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Annexure A

Saxton Creek Capacity Upgrade:

Annexure A to resource consent applications for Stages 3A, 3B and 3C

- **Background**
- **Description of site and surrounds**
- **Assessment of Environmental Effects**
- **Proposed Conditions**
- **Statutory Assessment**

(revised 11.7.18 to reflect Stage 3D application)

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Contents

1 Introduction and Background

Saxton Creek is a small waterway at the southern end of the Nelson City Council boundary with Tasman District Council (Figure 1). The creek has two distinct branches, the North Branch which rises in the foothills on the Nelson City side of the boundary and the South Branch which rises in the Tasman District. This application relates to the South Branch, but affects a small part of the North Branch where the two branches join.

Saxton Creek has been subject to flooding, and was badly affected by the December 2011 storm event and the April 2013 flood. The catchment is also taking more stormwater from the new housing and the proposed rest home development between Champion Road and Saxton Field.

Work is being done in stages to rectify that issue by upgrading the capacity to cope with 1 in 100 year flood events (1% Annual Exceedance Probability (AEP), sometimes called Q100), as described in Table 1 below, and as shown in Figure 1.

Resource consents have been granted for the Stage 1 upgrade of Saxton Creek through Saxton Field, and construction work is currently underway. The Stage 2 works in the upper reaches have been completed, in two parts.

Stage 3 of the upgrade involves the middle section of Saxton Creek.

Stage	Description	Consent Number	Status
Stage 1	Saxton Field reach	RM145209, RM145209A, RM145209B, RM145209C	Under construction
Stage 2	Riding for Disabled bridge and Gravel Trap (downstream of Champion Rd)	RM145269, RM155136, RM155137, RM155138	Completed
	Through 145 & 187 Champion Rd	RM155266, RM155267, RM155268.	Completed
Stage 3	Stage 3A Stage 3B Stage 3C		Current proposal

Table 1: Summary of stages for Saxton Creek upgrade, and status.

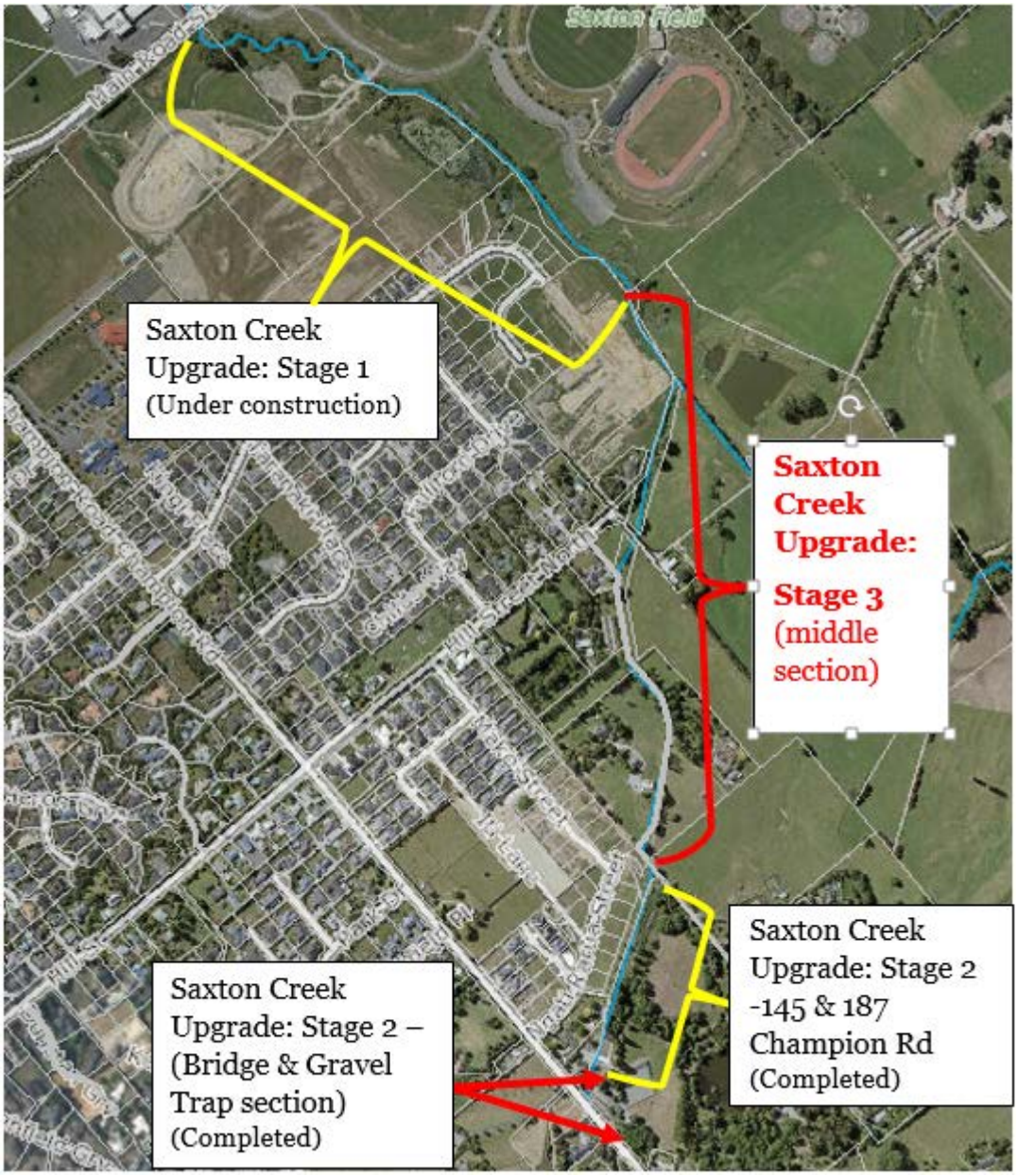

Figure 1: Saxton Creek - Champion Road to Main Road Stoke, showing the locality of the proposed Stage 3 works.

Proposed Stage 3 Works

The Stage 3 upgrade works propose to modify an 880 m length of Saxton Creek from near the end of Ngati Rārua Street (off Champion Road) downstream to where the creek enters Saxton Field.

Although the works are principally to upgrade the flood capacity of the creek, the proposal will also involve:

- Completion of a walking/cycling pathway along the creek, connecting Saxton Field to Champion Road via the Ngati Rārua Street esplanade pathway.
- Establishing the creek completely within a publicly-owned esplanade reserve.

- Landscaping and planting within the esplanade to provide shade and better fish habitat.

Phasing

The construction of Saxton Creek Upgrade Stage 3 will be completed in phases in recognition of the different land ownerships through which the creek flows, to ensure access is maintained for residents and to ensure existing stormwater infrastructure is not compromised.

The consent application has been split into three portions, being 3A, 3B and 3C to reflect each of these phases, as shown on Figure 2.

- **Stage 3A** includes the construction of approximately 100m of channel, a new bridge to provide access to numbers 3A-D Hill St[1], the extension of Ngati Rārua Street, footpaths, landscape planting and the driveways to 3A-D Hill St and 25 Hill St.

- **Stage 3B** is the upgrade of the channel from the eastern side of Saxton Field to the immediately downstream from the existing access to 1A Hill St. This reach of the works falls within esplanade reserve already owned by Council. This stage will include the channel upgrade, footpath construction, landscape planting and timber retaining walls in localised places resulting from the undulating topography on the adjacent land.

- **Stage 3C** is the upgrade of the channel between Stage 3A and Stage 3B. This stage will include the channel upgrade, footpath construction, landscape planting and short timber retaining walls in localised places resulting from the undulating topography on the adjacent land. There are four HAIL sites along this reach which will be affected by earthworks. A separate resource consent application in relation to these sites will be made under the National Environmental Standard for contaminated land. There is also disused groundwater bore affected by the works. This will be sealed and a separate consent application will be lodged to de-commission it.

A separate application has been lodged for Stage 3D, which is construction of a new bridge to replace the existing culvert access to 1A Hill Street.

Stages 3B and 3C will include the installation of a number of electrical ducts under the new channel to allow existing overhead power lines to be installed underground.

Stage 3A must occur first to ensure access to numbers 3A, 3B, 3C and 3D Hill Street is maintained. Stages 3B and 3C can then be progressed independently or together. At this stage it is anticipated that all three stages will be constructed continuously.

Resource consent applications for Stages 3A, 3B and 3C are being applied for concurrently but separately, to provide for construction flexibility if needed. The works involved in each stage are defined in more detail in the specific, individual applications. All three applications rely on a combined set of appendices, comprising this Annexure and Annexure B containing the design drawings, the design basis report, the landscape plans and planting

[1] The existing accessway serving 3A-D Hill St follows Saxton Creek from near 7 Hill St, and is required for the stream widening works.

plan, the aquatic Assessment of Environmental Effects, the cultural effects assessment, written approvals and certificates of title.

Until the flood capacity upgrade of Saxton Creek is completed, Nelson City Council and Tasman District Council (TDC) have agreed that TDC will restrict flow through the Champion Road culvert to $7m^3/s$. This is in order to limit flooding downstream of Champion Road in the interim until the channel has been upgraded and can accommodate the full design full.

In addition to the Stage 3 works, the Council is also considering Stage 4 – upgrading of the channel and culverts under and downstream of Main Road Stoke, to the sea.

The intention is that once those works are completed, Saxton Creek would have a flood design capacity for 1% AEP through and downstream of Champion Road. It is currently 43% AEP (2.33 year design flow).

2 Description of the Site and Surrounds

2.1 The Site (overall)

The site locality for the proposed Stage 3 works is shown in Figure 2 below.

Except for 50-60m each at the upper and lower ends, the portion of stream subject to the proposed works flows through land that currently has rural and rural residential activity and amenity.

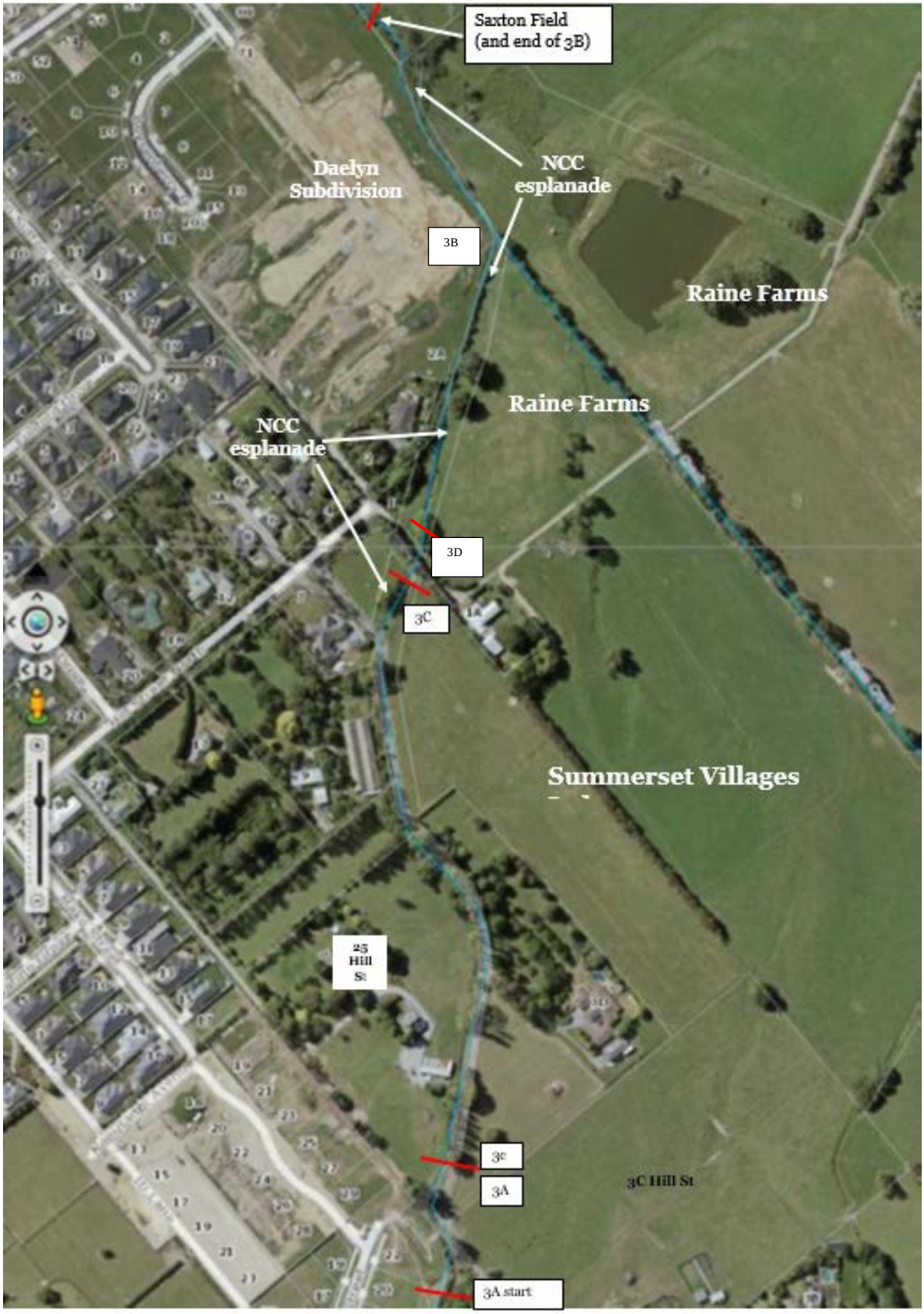

Figure 2: Locality map of Stage 3 Saxton Creek upgrade, with the boundaries for sub-stage 3A, 3B and 3C marked in red. The Stage 3 project starts behind 20 Ngati Rārua St (at the southern end) and finishes just inside Saxton Field in the north.

Commencing at the upper end - the creek above the subject works had flood upgrade works completed in 2015/16 (Figures 3 and 4).

Figure 3: End of current Stage 2 works and commencement of proposed Stage 3A

Figure 4: Looking upstream, Stage 2 works behind Ngati Rārua St.

The stream runs through esplanade reserve past the Waimeha detention pond, and then flows north through 25 Hill Street on the western side of the shared accessway (Figure 5 and 6) that serves the properties at 3A-D Hill Street.

The stream through much of 25 Hill St is open and without riparian vegetation, is accessible to stock. For the first 70m or so the left bank (Stage 3A transitioning to Stage 3C) has been retained using old tyres (Figure 5 and 6).

Figure 5: 25 Hill St looking NW from the shared accessway. Saxton Creek runs left to right. Note tyres used to retain the left bank for much of this reach. (Stage 3A transitioning to Stage 3C)

Figure 6: Open stream, tyre retaining wall, 25 Hill St (Stage 3A).

At the lower half of 25 Hill St (Stage 3A) the stream has some shade from poplar and willow trees (Figure 7 and 8).

Figure 7: Look north along shared accessway, 25 Hill St on the left and 3D Hill St on the right. (Stage 3A transitioning to Stage 3C).

Figure 8: 25 Hill St looking south towards the shed close to the creek (Stage 3C).

Below that the creek is tightly confined between the accessway and the former greenhouse at number 9 Hill St. The stream edges are reasonably closely vegetated at this point with a mix of native and exotic vegetation (Figures 9 and 10).

Opposite the old greenhouse, on the eastern side of the accessway, is NCC esplanade reserve that runs all the way to Saxton Field. Beyond the esplanade reserve is rural land owned by Summerset Villages, proposed to become a retirement/lifestyle village.

Figure 9: Old glasshouse, 9 Hill St (Stage 3C).

Figure 10: Looking upstream from shared access to 3A-D Hill St.

Below 9 and 7 Hill St, the creek passes through a 1500mm diameter culvert under the shared access to 3A-D Hill St (Figure 10), before passing through relatively open rural land (now NCC esplanade reserve) for about 55m (Figure 11). It then passes through a 1200mm culvert on the driveway to 1A Hill St (Stage 3B starts downstream of this culvert). These culverts represent a significant constraint to flood flows, and are unable to pass even the lowest (2.33 year) design flow.[2]

[2] Section 6, *Design Basis Report*, *Saxton Creek Stage 3*, Cameron Gibson Wells (Annexure B: Appendix 2)

Figure 11: Looking downstream from culvert in Figure 10.

Both sides of stream are NCC esplanade reserve. Pine trees mark Raine Farms boundary. Esplanade reserve continues on true right bank through Raine Farms to Saxton Field.

The stream continues more or less north for another 200m through esplanade reserve (formerly part of Raine Farms) to the confluence with the north branch of Saxton Creek. From there it turns to the west, heading NNW to Saxton Field for approximately 120m, and then 60m into Saxton Field to the project end, at the tie in with the nearly completed Stage 1 works.

While the stream runs through rural and rural /residential environment for most of the length of the proposed works, the character of the surrounding area is proposed to change significantly in the near future.

Plan Change 18 rezoned the land west of Saxton Creek as 'Residential'. The land use has been gradually urbanised, and over time may change for some or all of the existing rural/residential sites.

3A, 3B, 3C and 3D Hill St were rezoned from Rural to Rural (Higher Density Small Holdings Area). 3B and 3C Hill St have recently been purchased by Wakatu Incorporation, and combined into one development site, with part of 3B on the hill subdivided off for a separate residential allotment. They have sought Council approval for a 64 lot Special Housing Area development, but this SHA has not yet been recommended by the Council to the Minister of Housing. Summerset Villages have gazetted approval for SHA for a retirement/lifestyle village on their Rural Zone land.

In the lower reach of the project (below the 1A Hill St culvert) the land to the west of Saxton Creek is being subdivided as a continuation of the Daelyn development. An esplanade reserve was vested on the true left side of the creek as part of this subdivision. The creek is now fully within NCC-owned esplanade below the 3A-D Hill St accessway culvert, and partially (true right bank) upstream to the boundary with 3D Hill St.

Upstream of 25 Hill St the stream is within the Council esplanade reserve behind developed housing on Ngati Rārua St, and a small part is within the Griffin property (187 Champion Rd). An esplanade reserve is being created from the Griffin property, on the true right bank, and is at the section 223 stage in the RMA process.

The lowest portion of the stream (approximately 60m) is within Saxton Field. Below the works area, the creek flows through Saxton Field, under Main Road Stoke, before discharging into the Waimea Estuary.

The ecological AEE in Annexure B: Appendix 5 also contains information on Saxton Creek and its catchment.

2.2 Fish and Ecology

The ecological AEE describes in detail the existing habitat value and fishery with this reach of Saxton Creek.

It notes that the stream and fishery has endured significant natural and human-induced events over the years, in particular the last 6 years. A habitat assessment undertaken as part of the ecological AEE indicate that the existing stream habitat values within Stage 3 are generally degraded and on average not meeting even 50% of the maximum habitat indicators[3]. Water quality in Saxton Creek has been classified at 'extremely degraded' or 'degraded' with elevated levels of nitrogen, sedimentation and, E.coli, and poor turbidity.

Stage 3A

The Stage 3A or uppermost section of the stream has the worst habitat score. The downstream section runs is through grazed and open pasture, with little shade or riparian vegetation, The banks are eroded and the bed has willow root mats and sediment that limit fish habitat opportunities. Only 3 small eels were found in this section of the creek.

The upper 40m of the Stage 3A section has more riparian cover (willow, gorse, small deciduous trees and flax) and includes several small pools containing 3 eels less than 200mm in length.

Stage 3C

The Stage 3C section is immediately downstream of Stage 3A. Overall the habitat value score was slightly better than Stage 3A. The first portion is a continuation of the open grazed paddock as in Stage 3A, transitioning to grazed but with more shade trees (willows and poplars). There is more riparian vegetation in the run past 9 Hill St to the accessway culvert.

Despite the better shading, and more pools, habitat values are compromised by large deposits of sediment. There is also a partial barrier that would affect the passage for some species of native fish.

Fish species present were 11 small shortfin eels, 2 small longfin eels and about 20 juvenile eels. The only other fish species was a single bully and one banded kokopu whitebait.

[3] Annexure B: Appendix 5, section 5.0.

Stage 3B

The Stage 3B section has the best habitat score of the three sections but still ranks just over 50% of the maximum possible score.

The section from the confluence with the North Branch to Saxton Field has good fish habitat opportunities reflected by electric fishing results of 12 small eels, 11 banded kokopu whitebait and 2 medium-sized long fin eels.

Upstream from the confluence the stream is deeply incised, straight (with less habitat variation), eroded and flanked the true right bank by grazed pasture. The streambed is covered in sediment with poor habitat value. The fish population is sparse.

Summary

The existing habitat value of the Stage 3 section of Saxton Creek is poor, except for the section between Saxton Field and where the South and North Branches join. The fish population largely reflects the habitat value.

2.3 HAIL Sites

In earlier times 25 and 3D Hill St had glasshouses and horticultural uses on them, and therefore parts of the properties are on the NCC register of HAIL (Hazardous Activities and Industries List) sites (NCC#10429 & #10716; #10856 respectively). Part of 9 Hill St, including the existing greenhouse, is also a HAIL site (NCC #10428). All the sites are in the middle section of the proposal area (Stage 3C). See Figure 12.

Figure 12: HAIL sites, within the area to be affected by the Stage 3C works

2.4 Nelson Resource Management Plan

2.4.1 Zoning

The relevant planning maps are 32 and 35. Figure 13 below shows the NRMP zoning and overlays applying to the land (Source: *Top of the South Maps*)

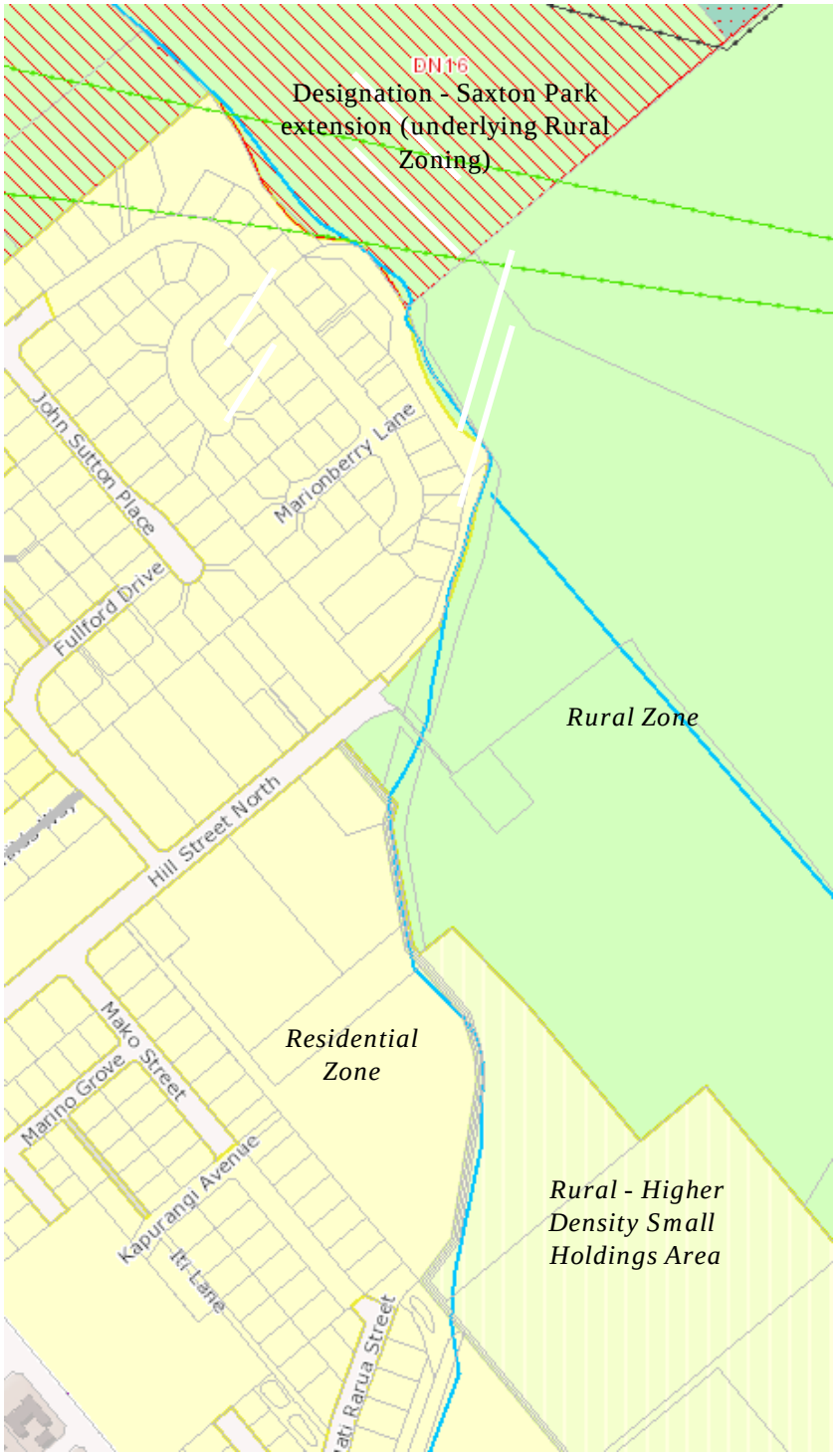

Figure 13:

NRMP zoning and overlays

Blue line is riparian overlay
(Note location of Saxton Creek is not true)

Green line are 66kV transmission lines

2.4.2 Designation

The subject site includes land zoned Residential, Rural (Higher Density Small Holdings Area), and Rural. The Saxton Field portion of the site is zoned Rural but with DN16 designation over it whose purpose is "To provide for future recreation needs of Tasman and Nelson District and to further provide open 'green' space between the urban areas of Stoke and Richmond". The Nelson City Council is owner of the site and requiring authority for the designation

The "nature of works" in Designation DN16 are:

Establishment and maintenance of:

a) contouring and terracing of land and drainage to provide sports fields, stadiums, parks and open space

b) provision of ponds for wildlife and recreation

c) provision of roads, car parks cycleways, paths and trails

d) provision of large scale amenity plantings of trees and shrubs and large areas of mown grass

e) provision for recreation, and utility buildings as and where required

f) services and waterways

g) flood and parking lighting.

The proposed works are consistent with items a), c), d) and f) above.

Part of the channel upgrade for this portion of works is also in the adjoining esplanade reserve, which is zoned Residential.

2.4.3 Services Overlay

The affected Residential zoned land and the Rural (Higher Density Small Holdings Area) land is subject to the Services Overlay. The Services Overlay is principally to ensure roading connectivity when sites are subdivided. This area was rezoned under Plan Change 18 (Nelson South). The Services Overlay will be relevant only in the Stage 3A application, involving the extension of Ngati Rārua St.

2.4.4 Riparian Overlay

Saxton Creek is subject to the Riparian Overlay, as shown in Figure 13. In the NRMP[4] Saxton Creek is defined as having riparian values as follows:

- Conservation (aquatic habitat) priority 3
- Access coast to Champion Road
- Hazard mitigation flood capacity
- Recreation.

The NRMP mandates the setting aside of esplanade reserves or creation of esplanade strips upon subdivision in defined circumstances. The esplanade reserve requirements from the NRMP for Saxton Creek are set out in Table 2 below, and were defined a Consent Order arising from Plan Change 18 which rezoned the area, and made provision for an esplanade reserve along the creek.

[4] Table 6.1, Appendix 6, NRMP

River	Reach	Values	Esplanade requirements
Saxton Creek	From south eastern boundary of Saxton Creek Recreation Reserve to Champion Road	Conservation Access Hazard mitigation Recreation	As shown on the Saxton Creek Survey Plans dated 11 March 2015 included in this appendix except: • in the case of the property formerly legally described as Lots 120 and 121 DP 429225, which has a subdivision approval (RM065150V3) then as set out in that resource consent and its supporting plans. • in the case of the approved subdivision of Lot 2 DP 447598 as shown on the scheme plan for RM125264 (Plan A).

Table 2: Esplanade requirements included in NRMP Table 6.2 of Appendix 6, from consent order Lowes and others v Nelson City Council, Plan Change 18.

The specific requirements for the esplanade reserves for the subject land for these works are shown in Annexure B: Appendix 4.

2.4.5 Transmission Line Overlay

The Electrical Transmission Line Overlay is referenced in rule RUr.42, and requires residential units and educational facilities to be setback 20m from electricity transmission lines. It is not relevant to this proposal.

2.4.6 Flood Path

There is a Flood Path applying to Saxton Creek, defined in the table at the front of the NRMP Planning Maps. This defines a 15m wide flood path from the top of each bank.

There are no other overlays in the NRMP on the area of the subject works e.g. no heritage buildings or trees, and no archaeological sites.

3 Assessment of Actual and Potential Effects

The following assessment has been prepared having regard to the scale and significance of the effects that the activity may have on the environment, and in accordance with the Fourth Schedule of the Act, as required by section 88(2) of the RMA. Regard has also been had to the relevant assessment criteria in the NRMP rules that this proposal impacts.

The assessment draws on the Assessment of Environmental Effects prepared by the Ecologist (**Annexure B: Appendix 5**), the Cultural Effect Assessment prepared by Taiao Unit, Ngati Kuia (**Annexure B: Appendix 6**) and planting plans and schedules prepared by Nelmac Ltd (**Annexure B: Appendix 3**).

3.1 Riparian Values identified in the NRMP

Table 6.1 in Appendix 6 of the NRMP lists four values that are important in respect of Saxton Creek and its margins. These are:

- *Hazard mitigation flood capacity*
- *Conservation (Aquatic Habitat)*
- *Access - coast to Champion Road*
- *Recreation.*

The environmental effects of the proposal are first assessed against these four.

3.1.1 Flood capacity

The extreme storm event of December 2011 resulted in flooding of properties within Tasman District, primarily due to the constraints in the capacity of the Champion Road culvert, worsened by the substantial volume of gravel that was mobilised in the headwaters of the south branch. This moved through the channel to deposit in the Champion Road culverts and the creek bed for approximately 300 metres downstream further affecting the capacity of Saxton Creek.

The later storm event of 21 April 2013 resulted in further flooding to properties in Tasman District and several properties, including one house, in Nelson City, as well as substantial flooding of the industrial area downstream of Main Road Stoke.

Cameron Gibson and Wells Ltd (CGW) were commissioned by Nelson City Council to investigate stormwater flows in Saxton Creek. They modelled 1% (1 in 100 year), 2% (1 in 50), 6.67% (1 in 15) and 43.5% (1 in 2.33) AEP[5]. The flow modelling was updated for the Stage 3 section as part of the Design Basis Report by CGW contained in Annexure B: Appendix 2 of this application. That modelling includes allowance for development of the rural land on the eastern side of Saxton Creek, for residential and higher density residential use (consistent with a retirement village) (Annexure B: Appendix 2, section 3.2).

The Design Basis Report notes that the private culverts serving 1A Hill Street and 3A-D Hill Street cannot pass even the lowest (2.33 year) design flow, meaning the creek then overflows its banks in a number of locations.

Saxton Creek therefore at present has very limited flood flow capacity within the Stage 3 section. The Nelson City Council Land Development Manual 2010 requires a 1% AEP overall system capacity for Saxton Creek (Table 5-2, LDM).

The design capacity of the works described in Appendices 1 and 2 will achieve 1% AEP flow capacity with the upgraded channel, and new bridges (including the one as part of Stage 3D) will meet with a minimum 700mm freeboard to the soffit (Annexure B: Appendix 2, section 6).

[5] Cameron Gibson & Wells Ltd, 2013, *Saxton Creek Stormwater Review – Champion Road to Main Road Stoke*, Prepared for Nelson City Council. Also Section 3 of Annexure B: Appendix 2 of this application.

As noted, the Stage 1 and 2 sections of the creek have been upgraded to 1% AEP. Construction of the Stage 3 section(s) will provide 1% AEP capacity from Champion Road to Main Road Stoke. The last stage would then be the reach from Main Road Stoke to the sea.

The key positive attribute of the proposed works is that it is part of a wider scheme of staged work, which when all are completed, will provide a 1% AEP flow capacity for Saxton Creek from the Champion Road culvert to the Waimea Estuary (as required in order to comply with the NCC Land Development Manual). The creek will then meet the Land Development Manual requirements and give an appropriate level of flood protection to the community.

3.1.2 Conservation (Aquatic Habitat)

A second value listed in Table 6.1 in Appendix 6 of the NRMP as important is 'Conservation (aquatic habitat) Priority 3'. Priority 1, 2 and 3 relates to the size of the rivers or streams, not necessarily the values deserving of protection.

Annexure B: Appendix 5 of this application contains an assessment of effects in terms of the aquatic habitat undertaken by Fish and Wildlife Services. That report considers in detail the current environment in the Stage 3 reach of Saxton Creek, and the likely effects on the aquatic environment that the proposal would have.

The report notes that water quality in Saxton Creek is 'extremely degraded' or 'degraded' with elevated levels of nitrogen, sedimentation, E.coli and poor turbidity. It also states that the Rapid Habitat Assessment evaluation showed existing stream habitat values within Stage 3 are generally degraded and on the average not meeting even 50% of maximum habitat quality indicators[6]. This reflects lack of pools and shading for significant lengths of stream, and high levels of sedimentation or root growth that reduce habitat value.

Notwithstanding this, the report concludes the reach of Saxton Creek that lies within the consent application site is 'important because it contains habitats for indigenous species such as the longfin eel that is in a National Decline status' (AEE, section 6.1, p14). While the existing habitat is degraded there are several large pools that provide reasonable habitat, largely in the section immediately upstream from Saxton Field.

The aquatic AEE recognises there will be short-term effects of the proposed works, and these:

> *will be more than minor in the short term. Bed excavation and channel widening will remove the existing habitat complex of any remaining riffle/pool/run sequence and the undercut banks will be lost. Riparian vegetation providing escape cover and food resource for native fish will be removed. The existing population of fish will be temporarily lost. Some of the burrowing macroinvertebrate populations will have limited opportunities to re-colonise in the new textile cloth and rock environment resulting in a reduction in food supply for native fish.* (AEE p14)

The effects of rock lining and use of textile cloth will be reduced by care to avoid use of differing size rock that can result in multiple layers with large voids that are hard to fill. If this occurs in low flow conditions much of the stream can be sub-surface and within the voids. This will be mitigated with careful choice and placement of rock, overseen by the project ecologist, and by filling of voids where necessary to maintain a constant surface

[6] Annexure B: Appendix 5, section 5.0

flow. The ecologist will also supervise rock placement to create meander patterns in the stream so as to get a mix of riffles/runs and pooling. The ecologist will oversee the placement of logs for instream habitat and novacoil pipe for eel refuges.

The effects of construction can be addressed by best practice techniques:

> *The effects during construction can be mitigated by salvaging fish and transferring them to available habitats up or downstream of Stage 3 sites. In addition best practice construction opportunities will be undertaken such as diverting flow around wetted sites to work in the dry thus mitigating downstream sediment mobilization downstream. Fish passage barriers and sediment controls can be temporarily installed as required.* (AEE p14)

The aquatic AEE notes (p14) that the loss of vegetation and the widening of the channel will result in more stream exposure to the sun. This will elevate water temperatures and encourage weed growth within the stream bed in the short term until new stream plantings mature. The report (p16) highlights the importance of the landscape planting proposed in the application. The planting plan recognises the need to shade the north facing exposed stream bed, with shade trees, planting into the rock work and top edge to reduce heat transfer, using fast growing species. A condition is offered to monitor water temperature and the fishery following the works so that any environmental stressors can be identified and responded to if necessary.

While the channel works, rock armouring and use of textile cloth will modify natural stream function, the aquatic AEE states that:

> *All ten parameters of steam habitat evaluated during the Habitat Quality Assessment will contain higher values than the present condition in the long-term.*
>
> *Overall, in the long-term there will adverse effects because of the permanent loss of large pool and undercut bank habitat, but this will be offset partially, though not completely, by other benefits as discussed above.*

Combined, all completed stages of the capacity upgrades on Saxton Creek will result in more fish abundance levels than current conditions in the long-term. The diversity and relative abundance of some species will change as a result of less pool habitat and more run/riffle habitat. This will be a positive outcome for some species such as inanga. It is not fully understood if shaded pool cover, habitat for banded kokopu, will return to levels that existed prior to capacity upgrade works within the affected reaches. However fish passage for migrating juvenile banded kokopu and koaro to the upland habitats in the left and right branches of Saxton Creek has improved with the removal of previous obstructions as part of the capacity upgrades already completed[7].

The aquatic AEE at page 18 concludes:

> *The long term effects of this proposal includes enhanced flood capacity, maintained Council infrastructure and protected property. The current degraded status of Saxton Creek will be replaced with a dedicated low flow meandering channel and riparian plantings with selected vegetation that will be maintained and will eventually provide shade, cover and habitat for food resources for native fish that will adapt to the new conditions. Other positive outcomes*

[7] Annexure B: Appendix 5, section 6.3

include a prohibition on stock access, the removal of fish pass obstructions, improved bank stability, rehabilitated riparian edges and removal of invasive vegetation.

The AEE notes the adverse long-term effect of the permanent loss of existing habitat that historically has provided environment for some fish species, like banded kokopu. Notwithstanding that, the overall conclusion is that:

the long-term effect of the proposed channel upgrade will be a minor adverse effect that is partially offset by the positive effects identified above.

At page 17 and 18 the aquatic AEE includes recommendations to avoid, remedy or mitigate potentially adverse effects. These have been incorporated in the potential conditions offered as part of this resource consent application.

It is considered that with these mitigation and design measures proposed, the long-term adverse effects will be less than minor.

In addition, the riparian conservation values recognised in the NRMP are broader than just aquatic conservation values, and include the riparian margin. The extensive, largely native planting, along with the exclusion of grazing stock, will have conservation benefits for bird life and other species within a corridor along the stream.

3.1.3 Access and Recreation

The third and fourth values listed in Table 6.1 in Appendix 6 of the NRMP as important for Saxton Creek are 'Access coast to Champion Road' and 'Recreation'.

There historically have been no public access to or along Saxton Creek between Ngati Rārua Street and Saxton Field. As a result of recent subdivision of land an esplanade reserve has been vested in NCC on both sides of Saxton Creek below the culvert shared access to 3A-D Hill St, and on the true right bank between that culvert and the downstream boundary with 3D Hill St. However, there is currently no formed access and none will be formed until the flood upgrade works are completed.

If the Stage 3 upgrade were not occurring, gaining continuous access along the remainder of the stream would depend on subdivision triggering the taking of esplanade reserve. There is no guarantee when that might occur, meaning there could be gaps in access along the stream, or even strips of reserve that are 'landlocked' and inaccessible to the public.

The Stage 3 works, will yield a public esplanade and access now, rather than at some future and unknown timeframe ('a bird in the hand').

The upgrade once completed, in combination with the Stage 1 and 2 works, will create a walking and cycling path on the true left bank of the creek from the near Champion Road, through to Saxton Field (and beyond). The path will enhance access to and along the waterway, including recreational use of the area. It will also greatly improve connectivity to the walking/cycling routes within the developed Saxton Field, to the Daelyn residential development, through to Garin College and the residential area around Champion Road and beyond.

3.2 Amenity

The existing amenity of those parts of Saxton Creek affected by the proposed works is mixed, as shown in Figures 3 to 11.

There is a short section adjacent to 9 Hill St, down to the culvert on the 3A-D Hills St accessway that has reasonably high amenity due to the amount of native vegetation along the banks, although the stream is hard to see and access because of the density of vegetation.

Between the culvert and Saxton Field the creek has little riparian shade trees, with grassy and shrubs on the margins, and some parts with pampas grass overhanging.

In the upper third, the creek in the subject area has low amenity, being essentially an open ditch accessible to stock, with tyre retaining banks in parts and little riparian vegetation, and in other places there are incised, eroded banks.

In addition, the stream for most of its length cannot be appreciated due to inaccessibility as already discussed.

While the proposed new stream channel will have a degree of artificiality due to the shape and rock lining needed for its flood flow functions, the placement of rock will be under the supervision of an ecologist, who is experienced in creating stream beds that function well and look as natural as possible. Care will be taken to provide habitat diversity where possible. As can be seen from the photograph of the recently completed Stage 2 works (Figure 14), vegetation within the stream bed quickly establishes, and the landscape plantings when they get more established will further increase the amenity.

There will be a visual and amenity impact, particularly in the short term, but the proposed planting and landscaping will soften it.

In the longer term it is considered there will be a net improvement in the amenity of the area following the works, as well as the opportunity for the public to access and appreciate it.

Figure 14: Photograph of Stage 2 works completed 2016 – looking upstream towards Champion Rd, esplanade reserve behind Ngati Rārua Street.

3.3 Archaeological or Cultural Finds

No items of archaeological or cultural interest have been identified in the Cultural Effect Assessment, and by reference to the NRMP and Archaeological Association Register. However, an accidental discovery protocol will be in place during the construction works, and is offered as a condition of consent.

3.4 Construction Effects

The physical construction will work around the timing of fish spawning, and avoiding periods of rain and high flow. The offered conditions propose exclusion from working in the native fish spawning areas with defined times, unless the ecologist has determined that sediment levels will be sufficiently low to not pose a risk to any spawning area. The ecologist will also advise on the duration of any diversion.

The construction activity will take account of construction noise standards NZS 6803: 1999. The hours of operation will be limited to 7.30am to 5.30pm Monday to Friday, and 9am to 2pm Saturday, to minimise effects on neighbours. An exception to this is when pumps are used for dewatering or bypass pumping of the stream, when these will need to run overnight. A condition is offered of a noise bund around the pumps to attenuate night time noise.

There will be an excess of cut material that needs to be removed from the site. Some of this will be from the four HAIL sites within the Stage 3C section. Soil testing has established that the levels of both heavy metals and organochlorine pesticides are below the NES soil contamination standards for recreational land use and the sediment guidelines for the protection of ecological receptors. That means soil excavated from these sites can be kept on site within the esplanade area if required. Equally, all HAIL sites meet the disposal requirements for York Valley landfill and site 10716 at 25 Hill St meets the criteria for disposal at a cleanfill site. The disturbance and removal of soil from the HAIL sites will be addressed in the separate resource consent application under NES for contaminated land.

Outside the HAIL sites, there will be waste material such as stripped turf, brush, tree stumps, concrete, old culverts, pavement, fencing, and tyres used for bank retention that will need to be taken to an approved waste disposal facility. The remainder will be cleanfill and will be disposed of to an appropriate lawful site in accordance with the NRMP definition.

There will be a significant number of truck movements to and from the site. The contractor will be required to put in place a traffic management plan and appropriate controls and exclusions to minimise and manage this potential effect. A condition to this effect has been volunteered.

Similarly, a dust, erosion and sedimentation plan is offered as part of the conditions to appropriately manage the potential effects arising from earthworks, as well as cartage.

3.5 Cultural Effects

The Cultural Effect Assessment (CEA), Annexure B: Appendix 6, made a number of recommendations to ameliorate the potential environmental effects of the proposal on fish

and wildlife. These recommendations are summarised below in italics, with responses in regular font:

1) *That the works proceed in a way that maintains instream values where those exist.*

   Best practice will be used to remove and protect fish during the works, and to re-establish suitable habitat prior to their re-introduction once construction is completed. An ecologist will supervise the trapping and relocation of the fish, and final placement of rock within the stream to create riffles and pools to provide a range of aquatic habitat. In addition, the planting plan has been designed to provide shade, plant species that are suitable habitat for insects and which in turn provide food for fish in the stream.

2) *That sediment management plans be designed to ensure downstream effects are minimised.*

   Again best practice will be used to manage sediment. An erosion and sedimentation plan will be prepared and adhered to (and is offered as a condition of consent). Work will be done in the dry where it can be, with bypass pumping, and silt fences and traps will be used to maintain downstream water quality.

3) *That the design of the works considers the inclusion of a wetland to restore some of the original habitat and biodiversity of the area.*

   Given the width of the esplanade reserve established by the Environment Court consent order on Plan Change 18, there is not enough space to establish a wetland within the works area. However the Stage 1 development plans included a wetland area, which is currently being established. This is in the southern corner of Saxton Field, adjacent to the creek, immediately downstream from the proposed Stage 3B works.

4) *That public access is provided for as soon after the completion of the works as practical.*

   As soon as each stage of the works are completed, public access will be available along that part of the stream.

5) *That riparian planting occur as soon as possible after the re-contouring works to support habitat and soil retention.*

   The area will be planted as soon as practicable once the physical works are completed, both for soil conservation and amenity reasons. A condition to revegetate as soon as practicable is offered as part of the application.

6) *That rongoā and bird feeding species such as flaxes and kawakawa, koromiko be included substantially in the replanting.*

   In the planting plan, native plants have been selected to be hardy and provide berries, nectar and attract insects for birds. There is also a selection of plants that can be used for Rongoā, traditional Māori medicine. These are; harakeke, kowhai, totara, ti kouka, hohere, kānuka, manuka, karamu, kohuhu, koromiko and puka. This is described in the Landscape and Planting Plan in Annexure B: Appendix 3.

7) *That iwi have an opportunity to visit the site during or at the completion of the works*

The Council would be happy to work with iwi for this to happen.

It should also be noted that an accidental discovery protocol has offered as a condition of consent, in the event that any items of cultural interest were unearthed by the works.

In summary, the key issues identified in the Cultural Effect Assessment have been given effect to through the design of the proposed works, the planting scheme proposed and the suggested conditions for the consent.

3.6 Dust, Erosion and Sediment Control

The contractor will be required to develop a Dust, Erosion and Sedimentation Control plan for the project, and submit that to the Engineer for approval. The Plan will be lodged with the Council's Monitoring Officer before work commences. The stream works will also be subject to adopting best practice as advised by the engaged ecologist.

The above is offered as a condition of consent.

3.7 Consultation

The applicant has consulted with the owners of properties directly affected by the works. That includes where works are occurring on the land and land is being acquired, as well where access to properties is disrupted or removed by the proposed works.

As part of the preparation of the Cultural Effects Assessment (Annexure B: Appendix 6) a draft was sent by the Ngati Kuia authors to the relevant iwi, including those represented by Tiakina Te Taiao, but no responses were received.

Written approvals are being sought from the directly affected landowners, and from iwi. A table of the status of written approvals is included in Annexure B: Appendix 7. Approvals will be forwarded to Council when they are received.

As the aquatic AEE notes, there are no trout in Saxton Creek, therefore Fish and Game have not been consulted.

3.8 Conditions to Mitigate Adverse Effects

The applicant offers proposed conditions of consent as set out in section 6 of this Annexure.

4 Statutory Considerations

4.1 Section 104 RMA

Section 104(1) of the Act states that subject to Part 2, when considering an application for resource consent, the consent authority shall have regard to any actual and potential effects on the environment of allowing the activity, and any relevant provisions of policy or planning instruments, and any other matter considered relevant and necessary to determine the application.

The matters contained in s104 and in Part II of the RMA apply to the assessment of all resource consent applications. Matters in s104(1) relevant to this proposal are:

> *a. When considering an application for resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to –*
>
> > *a. Any actual or potential effects on the environment of allowing the activity; and*
> >
> > *ab. Any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment offset or compensate for any adverse effects on the environment that will or may result from 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.*

All the matters listed in s104 are subject to Part 2 of the RMA. The extent to which the proposed activity meets the requirements of s104 are outlined below.

There are no national environmental standards relevant to this application. The Freshwater National Policy Statement has been considered below and the proposal is consistent with it. The relevant objectives and policies of the Nelson Regional Policy Statement and the NRMP have been considered and the proposal is consistent with them.

4.2 Objectives and Policies

4.2.1 National Policy Statement – Freshwater Management

The NPS Freshwater Management 2014 contains a number of objectives and policies relevant to this proposal. These are discussed in Table 3 below.

Table 3: Relevant Freshwater NPS Objectives and Policies

Objectives	Policies	Comments
Objective A1 *To safeguard:* *a) the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems, of fresh water; and* *b) the health of people and communities, at least as affected by secondary contact with fresh water;* *in sustainably managing the use and development of land, and of discharges of contaminants.* **Objective A2** *The overall quality of fresh water within a region is maintained or improved while:* *a) protecting the significant values of outstanding freshwater bodies;* *b) protecting the significant values of wetlands; and* *c) improving the quality of fresh water in water bodies that have been degraded by human activities to the point of being over-allocated.*	**Policy A4 and direction (under section 55) to regional councils** *By every regional council amending regional plans (without using the process in Schedule 1) to the extent needed to ensure the plans include the following policy to apply until any changes under Schedule 1 to give effect to Policy A1 and Policy A2 (freshwater quality limits and targets) have become operative:* *"1. When considering any application for a discharge the consent authority must have regard to the following matters:* *a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of fresh water including on any ecosystem associated with fresh water and* *b) the extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on any ecosystem associated with fresh water, resulting from the discharge would be avoided.*	As outlined in the Assessment of Environmental Effects, strict measures will be in place to avoid any contamination of water through sediment, petrochemicals or other chemicals. In addition, fish will be removed from the area prior to construction. The construction will use processes that have been refined over work on many streams in recent years. These techniques protect aquatic life and involve fish salvage, by-pass pumping and working in dry beds to minimise the discharge of sediment to streams. The requirements of the NPS therefore will be achieved.

4.2.2 Regional Policy Statement (RPS)

Those provisions of the Regional Policy Statement (RPS) that are the most applicable to this proposal are discussed in Table 4 below:

Table 4 RPS Objectives and Policies

Area	Objectives	Policies	Comments
WA1.2.1 Quality of Natural Waters	**Objective** *The maintenance and enhancement of the quality of inland water to protect the life supporting capacity of aquatic ecosystems and in specific areas, for urban water supply.*	***Policy WA1.3.5*** *To manage riparian and coastal margins in such a way as to enhance or maintain water quality.*	Most of the existing riparian margins are of low quality and often overgrown with weeds. The planting plan will provide an attractive riparian margin on maturity with shade trees and leaf litter to support good indigenous fish habitat.
DH2.2 Natural Hazards	**Objective DH2.2.1** *Protection of property and human health and safety from the effects of natural hazards.* **Objective DH2.2.2** *Adverse effects from hazard events being minimised.* **Objective DH2.2.3** *Hazard proneness being minimised.*	***Policy DH2.3.5*** *To only undertake physical works, or issue resource consents for physical works to be undertaken, to avoid or mitigate the adverse effects of natural hazards, where Council is satisfied as to:* *i) the need for the work;* *ii) the likely effects of the work on the environment;* *iii) available means of avoiding, remedying, or mitigating likely effects on the environment;* *iv) the costs and benefits of alternative means of achieving the desired outcome including the 'do nothing' option; and* *v) the potential to offset adverse effects through environmental compensation.*	The severe floods in recent years have established the need for the work. The adverse effects on the environment of the proposed work are being addressed. A range of alternatives has been considered, but the 'do nothing' option is not a realist alternative, given that the creek at present cannot cope with even a one in 3 year flood, and Q100 capacity at least is needed. The preferred proposal has negative environmental impacts in terms of the rock-channelling needed to create the necessary flood capacity, but the proposal includes a positive effects, including extensive native planting, reduces bank erosion and sedimentation of habitat, improved recreational and walkway opportunities. It also establishes the final part of what is to be a walking and cycling linkage from Champion Road to Saxton Field and the adjoining new housing areas, contributing to increased accessibility and

Area	Objectives	Policies	Comments
			permeability within the city and to Richmond.
NA5 Riparian and Coastal Margins	**Objective NA5.2.1** *Management of riparian and coastal margins which protects and enhances significant habitats, natural features, natural functions, natural character, landscape, amenity, cultural features and water quality.* **Objective NA5.2.2** *Riparian and coastal margins where natural processes such as floods and erosion do not result in damage to structures or danger to human health and safety.* **Objective NA5.2.3** *Protection and enhancement of public access and recreational opportunity to and along riparian and coastal margins consistent with protection of land ownership rights and conservation values.*	***Policy NA5.3.1*** *To identify and protect the natural character of riparian and coastal margins where any or all of the following features or values exist:* *i) presence of regionally or nationally significant natural features, indigenous vegetation, or regionally or nationally significant habitats of aquatic fauna;* *ii)* *iii)* *iv)* *v) actual or potential occurrence of significantly degraded water quality as a result of non point discharges of pollutants;* *vi) natural hazards such as flooding, erosion or sedimentation, within or adjoining a coastal or riparian margin;* *vii) the need to maintain access to and along riparian and coastal margins for river maintenance or river/ coastal protection works; and/or* *viii) the need to provide wildlife corridors between significant habitat areas.*	The enhancement associated with the proposal will help: a) Improve passage for native aquatic fauna, b) remove stock access to the stream, c) filter nutrients from surrounding land use, d) improvement in water quality through riparian planting and provision of shade, e) address a known flooding hazard, f) develop new access along Saxton Creek, and g) create a planted corridor from the sea to the uplands for plants to disperse and wildlife to migrate in their own biologic time. Collectively the proposal will also support Policy NA5.3.12 as the riparian land management will enhance the values along the stream.

Area	Objectives	Policies	Comments
		Policy NA5.3.12 *To advocate or promote management practices for riparian land that enhance existing or desired natural characteristics and values.*	
NA6.2 Beds of rivers and lakes	**Objective** *Minimal adverse environmental effects from structures on river and lake beds.*	***Policy NA6.3.1*** *To manage river and lake beds in a manner which gives priority to the natural functioning of the river including the ecosystems they contain and the life supporting capacity of those ecosystems.* ***Policy NA6.3.2*** *To provide for structures or physical works on river or lake beds where the adverse effects of such structures or works can be avoided, remedied or mitigated.*	The existing creek channel is an artificial creation but a few parts have reasonable fish habitat, although the fishery itself is quite limited. While the proposed changes will result in a modified watercourse, the ecologist's AEE concludes that long-term minor adverse effects will be partially offset by the longer term benefits. In terms of policy NA6.3.2, fish passage will be provided for, and the rock channel will be engineered to mitigate adverse effects through planting, creation of meander patterns and variation in runs and pools, and habitat enhancement with logs and eel refuges.
WA1.2 Water	**Objective** *The maintenance and enhancement of the quality of inland water to protect the life supporting capacity of aquatic ecosystems.*	***Policy WA1.3.2*** *To minimise the volume of contaminant entering water from non-point sources including sediment, chemicals, refuse and debris.* ***Policy WA1.3.7*** *To recognise and provide for the cultural and spiritual values of water to tangata whenua.*	Strict measures will be in place to control sediment run-off to Saxton Creek. It is proposed to salvage and transfer fish during construction. Fish passage is being provided for. The measures taken to protect aquatic life support the objective and the policies.

4.2.3 NRMP

The relevant provisions of the Nelson Resource Management Plan applicable to this proposal are presented in Table 5 below.

Table 5: NRMP Objectives and Policies

Area	Objectives	Policies	Comments
DO6.1 Riparian and Coastal Margins	**Objective** *Riparian and coastal margins where natural character, public access, natural functions, landscapes, heritage values, water quality and ecological values are protected and enhanced.*	***Policy DO6.1.4*** *The long term natural functioning of riparian and coastal margin should not be adversely affected by activities. In particular, natural values of margins including water quality, the habitats of plants and animals, landscape, and amenity values, including potential enhancement opportunities should be recognised and protected.*	The natural functioning of the riparian margin will be improved. There will be considerably more native vegetation, with use of eco-sourced species.
DO13A.2 Improving Connections	**Objective** *Subdivision and development in urban areas that creates interconnected structures and space to ensure that all people find urban areas easy to get around, and connected natural environment networks that support native biodiversity.*	***Policy DO13A.2.2*** *Subdivision and development should provide for the enhancement, restoration and, where appropriate, multiple use of natural environment connections, particularly from the hills to the coast, utilising rivers, streams and natural catchment features through urban environments to enhance native biodiversity.*	The proposal is consistent with this policy as it is restoring aspects of the original vegetation that existed in this area previously, it will help enhance biodiversity, and contribute to improved use and connectivity of the area, in particular from the sea to the uplands.
RU1 Protect Resources and capacities	**Objective** *Land used in a manner which will protect the life-supporting capacity, versatility and availability of land, soil, rock, aggregate, other natural resources, and ecosystems. Management must therefore be in a responsible manner which will sustain the potential of resources to meet the reasonably*	***Policy RU1.1 rehabilitation of land*** *Where temporary activities disturb land, that land should be rehabilitated to a level of capability as close as practicable to what it was before the activity commenced.*	The land will be rehabilitated following the works, with extensive planting. This will not be 'as close as practicable to what it was before the activity commenced' because, noted earlier, the existing stream and margins is degraded in parts. Putting it back the way it is now would not be consistent with the wider scheme of the NRMP nor

Area	Objectives	Policies	Comments
	foreseeable needs of future generations		the Act.
RU2 Rural Character	**Objective** *Maintenance or enhancement of an environment dominated by open space and natural features.*	***Policy RU2.4 Alteration of the contour of the land*** *Any adverse visual effects of activities which alter the contour of the land, such as filling, land contouring, and excavation should be avoided, remedied, or mitigated.*	Only minor re-contouring of the land will be occur. Visual effects will be temporary and mitigated by landscape planting.
RU3 Protection of Amenity	**Objective** *Recognise and maintain the local rural amenity experienced within the Rural Zone including the local noise environment.*	***Policy RU3.3 avoidance of effects*** *Activities should not give rise to unreasonable adverse effects which compromise the amenity of adjacent properties, services and zones such as undue levels of noise, smell, traffic and dust.*	Construction will have noise and other effects not dissimilar to that expected in the rural environment. Effects and the timing of construction activity will be cognisant of the location of the nearest dwellings.
RE2 **Residential Character**	**Objective** *An environment that is principally residential in character*	***Policy RE2.2 nuisances*** *The pleasant qualities of residential areas should not be adversely affected by glare, light spill, dust, vibration or odour.*	There will be temporary construction effects. Noise will comply with NZ Standard for construction noise, and an erosion and sediment control plan will address dust management. A traffic management plan will be in place.
DO13.1 Soil Erosion and Sedimentation	**Objective** *An environment where the adverse effects of accelerated soil erosion are avoided, remedied or mitigated.*	***Policy DO13.1.1 Soil Erosion*** *Land uses should not accelerate soil erosion beyond natural levels.* ***Policy DO13.1.2 Sedimentation*** *The adverse effects of soil erosion, particularly sedimentation, should be avoided, remedied or mitigated.*	Design and construction, including stormwater control, implementation of the erosion and sedimentation control plan, and the replanting regime, will all ensure that soil erosion and sedimentation is avoided or mitigated.
DO17.1 Effect in beds & margins of rivers	**Objective** *Activities, works or structures within the beds of lakes and rivers and their margins, and*	***Policy DO17.1.3 Flood damage*** *Structures in river beds and their margins should be constructed to allow for*	The bridge and channel in this proposal are designed to a 1% AEP (Q100) flood flows which meets the requirements in the NCC Land Development

Area	Objectives	Policies	Comments
	in wetlands, are undertaken or constructed in a way which avoids, remedies or mitigates adverse effects on freshwater bodies and their associated uses and values.	*flood flows from significant storm events without causing or exacerbating flood damage to natural or physical resources.* ***DO17.1.4 Planting in the beds of rivers and lakes*** *The introduction of plants in the beds of rivers and lakes should be avoided except where such planting is necessary to control erosion.* ***DO17.1.5 Planting in riparian margins*** *The introduction of plants in the margins of rivers should be encouraged…* ***DO17.1.10 Deposition of material in beds and on banks of rivers*** *The deposition of material in the beds and on the banks of rivers..should be avoided unless the materials is necessary to protect the bed, banks or any structure from erosion, or where it is necessary for the repair, maintenance or construction of structures, in which case any adverse effects from depositing the material should be avoided or mitigated.*	Manual. There will be planting in the bed of the new channel, and on the channel margins. However this is to soften the appearance of these works, and additionally to provide habitat value. The species have been chosen in consultation with the Engineer to ensure there is not more than a minor effect on flood flow capacity. There will be extensive riparian planting. The rock and geotextile cloth that will line the channel is necessary to avoid erosion of the stream bed, and therefore is consistent with the policy.

The proposal, with the mitigation proposed, is considered to be consistent with the relevant objectives and policies in the Nelson Regional Policy Statement and in the Nelson Resource Management Plan.

4.3 Other matters

Nelson Biodiversity Strategy

The Nelson Biodiversity Strategy was developed by a group of 22 partner organisations, ranging from Forest and Bird to Federated Farmers, and has been adopted by Nelson City Council. The Strategy was last reviewed in December 2013.

Actions 11, 14 and 23 are particularly relevant to this project:

> *11. Support the Stoke Streams Rescue Project to restore ecological functioning, water quality, habitat, flows and amenity values in the streams. (Lead: Nelson City Council). Links to 2, 7, 12, 13, 14, 15, 22, 24, 25, 26, 28, 29, 30, 32, 34.*
>
> *14. Identify and where necessary recreate critical habitats for longfin eel, giant kokopu, koaro and other "at risk" species in Nelson and implement physical and legal protection to safeguard habitats of these 12 species. (Lead: Nelson City Council). Links to 7, 10, 11, 13, 16, 17, 19, 23, 25, 27, 28, 30, 31, 32, 34.*
>
> *23. Develop and implement plans to enhance the City with continuous strips of vegetation (biodiversity corridors) across the urban environment linking the hills to the coast. (Lead: Nelson City Council). Links to 7, 10, 16, 17, 19, 20, 21, 32, 34.*

The proposal supports improved ecological function, habitat improvement and development of continuous strips of vegetation to support wildlife.

4.4 Section 104D - Particular Restrictions for Non-Complying Activities

Section 104D states:

(1) Despite any decision made for the purpose of section 95A(2)(a) in relation to adverse effects, a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either –

> *(a) The adverse effects of the activity on the environment (other than any effect to which section 104(3)(a)(ii) applies) will be minor; or*
>
> *(b) The application is for an activity that will not be contrary to the objectives and policies of –*
>
> > *(i) The relevant plan, if there is a plan but no proposed plan in respect of the activity…*

The overall status of each consent application is 'non-complying' and requires assessment under RMA section 104D.

In terms of the first 'gateway', the aquatic Assessment of Environmental Effects indicates there will be adverse effects on the environment from the works that are more than minor. However, they can be mitigated by the salvaging and transfer of fish to an area of suitable habitat up or downstream of the works, habitat enhancement of streambed (eel refuges and logs) and the use of best practice construction methods such diverting flow to work in 'the dry'. The test under s104D(1)(a) can consider the mitigation of adverse effects or conditions that reduce them, but positive or offsetting beneficial effects cannot be taken into account[8]. The proposal therefore is considered to meet the first arm of the s104D test.

[8] E.g. Stokes v Christchurch CC [1999] NZRMA 409 (EnvC), Crater Lakes Park Ltd v Rotorua DC EnvC A126/09, Director-General of Conservation (Nelson-Marlborough Conservancy) v Marlborough DC [2010] NZEnvC 403

Even it if did not meet the first test, the activity is not contrary to the relevant objectives and policies of the Nelson Resource Management Plan, as discussed in section 4.2.3 above.

Either way, the gateway test in s104D is met.

Therefore the consent authority is not prevented from granting the application for resource consent as a non-complying activity under either arm of the s104D test. When the consent authority turns its mind to the application under section 104, it can consider beneficial and positive effects when reaching a judgement as to whether the effects of the activity are acceptable.

4.5 Section 105 matters

The application includes consent for a permit to temporarily discharge stormwater during construction, therefore section 105 is relevant.

Section 105(1) RMA sets out the matters that a consent authority must have regard to when considering a resource consent application for a discharge permit. In particular, consideration needs to be given to:

- the nature of the discharge;
- the sensitivity of the receiving environment to adverse effects;
- the applicant's reasons for the proposed choice; and
- any possible alternative methods of discharge, including discharge into any receiving environment.

The project involves earthworks to construct the new stream channel and pathway. These works could potentially result in the discharge of stormwater with a higher amount of sediment than usual. As discussed throughout this application the receiving environment (the creek) is modified and the water quality is not high, however best practice measures will be established to protect the receiving environment.

This and mitigation measures have been discussed in the AEE above under Erosion and Sediment Control.

The stream can have low flows at times therefore returning water to the stream following appropriate treatment to control sediment levels is considered to be best option, compared for example to discharge to land. The proposal therefore is consistent with section 105.

4.6 Assessment of section 107 matters

Section 107 is relevant because the works involve the discharge of contaminants or water into water (i.e. it involves the potential discharge of silt-laden water into streams) which are likely to increase sediment levels during construction above current levels. The potential effects under section 107(1) that may occur as a result of discharge of contaminants from the Project are:

- a conspicuous change in the colour or visual clarity (section 107(1)(d)). The earthworks will cause a change in colour or visual clarity of the river for short periods. However, the application of the Dust, Erosion and Sedimentation Plan, use

of bypass flows and working in the dry where practicable will ensure that the level of change does not cause significant or permanent adverse effects on water quality and on the receiving environment; and

- any significant adverse effects on aquatic life (section 107(1)(g)). Based on the aquatic AEE there will be only minor effects on aquatic life with appropriate mitigation in place.

A consent authority may grant a discharge permit which gives rise to these effects if it is satisfied:

a) that exceptional circumstances justify the granting of the permit; or

b) that the discharge is of a temporary nature; or

c) that the discharge is associated with necessary maintenance work - and that it is consistent with the purpose of the RMA to do so.

The assessments in the AEE demonstrate that the Project will meet the tests within section 107(2)(b) for the following reasons:

- the discharges will be temporary and short-term (the effects will occur at times, but not consistently, during the construction period of the Project which for each stage is likely to take 6-9 months);
- the aquatic AEE indicates with best practice construction methodologies effects on the stream ecology can be appropriately mitigated;
- measures can be taken to minimise the likelihood of adverse effects resulting from an extreme weather event - these are will be set out in the Erosion and Sediment Control Plan;
- there will be no on-going adverse effects once the project's construction has been completed, and there will be positive effects arising from the implementation of the project in terms of reducing discharges with exclusion of stock from the stream and stream bed, as well preventing gravel and sediment swamping the streambed; and
- it will be consistent with the purpose of the RMA to grant the discharge permits given the scale and significance of the works and the temporary nature of the approvals sought.

In summary, the proposal meets the tests in section 107 of the RMA.

4.7 Part II RMA

Part 2 of the RMA contains the purpose and principles to be met when undertaking an activity.

Part 2 of the RMA is the framework against which all the functions, powers and duties under the RMA are to be exercised for the purpose of giving effect to the RMA. Section 5 sets out the purpose of the RMA. Sections 6, 7 and 8 are principles intended to give guidance as to the way in which the purpose is to be achieved. The following is an assessment of the proposal under these provisions.

4.7.1 Section 6

Section 6 of the RMA sets out those matters of national importance that are to be recognised and provided for in achieving the purpose of the RMA. In the context of this application the following matters are relevant:

> *(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development;*

Section 6(c) relates to the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna. There are no areas of significant indigenous vegetation affected by the proposal. The stream affected does, however, provide habitat for indigenous fauna, in terms of eels, native fish and koura. The habitat is considered to be important but not nationally significant. The proposal will ultimately have 'positive effects' on the habitat for indigenous fauna.

Section 6(d) deals with the maintenance and enhancement of public access to and along rivers, the coastal and lakes. The proposal will establish public access where none currently exists.

Section 6(e) relates to *the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga*. The Cultural Effect Assessment identified those matters in terms of section 6. These principally relate to water and fish, and whether any waahi tapu or taonga are discovered during construction. These matters are addressed in the design, construction and mitigation associated with the project.

There is no historic heritage (section 6(f) or protected customary rights (section 6(g) in the project area.

4.7.2 Section 7

Section 7 of the RMA sets out other matters that Council is to have particular regard to in achieving the purpose of the RMA.

> *Section 7*
>
> *(c) the maintenance and enhancement of amenity values;*
>
> *(f) maintenance and enhancement of the quality of the environment.*

'Amenity values' under the Act means 'those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes'. This reach of Saxton Creek currently has a relatively low to moderate amenity value. In the short term there will be a temporary loss of amenity. However, in the longer term once the work is completed and the plantings become established, and recreational use is occurring, it is considered there will a net amenity improvement.

The definition of environment in the Act includes ecosystems and their constituent parts, including people, natural and physical resources, amenity values, and 'the social, economic, aesthetic and cultural conditions which affect the matters stated [above] or which are

affected by those matters'. As with amenity values, there will be short term effects on the 'quality of the environment' but social and economic benefits of reduced flooding, improved public access, and the attention paid to planting, and to ecosystem and habitat restoration, mean that there is expected to be a net enhancement of the quality of the environments as a result of this proposal.

4.7.3 Section 8

Section 8 of the Act relates to the Treaty of Waitangi. The Cultural Effect Assessment did not identify any archaeological sites or sites of special significance to iwi. Should any artefacts or sites be uncovered during the proposed works the appropriate accidental discovery protocols will be adhered to, and iwi monitors will be on hand during significant excavation work. Issues identified in the Cultural Effect Assessment have been addressed in the final design and implementation of it.

4.7.4 Section 5

The overriding purpose of the RMA is 'to promote the sustainable management of natural and physical resources'. This is defined in section 5(2) as meaning:

> *Managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while -*
>
> *a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*
>
> *b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*
>
> *c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.*

The proposal will help provide for people's economic, social and cultural wellbeing, and for the needs of future generations by allowing for housing and rest home development in the catchment. It will assist the communities health and safety by removing an existing flood risk, and will assist health through providing a walking and cycling path that allows for both recreational and commuter use. In doing so the life-supporting capacity of a degraded stream is being addressed and adverse effects on the environment are being appropriately remedied and mitigated.

5 Overall Assessment

The consent applications involve a significant upgrade in the flood capacity of a section of Saxton Creek, and the establishment of community access within a public esplanade reserve along part of the stream where no access currently exists.

The aquatic AEE notes that there will be short-term effects from the works, including removal of existing habitat from Saxton Creek and that these will be 'more than minor' but this can be can be mitigated 'if best practice and appropriate conditions are adopted'. A range of conditions are offered by the applicant to ensure that mitigation occurs. That includes having an ecologist supervise the works, undertaking fish salvage, avoiding spawning periods unless the ecologist deems it safe, use of bypass pumping and working in

the dry, and having the ecologist advise on construction of the new channel to enhance habitat opportunities.

The long-term benefits will include improved fish passage, variation in bank shape, improved bank stability, reduced sedimentation, rehabilitated riparian edges, the removal of invasive vegetation, variation of channel width and depth, a reduction in flooding and rehabilitated opportunities for flora and fauna with stream bank protection and planting. In addition, stock access to the stream will be prevented, improving water quality and preventing bank and bed damage. Also, contaminated soil which could leach or erode into the stream will be removed as part of the works.

Overall, the aquatic AEE concludes the long-term effect will be a 'minor adverse effect' that will be partially offset by the above positive effects.

Flood capacity will be improved significantly, from approximately Q2-3 at present, to Q100 (1% AEP).

Table 6 below summarises the beneficial and adverse effects against the values that are listed in Table 6.1, Appendix 6 of the NRMP as being the identified riparian values for Saxton Creek. AP6.1.1.i of the NRMP notes that the purpose of Table 6.1 is "*to provide information on relevant riparian values ..to be taken into account at the time any resource consent or plan change is considered.*"

Table 6: Summary of adverse and positive effects

Values – Saxton Creek, Appendix 6, NRMP	Short-term Effects	Long-term Effects	Comment
Flood capacity	+	++++	Positive effects. Long-term assumes completion of other stages.
Conservation (aquatic habitat)	--	-	More than minor short-term adverse effect but mitigated by fish salvage and transfer and other best practice techniques. In longer term, a less than minor adverse effect.
Access	++	++++	Positive effects. There will be immediate access benefits from each part of the Stage 3 works, but in combination it will complete the pathway connections from Champion Rd to Saxton Field and connections to the residential subdivisions along the way.
Recreation	+	+++	Positive effects. Benefits of each sub-stage alone, but enhanced recreation opportunities in completed the walking and cycling link along the creek.

The proposal in the longer term will also enhance an area which currently has low to moderate amenity value and in places, poor stream bed quality.

While there will be adverse effects on aquatic habitat from the proposal, once the planting and new habitat becomes established the adverse ecological effects will be less than minor.

There will be very large positive effects from the project in terms of reduced flood risk, and benefits from public access and recreational use, as well as wider ecological benefits from the planted esplanade along the length of the stream.

In my view, the net effect of the project is significantly positive, and is consistent with the riparian values for Saxton Creek as identified in Appendix 6 of the NRMP.

The activity is not contrary to the relevant objectives and policies of the Nelson Resource Management Plan, nor will the adverse effects on the environment when mitigated be more than minor. Both the tests in s104D can be met (although only one of the tests needs to be met). Therefore the consent authority is not prevented from granting the application.

In terms of s104, the proposal with the compensatory benefits overall has positive effects on the environment. It supports Part II of the Act and is consistent with the objectives and policies in the freshwater NPS, the RPS, the NRMP, and the non-statutory Nelson Biodiversity Strategy.

On the basis of the plans submitted, the remediation, mitigation and enhancement proposed, the conditions offered, it is considered that the proposal is in accordance with sustainable management under the Resource Management Act, and that consent can be granted.

6 Suggested Conditions

The applicant offers the following draft conditions for the land use, water diversion and temporary discharge consents respectively:

Land Use Consent

1. The activity shall be carried out in general accordance with the application lodged with Council on XXX, the attached plans labelled RMXXX - Approved Plans XX and the following conditions of consent. Where there is any apparent conflict between the application and consent conditions, the consent conditions shall prevail.

2. The Consent Holder shall advise Council's Monitoring Officer in writing, at least 3 working days prior to works commencing on site, so that monitoring of the conditions of this consent can be undertake. Please advise consent numbers RMXXX.

3. The construction works for each sub-stage shall be completed within 1 year from when construction for the sub-stage commences on site.

4. The Consent Holder shall engage a suitably qualified and experienced freshwater ecologist (the Ecologist) to provide advice relating to the timing and prioritisation of operations to minimise adverse effects on aquatic flora and fauna including observing operations and providing best practice management during any work in the bed of Saxton Creek, and during river bank protection works associated with this consent.

5. The works shall be carried out under the supervision of a suitably qualified engineer experience in civil engineering and river control works (the Engineer).

6. Prior to any earthworks taking place under this consent, the Consent Holder shall prepare a Dust, Erosion and Sedimentation Control Plan in general accordance with the Council's Land Development Manual 2010. This plan shall be approved by the Manager Consents and Compliance and provided to the Council's Monitoring Officer. The plan shall be implemented prior to earthworks commencing and shall be maintained throughout the duration of the earthworks.

7. Prior to works commencing on site, the Consent Holder shall prepare a Traffic Management Plan that outlines the controls and exclusions that will be implemented to adequately manage potential adverse traffic effects. This Plan shall be approved by the Manager Consents and Compliance and the Consent Holder shall ensure that the Traffic Management Plan is implemented during the exercise of this consent. A copy of the approved Traffic Management Plan shall be provided to the Council's Monitoring Officer.

8. Works involving machinery at the site shall only be undertaken during the hours of 7:30 am to 5:30 pm Monday to Friday and 9:00 am to 2:00 pm on Saturday, except for overnight pumping for dewatering or stream bypass which is permitted. If overnight pumping occurs and the pump generator is located within 30m of any residential dwelling, then the generator shall be enclosed in a hay bale bund at least to a height level with the top of the generator during that overnight period.

   Advice Note: *'Overnight' means all other times outside the hours within Condition 8.*

9. Noise generated from the activity shall comply with construction noise standard NZS 6803:1999.

10. No works shall be undertaken between 1 April and 15 August in koaro and kokopu spawning areas unless the Ecologist has determined that no spawning habitats exist or that sedimentation will not pose a risk to any spawning area.

11. The Consent Holder shall ensure that the works are carried out in such a manner as to minimise sedimentation and contamination of the streams.

12. The Ecologist shall determine the flow levels at which works can be undertaken in order to minimize the effects of the activity on the environment.

13. The Ecologist shall inspect the sediment controls, any coffer dams and temporary fish barriers regularly to ensure they are functioning properly.

14. Stream channel work should occur in the dry where practicable.

    Advice Note: *A dry channel can be achieved through bypass pumping, passive stream diversion or similar methodology.*

15. Fish salvage and transfer prior to and during construction work shall occur where required. The Ecologist shall monitor for the presence of migrating fish both prior to and during construction and shall make provision to bypass the construction site where necessary.

16. If any reach is bypass pumped during the months of September to December (inclusive), the Ecologist shall determine, on a daily basis, if fish passage should be reinstated.

17. The Ecologist will be on site during the de-watering of any part of the stream bed during construction, and will manage and supervise fish salvage activities throughout the de-watering period until fish passage is restored.

18. The Ecologist will be on site during construction of the low flow channel to oversee rock placement and meander patterns. The Ecologist will also supervise the placement of logs for instream habitat and novacoil pipe for eel refuges.

19. At the completion of the works, fish passage shall be reinstated and every attempt should be made to improve fish passage where practicable.

20. Rocks for use in the stream bed and bank construction shall be sourced locally and shall be similar in colour to the rock found in the stream or nearby. Any additional rocks used shall be clean and free of contaminants, including sediment and Didymo, before placement.

21. All machinery on the site shall be refuelled, and any maintenance work undertaken, in such a manner as to prevent contamination of land and surface water. Spillage of contaminants to any watercourse or onto land shall be adequately cleaned up so that no residual potential for contamination of land and surface water runoff from the site occurs. If a spill of more than 20 litres of fuel or other hazardous substances occurs, the Consent Holder shall immediately inform Council's Monitoring Officer. A pollution spill kit must be on site during any construction activities.

22. The working areas and stream bed shall be rehabilitated upon completion of the works associated with this resource consent. Any exposed river banks resulting from the works shall be re-grassed or planted in vegetation cover that inhibits erosion and enhances instream habitat and facilitates the ability of the stream channel to cope with likely stressors resulting from residential development, stock grazing and gravel accumulation. All such planting shall be completed to an adequate standard in accordance with the attached Proposed Planting Plans [Annexure B: Appendix 3]. All exposed ground is to be planted within 3 months of the adjacent works being completed or, if undertaken immediately prior to summer, as soon as the planting season commences. Planting shall be protected from grazing animals.

23. The Consent Holder shall ensure that the site is left in a neat and tidy condition following the completion of the works.

24. If any archaeological and/or cultural artefacts or remains are found, Heritage New Zealand Pouhere Taonga, the appropriate Iwi representative and the Council's Monitoring Officer shall be immediately informed, and work in the immediate vicinity of the find stopped until authorisation is provided by the Heritage New Zealand pursuant to its powers granted under the Heritage New Zealand Pouhere Taonga Act 2014.

25. Ongoing maintenance of the bed and batter rock protection shall involve the replacement of existing rock with like for like, in generally the same position as originally constructed, or repositioning of rock as close to its original position as possible. Maintenance excludes any alteration or realignment of the stream bed, and does not include gravel extraction.

26. On completion of the works authorised by this consent, the Consent Holder shall forward to the Council's Monitoring Officer documentation from the Ecologist confirming that the works authorised by this consent have been satisfactorily completed and Conditions 10 to 19 have been complied with and riparian values have been enhanced as far as practical.

27. After completion of all the Stage 3 sections of work the Consent Holder shall engage a suitably qualified and experienced freshwater ecologist to undertake a fish and temperature survey of the stream section affected by this resource consent. The survey shall be undertaken once annually (within the period December to March) for three years, and then once every five years until the expiry of the consent. The results at the end of each survey shall be provided to the Council's Monitoring Officer.

Permit to temporarily divert water

1. The activity shall be carried out in general accordance with the application lodged with Council on XXX, the attached plan labelled RMXXX- Approved Plan X, and the following conditions of consent. Where there is any apparent conflict between the application and consent conditions, the consent conditions shall prevail.

2. The Consent Holder shall engage a suitably qualified and experienced freshwater ecologist (the Ecologist) to provide advice relating to the timing and prioritisation of operations to minimise adverse effects on aquatic flora and fauna including observing operations and providing best practice management during any work in the bed of Saxton Creek.

3. No works shall be undertaken between 1 April and 15 August in koaro and kokopu spawning areas unless the Ecologist has determined that no spawning habitats exist or that sedimentation will not pose a risk to any spawning area.

4. Fish salvage and transfer prior to and during construction work shall occur where required. The Ecologist shall monitor for the presence of migrating fish both prior to and during construction and shall make provision to bypass the construction site where necessary.

5. The Ecologist will be on site during the de-watering of any part of the stream bed during construction, and will manage and supervise fish salvage activities throughout the de-watering period until fish passage is restored.

6. The Ecologist shall inspect any coffer dams and temporary fish barriers regularly to ensure they are functioning properly.

7. If any reach is bypass pumped during the months of September to December (inclusive), the Ecologist shall determine, on a daily basis, if fish passage should be reinstated.

8. The duration of stream diversions shall take into account advice from the Ecologist to ensure fish movement is not adversely compromised.

9. At the completion of the works, fish passage shall be reinstated and every attempt should be made to improve fish passage where practicable.

10. On completion of the works authorised by this consent, the Consent Holder shall forward to the Council's Monitoring Officer documentation from the Ecologist confirming that the works authorised by this consent have been satisfactorily completed and Conditions 3 to 9 have been complied with.

Discharge permit to temporarily discharge stormwater during construction & maintenance

1. The activity shall be carried out in general accordance with the application lodged with Council on XX, the attached plan labelled RMXXX - Approved Plan X, and the following conditions of consent. Where there is any apparent conflict between the application and consent conditions, the consent conditions shall prevail.

2. The Consent Holder shall engage a suitably qualified and experienced freshwater ecologist (the Ecologist) to provide advice relating to the timing and prioritisation of operations to minimise adverse effects on aquatic flora and fauna including observing operations and providing best practice management during any work in the bed of Saxton Creek.

3. The Consent Holder shall prepare a Dust, Erosion and Sedimentation Control Plan in general accordance with the Council's Land Development Manual 2010. This plan shall be approved by the Engineer and provided to the Council's Monitoring Officer. The plan shall be implemented prior to works commencing and shall be maintained throughout the duration of the works associated with this consent.

4. The Consent Holder shall ensure that the works are carried out in such a manner as to minimise sedimentation and contamination of the streams.

5. No works shall be undertaken between 1 April and 15 August in koaro and kokopu spawning areas unless the Ecologist has determined that no spawning habitats exist or that sedimentation will not pose a risk to any spawning area.

6. The Ecologist shall determine the flow levels at which works can be undertaken in order to minimize the effects of the activity on the environment.

7. The Ecologist shall inspect the sediment controls, any coffer dams and temporary fish barriers regularly to ensure they are functioning properly.

8. All machinery on the site shall be refuelled, and any maintenance work undertaken, in such a manner as to prevent contamination of land and surface water. Spillage of contaminants to any watercourse or onto land shall be adequately cleaned up so that no residual potential for contamination of land and surface water runoff from the site occurs. If a spill of more than 20 litres of fuel or other hazardous substances occurs, the Consent Holder shall immediately inform Council's Monitoring Officer. A pollution spill kit must be on site during any construction activities.

9. On completion of the works authorised by this consent, the Consent Holder shall forward to the Council's Monitoring Officer documentation from the Ecologist confirming that the works authorised by this consent have been satisfactorily completed and Conditions 5 to 8 have been complied with.