works are consistent with intent of the objectives and policies stated above in the Regional Water Plan for Southland.

14.7 Other Matters – Section 104(1)(c) – Te Tangi A Tauira – Natural Resource and Environmental Iwi Management Plan (2008)

The relevant section of Te Tangi A Tauira –The Cry of the People, Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan 2008 (Te Tangi a Tauira) is section 3.5.15 Activities in the Beds of and Margins of Rivers. The following policies on gravel extraction are considered relevant:

Policy 1: Assess applications for gravel extraction in terms of the following considerations:

a. cultural values associated with the River (e.g. mahinga kai or taonga species habitat);

b. amount of material extracted;

c. design of extraction operations;

d. times of year that extraction will occur;

e. number of existing consents associated with the location;

f. how any adverse effects are being mitigated;

g. monitoring provisions;

h. cumulative effects assessment.

Policy 4: Require consent conditions for gravel extraction activities stipulating the use of "work windows" and other methods to ensure that such activities do not:

a. disturb roosting and/or nesting sites of birds during the operation / activity;

b. adversely effect native fish species (e.g. interrupt spawning);

c. cross flowing water with heavy vehicles;

d extract gravel where there is, or there is the potential to be running water;

e. Damage to native vegetation on the river bed or riparian area.

Policy 11: Require that the placement of culverts and other flood works in the beds or margins of waterways is such that the passage of native fish and other stream life is not impeded.

Policy 13: Require that the placement of culverts or other flood works activities in the beds or margins of waterways occurs in a manner that minimises disturbance to the streambed.

Policy 15: Require that the placement of culverts and other flood works activities in the beds or margins of waterways occur at times of low or no flow.

The proposed works are considered to be consistent with the policies in Te Tangi A Tauira –The Cry of the People, Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan (2008). The proposed works have been assessed against the matters stated in Policy 1 and will be undertaken in such a manner that meets the requirements set out in Policy 4, 11, 13 and 15 of this iwi Management Plan.

15. Part 2 Purpose and Principles of the RMA

In reaching a decision on a resource consent application, Council has to be satisfied that in granting consent to the application, Part 2 Purpose and Principles of the Resource Management Act (the Act) will be achieved.

The purpose of the Act is to promote the sustainable management of natural and physical resources. The SH94 Bridge over the River is a physical resource and must be sustainably managed. The removal of gravel to protect the Bridge and SH94 is considered consistent with this.

Additionally, the proposal is not considered an inappropriate use in the bed of the River (Section (6a)) and is an efficient use of natural and physical resources (Section 7(b)). Based on the assessment in the Section 6 AEE, it is concluded that the proposed activity will meet the purpose and principles of the RMA.

16. Conclusion

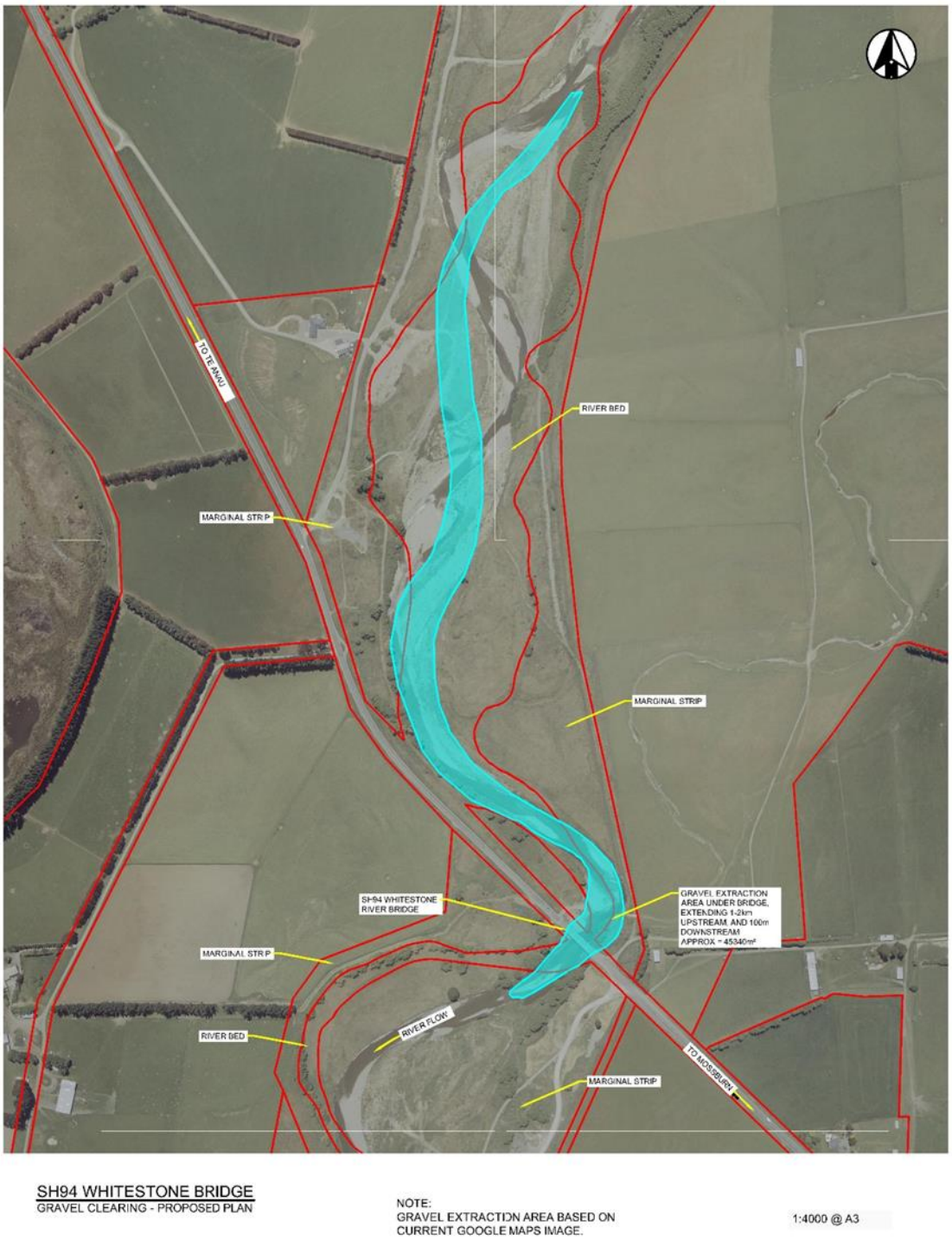
The NZ Transport Agency requires the proposed works be undertaken to ensure the on-going security and functioning of the Whitestone Bridge (SH 94). The proposed gravel extraction works involves disturbance to the river bed and bank but will only be carried out when necessary and during a period of low River flow or from the dry bed to minimise adverse effects on the watercourse and surrounding habitats.

The NZ Transport Agency has statutory obligations under the Land Transport Management Act (2003) to contribute to an effective, efficient and safe land transport system in the public interest. The NZ Transport Agency therefore seeks to ensure that its roading infrastructure being State highway 94 in this instance is protected from adverse weather events that include flooding, erosion and inundation. The proposed works are deemed necessary to ensure there is sufficient space within the bed of the River for water to pass and to flow under the Bridge, particularly in high flow events, without aggrading significant deposits of material into the Bridge structure. The proposed works therefore seek to remove the gravel build-up and deposits (beaches) which create the flood risk to the Bridge and SH94.

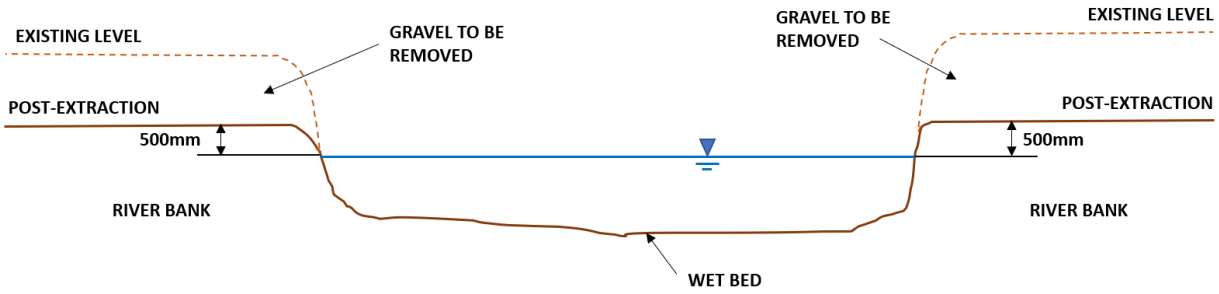
The proposed works has been assessed against the relevant objectives and policies of the relevant statutory documents, and has been found to be consistent with the Proposed Southland Water and Land Plan (2018), Operative Regional Water Plan for Southland (2010), Operative Regional Air Plan for Southland (2016) and the Operative Southland District Plan (2018), Te Tangi A Tauira –The Cry of the People, Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan (2008). For

these reasons it is appropriate for the Council to consider this application for resource consent and approve it without notification.

Appendix 1 – Plans

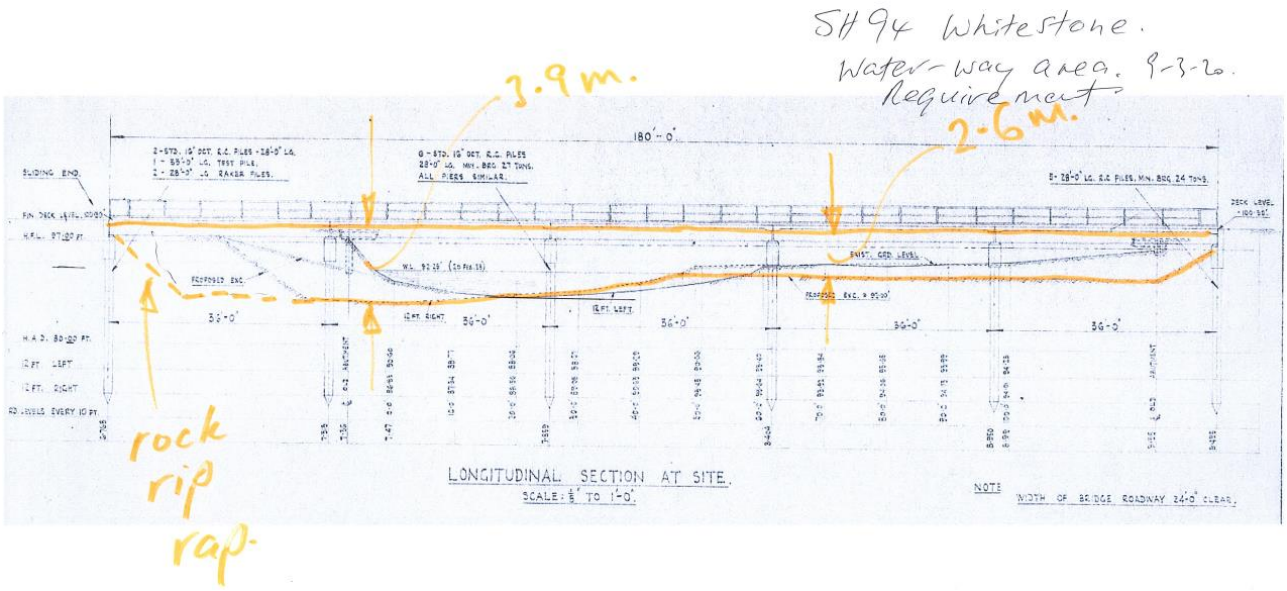


Above: Plan of extraction area



SH94 WHITESTONE RIVER BRIDGE BED CLEARING
GENERAL CROSS-SECTION

Above: Example cross section showing typical gravel removal in the bed



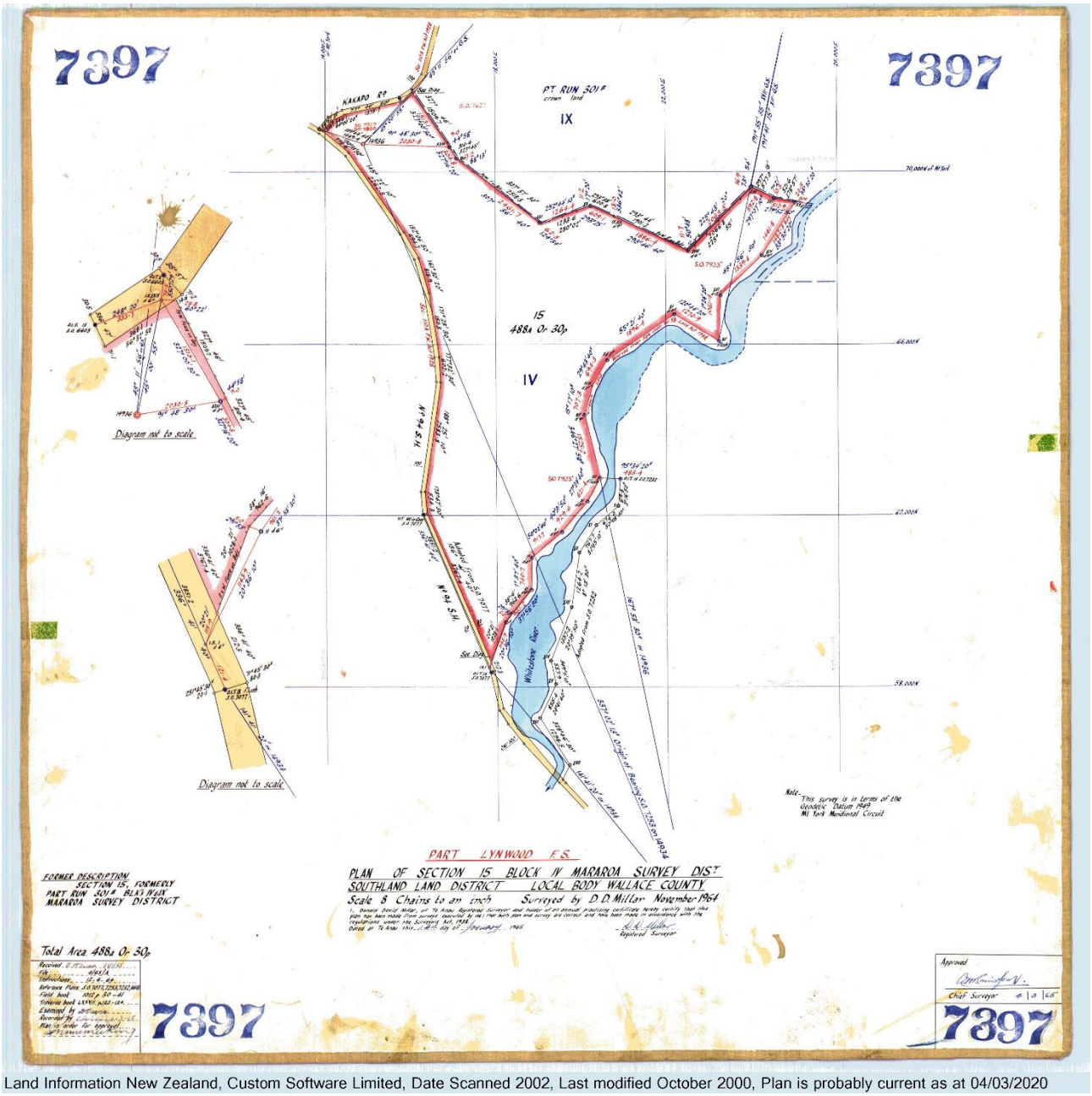
Above: Cross section at existing bridge showing desired bed level (orange line)

Appendix 2 – Photos

Above: Looking downstream to bridge (recent)

Above: Looking downstream to bridge (2014)

Appendix 3 – SO Plan



Land Information New Zealand, Custom Software Limited, Date Scanned 2002, Last modified October 2000, Plan is probably current as at 04/03/2020