STAFF REPORT

TO: Environment & Planning Subcommittee

FROM: Leif Pigott – Consent Planner- Natural Resources

REFERENCES: RM080191 – Discharge of Stormwater

SUBJECT: **ST LEGER TRUST - REPORT EP08/12/03 -** Report prepared for hearing of 8 December 2008

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1. DESCRIPTION OF THE PROPOSED ACTIVITY

St Leger Trust has lodged several resource consent applications relating to a Rural Residential subdivision. This consent is concerned with the stormwater discharges from part of the subdivision that is not discharging to the Council maintained network.

The following report assesses application **RM080191** relating to the diversion of stormwater from parts of proposed Lots 14-18 and the right of way and the subsequent discharge of that stormwater on proposed Lot 16. This report should be read in conjunction with other staff reports discussing the proposed subdivision.

Should consent be granted the Consent Holder will, at that stage, be the applicant St Leger Trust, but in the future it is envisaged that the resource consent will need to be transferred to the subsequent owner of Lot 16.

The stormwater runoff from the development during the earthworks is discussed and controlled in the earthworks consent RM080193. This consent covers the entire area being subdivided and does not just relate to Lot 16.

The site of the proposed subdivision has been described in detail in the report by Wayne Horner, to which the reader is directed for further information on general site matters.

1.1 Discharge Permit (Application RM080191)- Proposed Lot 16

The applicant proposes to authorise the discharge stormwater to land and consquently to water from a shared right of way and several properties (see Figure 1).

1.3 Site Location and Description

The applicants propose to develop a 32 lot subdivision with an associated access road and right of ways.

Most of the stormwater will be fed into the Councils stormwater network. There will be one private stormwater discharge. This stormwater discharge is the eastern most point of proposed lot 16 (see Figure 1). The discharge area is located at the bottom of the hill close to a tributary of Saxton Creek named Trowers Creek.

An aerial photograph showing the key features of the area is shown in Figure 2. There is a gulley running down the hill towards the stream, the ground then flattens out close to the stream. The property does not intersect the stream; rather, the boundary of proposed lot 16 is about 5 metres back from the stream edge.

The site is located on the hill slope to the south and east of Highland drive and to the south of Champion Road. Parts of the site are in the slope instability risk area as defined on the maps of the Tasman Resource Management Plan. Due to the geology, soakage of stormwater to ground is not an appropriate option. The proposed discharge point is just outside the slope instability risk area. This corresponds to where the ground flattens off (see Figure 3.)

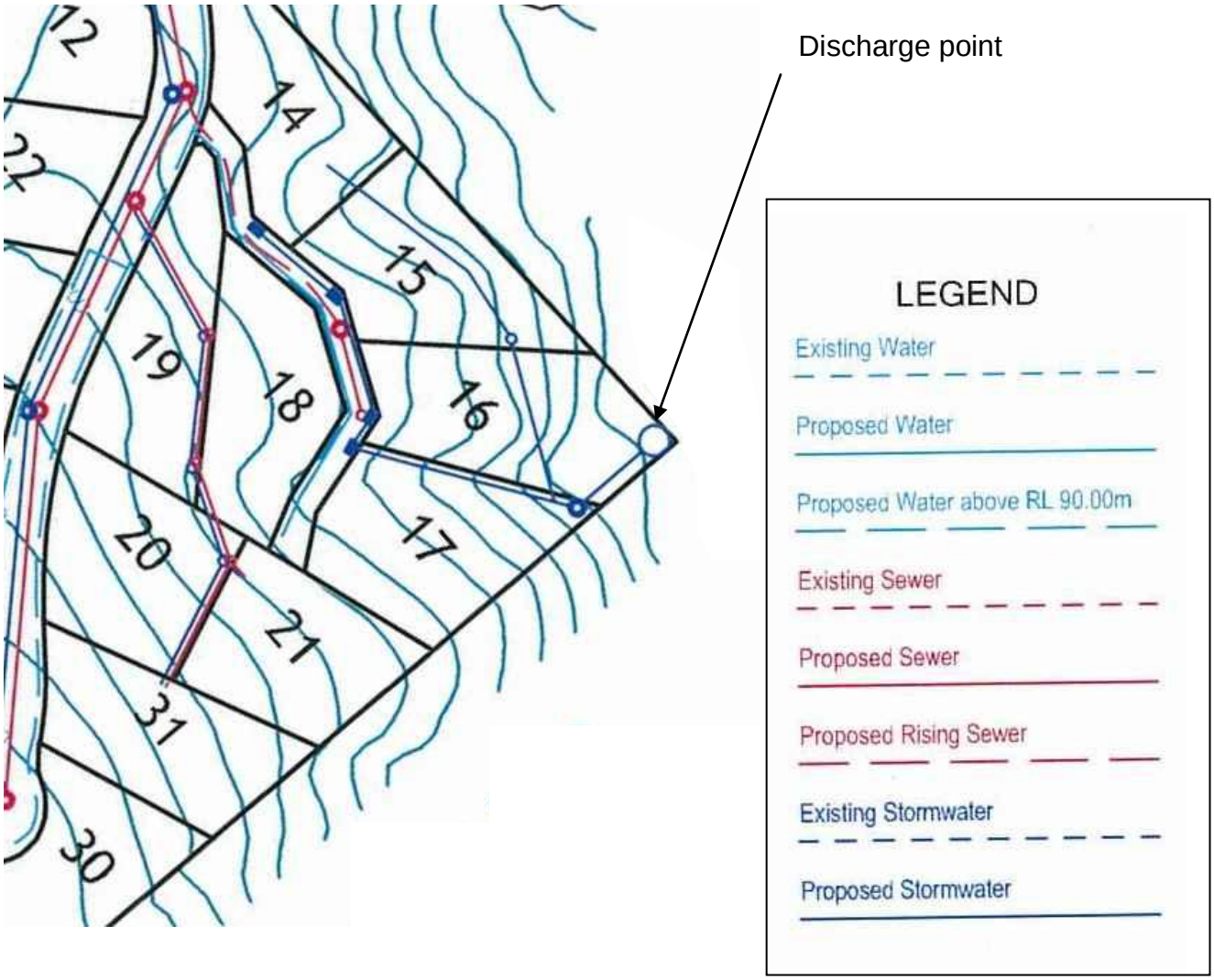

Figure 1: Proposed stormwater reticuation and the discharge point on lot 16.

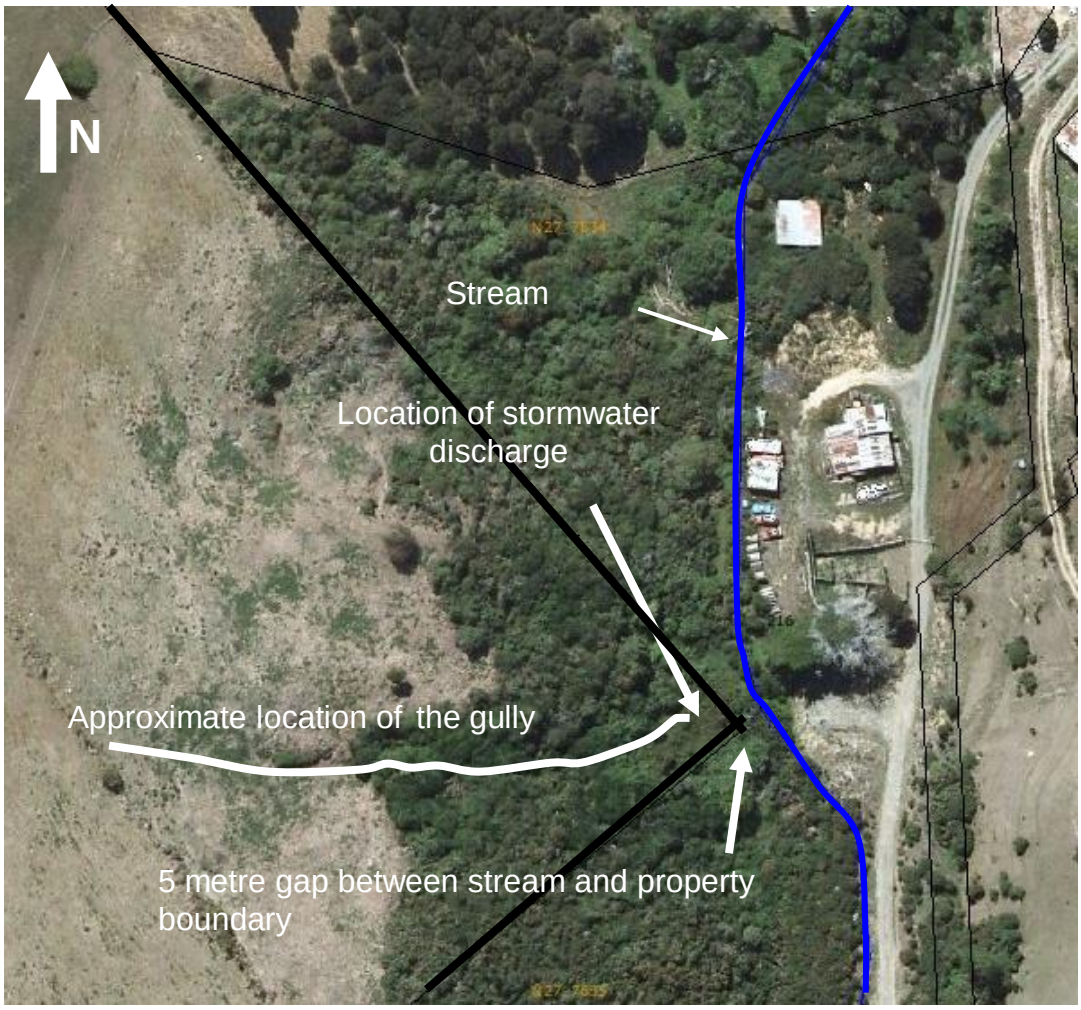

Figure 2: Aerial showing the layout of the stormwater discharge.

Figure 3: Slope instability risk area.

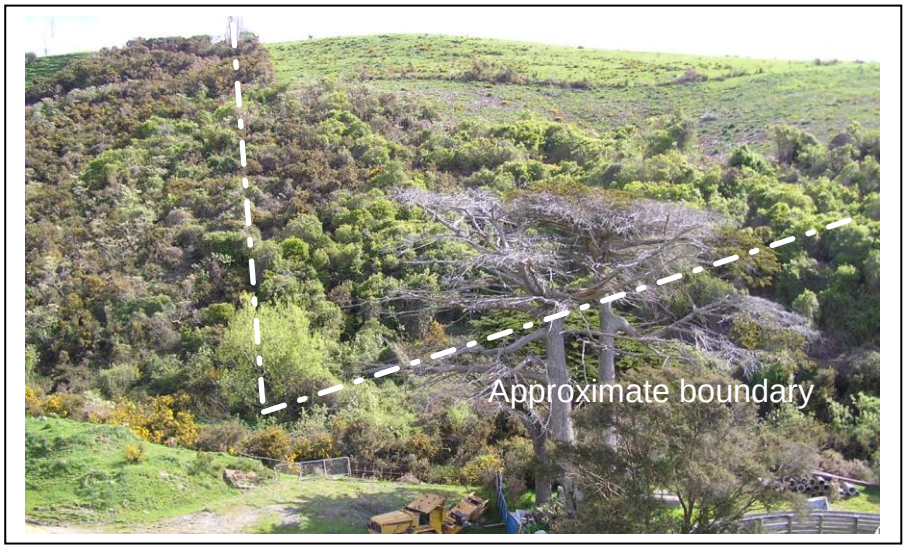

Photo 1: The approximate boundary location as viewed from the neighbouring property.

Photo2: Proposed stormwater discharge area as viewed from the neighbouring property.

The proposed point of discharge is in dense scrub and gorse making access to the site is difficult. Photos 1 and 2 show the general area of the proposed discharge and the dense vegetation coverage. Figure 4 is a diagram of the lower section of the stormwater network and shows the proposed discharge location.

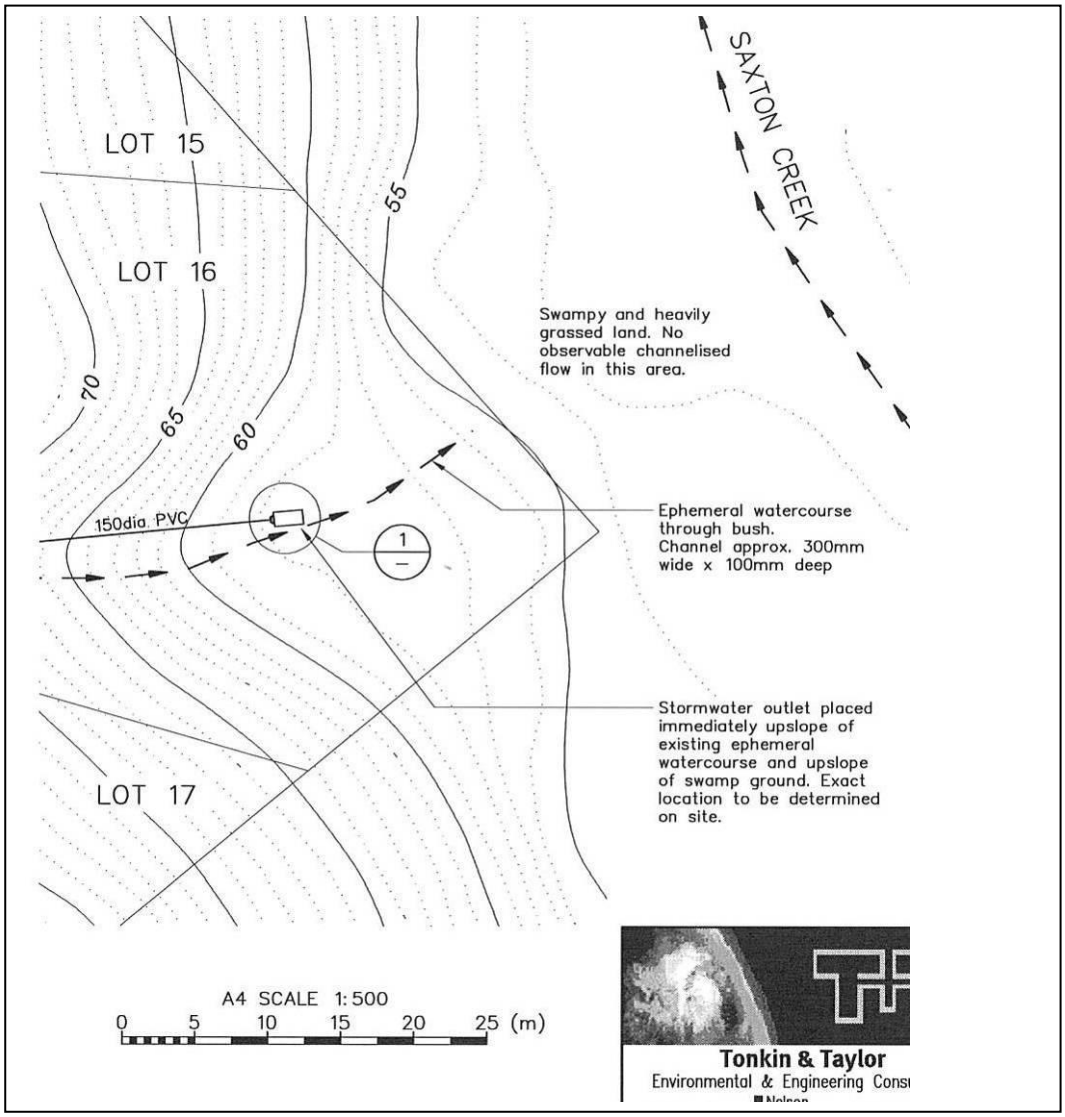

Figure 4: The proposed location of the outlet structure.

1.4 Legal Description

Address:	Highland Drive, Richmond
Legal description:	Lot 1 DP 395563
Title reference:	382080
Valuation number:	1961035400

2. TASMAN RESOURCE MANAGEMENT PLAN (TRMP) ZONING, AREAS AND RULES AFFECTED

The application site is zoned Rural Residential Serviced and lies in the Slope Instability Risk Area.

The TRMP states that stormwater diversions and discharges on land zoned Rural Residential are not permitted activities as per rule 36.4.2 and are therefore considered to be restricted discretionary activities under Rule 36.4.4. The matters in which the Council has restricted is discretion are as follows:

1. The area to be drained by the discharge or diversion.

2. The design, construction, operation and maintenance of any stormwater network that collects, conveys, detains, discharges or diverts the stormwater.

3. Measures to avoid or mitigate sediment generation or movement during earthworks in connection with development of land in the area to be drained by the discharge or diversion.

4. The nature, design and location of outfall structures.

5. Effects of the discharge or diversion on downstream flooding or erosion.

6. Alternative stormwater disposal systems or methods.

7. Provision for secondary flowpaths for the discharge or diversion

8. Actual or potential adverse effects of the discharge or diversion on aquatic ecosystems and amenity or cultural values, including cumulative effects of persistent contaminants in coastal marine, river or lake sediments.

9. Potential for incorporating any stormwater treatment devices to improve the quality of the discharge or diversion.

10. The potential for any contaminant or waste materials to enter the stormwater.

11. Monitoring the effects of the discharge or diversion.

11.A The degree to which any measures attenuate flood flow, rates and peaks for a range of rainfall durations and intensities, and the effectiveness of these measures to mimic pre-development flows within and downstream of the activity.

11.B The use of Low Impact Design (LID) solutions, where practicable.

11. C The degree of land cover change or change in land use that can be reasonably anticipated and the potential effect of that on the rate, flow and quality of stormwater run-off.

11.D Any methods or management solutions that might be necessary to ensure effective integration of the proposed stormwater system with existing systems.

11.E Any methods or management solutions to reduce any risk of slope instability issues arising from stormwater disposal to the ground.

11.F Any methods or solutions to enhance ground soakage where the method of disposal is disposal to the ground.

11.G Where the stormwater discharge is the result of a subdivision, any relevant matter in (27) of Schedule 16.3A.

11.H Any matter necessary to meet the requirements of the Tasman District Council Engineering Standards current at the time of consent application.

12. The duration of the consent (Section 123 of the Act) and the timing of reviews of conditions and purpose of reviews (Section 128).

13. Bonds, and covenants in respect of the performance of conditions, and administrative charges (Section 108).

3. CONSULTATION, APPROVALS AND SUBMISSIONS

3.1 Consultation

The application was fully notified.

3.2 Submissions

3.2.1 Summary of Submissions Regarding Stormwater:

Submissions were received regarding stormwater, as summarised below.

Submitter detail	Support or Oppose	Summary
J C and K E Heslop Family Trust	Support with conditions	No substantial stormwater runoff within our land due to the steepness of the land near lots 14, 15, 16, 17.

4. PRINCIPAL ISSUES

The principal issue associated with the application is:

a) Will the development result in adverse effects on watercourses and adjacent land associated with stormwater run-off?

5. STATUTORY PROVISIONS

The application is a restricted discretionary activity in the Rural Residential Zone. The Council must consider the application pursuant to Section 104 of the Resource Management Act 1991.

The matters for the Council to address in Section 104 are:

- Part II matters;
- the actual and potential effects on the environment of allowing the activity (Section 104 (1)(a));
- relevant objectives and policies in the Tasman Regional Policy Statement, and the Proposed Tasman Resource Management Plan (Section 104 (1) (b));

- any other matter the Council considers relevant and reasonably necessary to determine the application (Section 104 (1)(c)).

The Council must consider the application pursuant to Section 107 of the Resource Management Act 1991.

5.1 Resource Management Act Part II Matters

In considering an application for resource consent, Council must ensure that if granted, the proposal is consistent with the purpose and principles set out in Part II of the Act.

Section 5 sets out the **purpose** of the Act which is to promote the sustainable management of natural and physical resources. "Sustainable management" means:

"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 well-being and for their health and safety while -

- *sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and*

- *safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and*

- *avoiding, remedying, or mitigating any adverse effects of activities on the environment*

Sections 6, 7 and 8 set out the **principles** of the Act:

Section 6 of the Act refers to matters of national importance that the Council shall recognise and provide for in achieving the purpose of the Act. The matters relevant to this application are:

- 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.

- The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna

Section 7 of the Act identifies other matters that the Council shall have particular regard to in achieving the purpose of the Act. Relevant matters to this application are:

- 7(d) intrinsic values of ecosystems
- 7(f) maintenance and enhancement of the quality of the environment, and
- 7(g) any finite characteristics of natural and physical resources

Section 8 of the Act shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi). Iwi have been informed of the consent applications via the weekly list sent to Iwi. I do not anticipate that there are any relevant issues for this application in respect of Section 8.

If consent is granted, the proposed activity must be deemed to represent the sustainable use and development of a physical resource and any adverse effects of the activity on the environment are avoided, remedied or mitigated. The critical issue of this consent is whether the proposal represents sustainable use of the rural land resource, whereby servicing and cumulative adverse effects are no more than minor.

These principles underpin all relevant Plans and Policy Statements, which provide more specific guidance for assessing this application.

5.2 Tasman Regional Policy Statement

The Regional Policy Statement seeks to achieve the sustainable management of land, water and coastal environment resources. Objectives and policies of the Policy Statement clearly articulate the importance of protecting land resources from inappropriate land use and development.

Because the Tasman Resource Management Plan was developed to be consistent with the Regional Policy Statement, it is considered that an assessment under the Plan will satisfy an assessment against Policy Statement principles.

5.3 Tasman Resource Management Plan

The most relevant objectives and policies to this application are contained in: Chapters 30 and 33. The most relevant Rules which follow from these imperatives are contained in Chapter 36. These objectives and polices are examined as part of the assessment that follows.

6. ASSESSMENT

Pursuant to Section 104(1)(a) of the Resource Management Act, the following effects assessment has been set out:

6.1 Actual and Potential Environmental Effects

6.1.1 Proposal Summary

The development of rural catchments with houses, roads and other impermeable surfaces inevitably alters their drainage characteristics. Typically, such developments cause an increase in both the volume and peak flow rate of stormwater discharges that occur out of the catchment during and following rainstorm events. Unattenuated stormwater discharges from such catchments can cause flooding and damage to the environment and property downstream, and thus there is an expectation within the TRMP's policies and objectives that such impacts are avoided, remedied or mitigated wherever possible.

Most of the stormwater from the subdivision is proposed to be discharged into the Council's stormwater network. No resource consent is needed for this activity provided there is sufficient capacity for the stormwater in the Council's reticulation system. There are a several sites that will be unable to discharge into the network due to the topography and resource consent is required to authorise this discharge. The applicants has chosen the collect the stormwater off the hard surfaces and discharge it close to the stream off the slope instability risk area as per Tonkin and Taylor recommendations. The piped stormwater will collect about 0.3 hectares of hard surface area.

Runoff from the right of way and the collected stormwater from lots 14-18 is proposed to be piped to the corner of proposed lot 16. (see Figure 1 for the areas contributing to the SW being discharged on lot 16 and Figure 4 for the location of the discharge).

A velocity dissipater will be incorporated in the stormwater outlet structure. This outlet will be placed immediately upslope of an existing ephemeral watercourse running down the gulley. The stormwater will flow into the watercourse once it has been discharged.

Each dwelling will collect roof water, the holding tanks will be a minimum of 23,000 litres, the overflow from which will flow via a pipe to the primary stormwater disposal network.

6.1.2 Stormwater Diversion and Discharge Assessment

Stormwater Attenuation Assessment

The use of a piped stormwater network and roof storage tanks provides a level of protection against increased volume and intensity of stormwater runoff occurring as a result of the development.

The predevelopment catchment area is 1.53 hectare and the post development catchment area is 1.26 hectare (including 0.22 hectare of impervious area). The applicant is proposing piping some of the water from this catchment to Highland Drive reducing the catchment area. See Figure 5 below.

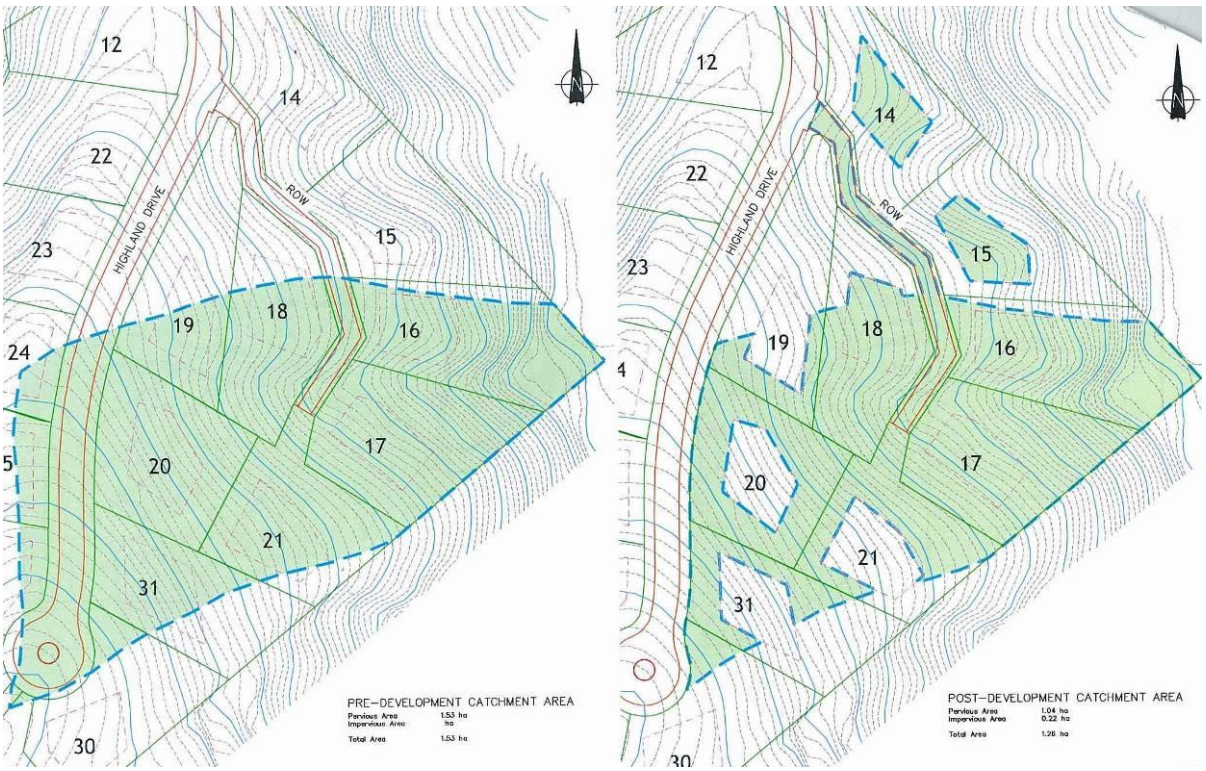

Figure 5: Pre-development and post-development catchment areas

The runoff from the pre and post development catchments has been calculated to be similar in magnitude. Table 1 below shows the calculations of the runoff generated in a 50 year rainfall event. There a greater runoff from hard surfaces but the catchment area is less catchment feeding down the gulley. Thus no significant change in runoff is observed pre and post development.

	Units	Pre-dev	Post-dev	Change
Catchment area				
Pervious	Ha	1.53	1.04	
Impervious	Ha		.22	
Total	Ha	1.53	1.26	-18%
Runoff Coefficients				
Pervious		0.4	0.4	
Impervious			0.9	
Weighted		0.4	0.49	+22%
50 Year 10 minutes	mm/hr	130	130	
50 year peak flow estimate	m3/s	.22	.22	No change

Table 1: The pre and post development flow from the catchment.

Stormwater Outlet Assessment

The stormwater from about 0.33 ha (parts of Lots 14-18 and the Right of Way) will be piped off the catchment and discharged to land. This will be discharged on the eastern corner of Lot 16 (see Figure 1 for the proposed stormwater network).

The piped network by its nature will transmit the water quickly down to the discharge point. The stormwater will arrive at the discharge point with significant energy that will have to be attenuated before discharging it to land.

An energy dissipater has been proposed by the applicant (see Figure 6). Originally a stilling well design was suggested, after discussions the applicant a Humes 200 or 300 series wing wall with energy dissipating baffles is proposed. This change is primarily to reduce the maintenance requirements of the energy dissipater.

The discharge from the energy dissipater will then flow onto a gabion basket where the flows will then merge with an existing ephermal stream that feeds onto small wetland that then feeds the main stream. This should result in the flows over the boundary being similar to the predevelopment flows.

The high flow velocities will ensure the outlet of the network is self flushing to some extent. However, the outlet structure (wingwall and gabion) will need to be inspected annually to ensure that it does not become blocked by branches and or vegetation.

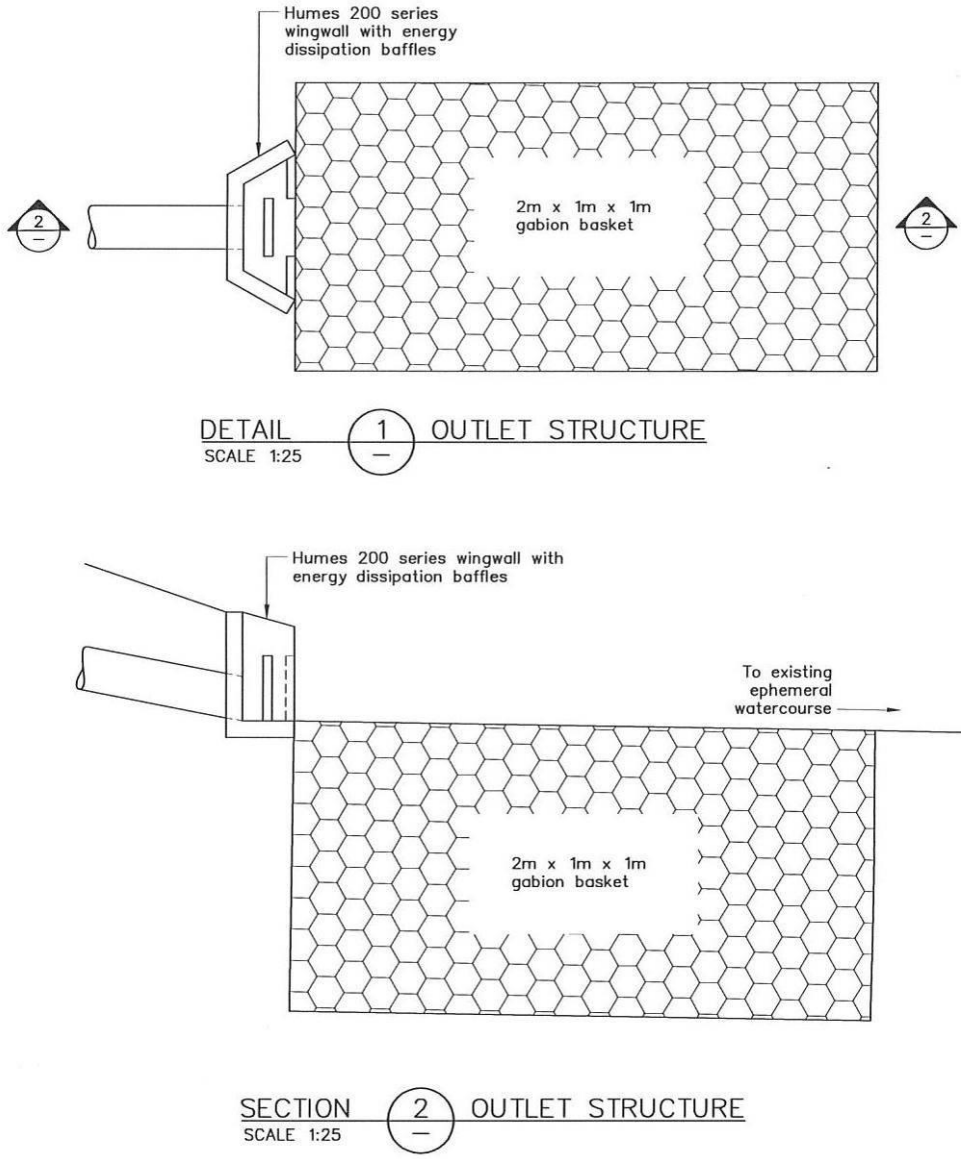

Figure 6: Outlet design for energy dissipation.

Runoff Quality Assessment

The stormwater will be collected into the stormwater system via roofs, sealed areas and ROW via sumps and catch pits. These devices will have sediment traps for fine particles and will be grated to prevent large gross pollutants from entering the system.

The expected contaminants in runoff include suspended solids, increased biochemical oxygen demand (BOD_5), pathogens, metals, hydrocarbons, toxic trace organics, nutrients and litter.

The applicant has not dealt with the issue of litter being discharged from the outlet. However some litter of this may be captured by the standard grates etc and this in turn will require maintenance to keep it clean.

Overall, it is considered that the stormwater discharges resulting from the proposed development are unlikely to adversely affect water quality in the stream to a more than a minor degree.

Stormwater water quality from the earthworks during the construction phase of is dealt with in RC080193.

6.1.4 Summary of Assessment of Effects

In summary, potential adverse effects on the environment, in terms of the diversion and discharge of stormwater at the proposed subdivision, have been quantified by the applicant in enough detail to show that the stormwater can be dealt with in a controlled manner.

6.2 Objective and Policies assessment

The relevant objectives and policies from chapter 30 and 33 of the Tasman Resource Management Plan are listed below. They are considered the relevant for this proposal:

Objectives and Policies
Objectives and policies related to stormwater diversion, damming and discharge 30.1.0 Objective 1. The maintenance, restoration and enhancement, where necessary, of water flows and levels in water bodies that are sufficient to: (a) preserve their life-supporting capacity (the mauri of the water); (b) protect their natural, intrinsic, cultural and spiritual values, including aquatic ecosystems, natural character, and fishery values including eel, trout and salmon habitat, and recreational and wildlife values; and (c) maintain their ability to assimilate contaminants. 30.1.17 Policies To avoid, remedy or mitigate the adverse effects of water damming either by itself or cumulatively with other dams, including adverse effects on: (a) the flow regime or water levels in rivers, lakes and wetlands; (c) other water users;

Objectives and Policies
(d) aquatic ecosystems and riparian habitat; (e) water quality; 33.3.0 Objective Stormwater discharges that avoid, remedy or mitigate the actual and potential adverse environmental effects of downstream stormwater inundation, erosion, water contamination, and on aquatic ecosystems. Policies 33.3.1 To require all owners, particularly the Council as stormwater asset manager, of all or part of any stormwater network to avoid, remedy, or mitigate adverse effects of stormwater discharges. 33.3.2 To advocate works to restore and protect stream or coastal habitats and improve and protect water quality affected by stormwater and drainage water discharges. 33.3.3 To manage the adverse effects of stormwater flow, including primary and secondary flow management, and the potential for flooding and inundation. 33.3.4 To avoid, remedy or mitigate the potential for erosion and sedimentation arising from stormwater run off. 33.3.5 To avoid, remedy or mitigate the adverse effects of stormwater on water quality and the potential for contamination. 33.3.7 To require all owners of all or part of any stormwater drainage network to avoid, remedy, or mitigate the adverse effects of stormwater discharges. 33.3.8 To encourage an integrated whole-catchment approach to the management and discharge of stormwater. 33.3.9 To require the use of low impact design in the management of stormwater discharges in any new development where practicable. 33.3.11 To take into account the long-term management of stormwater drainage in consideration of land development, including subdivision and land-use changes.

In my option the application does provide enough information to demonstrate that it is consistent with the relevant objectives and policies in chapters 30 and 33 of the Tasman Resource Management Plan

7. SUMMARY

7.1 Principal Issues

The principal issue of whether the proposed subdivision can be adequately serviced in terms of stormwater attenuation (diversion and discharge) so the effects across the boundary will be no more than minor.

The applicant has provided a system design that shows that the pre and post development flows are similar and they have shown that they can discharge the stormwater from the piped network in a manner than minimises the adverse environmental effects.

7.2 Statutory Provisions

The application is a restricted discretionary activity under the provisions of Chapters 31 and 36 of the TRMP at the time the application was lodged.

7.3 Overall Conclusion

Overall, the writer's assessment is that the actual adverse effects on the environment have been quantified and evaluated by the applicant. The stormwater can be collected and discharged in such a way to mimic the pre development flows. Additionally the new owner of Lot 16 could conceivably maintain the discharge structure in good working order.

Thus the proposal is consistent with the objectives and policies, and matters of discretion in the Tasman Resource Management Plan.

8. RECOMMENDATION

Having considered the application in detail, having visited the site, and drawing on the Council's staff experiences of stormwater issues, it is the writer's view that the adverse environmental effects of the proposed activity are no more than minor, and that there is no reasons why resource consent for stormwater should not be granted.

The recommendation to grant or decline this application for the stormwater is dependent upon the Committee's decision whether or not to grant the subdivision consent.

The following conditions are recommended as consent conditions should the committee chose to grant the subdivision consent.

9. RECOMMENDED CONDITIONS

9.1 Diversion and Discharge of Stormwater

1. The discharge of stormwater shall be carried out in accordance with the details contained in the report prepared by Cameron Gibson & Wells dated 28 February 2008 submitted with resource consent application and further information prepared by Tonkin and Taylor dated 25 September, 13 and 21 November 2008.

   Where there are any apparent conflicts or inconsistencies between the information provided and the conditions of this consent, the conditions shall prevail.

Stormwater Discharge

2. The discharge or diversion shall not cause or contribute to erosion of land, including the bed of any stream or drain.

3. The stormwater discharge across boundary shall not exceed the predevelopment peak discharge or the predevelopment volume.

4. The stormwater may be discharged into land or onto land where it may enter water.

5. The discharge or diversion shall not cause the production of conspicuous oil or grease films, scums or foams, or floatable or suspended material in any receiving water.

6. Bare ground shall be revegetated as soon as practical to minimise the generation of sediment.

Maintenance

7. All systems associated with the discharge (such as the interceptors, connecting drains, swales, water tables, tanks and soak pits) shall be maintained in effective, operational order at all times.

8. All systems shall be checked on a regular basis as required, but not less than once every year, to prevent carryover of contaminants into the receiving environment.

   Advice note:
   A consent notice has been placed on all the properties that contribute stormwater to the stormwater discharge on lot 16. Lots 14 to 18 and lot 21 all contribute stormwater either via the right of way or discharges off their site. These properties will be responsible for the maintenance and upkeep of the stormwater system and keeping all parts of the system in good operational order. Each property will pay an equal share of the costs of this maintenance.

Detailed Design

9. Prior to undertaking any activities authorised by these consents, the Consent Holder shall prepare a stormwater design and management plan. This plan shall be submitted to the Council's Manager, Engineering for approval before works commence.

10. Not withstanding Condition 1 the stormwater disposal systems shall be designed in accordance with Tasman District Council's Engineering Standards 2008. If the Consent Holder chooses to install a system that does not comply with Tasman District Council's Engineering Standards 2008, written approval from Council for that design must first be obtained.

11. The management plan shall comply with the relevant conditions of these consents. Any plan may be amended as the Consent Holder considers appropriate during the period of these consents. These amendments shall be supplied to the Council for approval by Manager, Engineering prior to making any changes in operation.

12. This consent shall be exercised in accordance with the design and management plan prepared by the applicant.

13. At any time during the period of these consents, a copy of the latest version of each managed plan shall be on site and available to all relevant staff.

Stormwater design and management plan

14. The stormwater plan required by Condition 9 shall set out the practices and procedures to be adopted in order that compliance with Conditions 1-8 can be achieved and the effects of the activity are minimised to the greatest extent practical, and shall as a minimum address the following matters:

    a) Design plans for the components of the stormwater system.

    b) Design calculations

    c) A construction-phase sediment management plan which identifies how sediment shall be controlled.

    d) A maintenance plan which describes the long-term maintenance of the stormwater system, ensuring on-going effectiveness of stormwater treatment structures, weed management, erosion protection and sediment control measures of all the stormwater system.

Review of Consent Conditions

15. Pursuant to Section 128 of the Resource Management Act 1991, the Consent Authority may review the conditions of these consents by serving notice during the month of April each year each year, and for any of the following purposes:

    a) to deal with any adverse effect on the environment which may arise from the exercise of this consent, and which it is appropriate to deal with at a later stage;

    b) to require the Consent Holder to adopt the best practicable option to remove or reduce any adverse effect on the environment;

    c) to allow, in the event of concerns about the quality or quantity of stormwater discharged, the imposition of compliance standards, monitoring regimes and monitoring frequencies and to alter these accordingly; or

    d) to change the compliance standards imposed by conditions of this consent to standards that are consistent with any relevant Regional Plan, District Plan, National Environmental Standard, or Act of Parliament.

16. This consent shall expire 35 years from the date of issue.

ADVICE NOTE(S)

1. Access by the Council or its officers or agents to the property is reserved pursuant to Section 332 of the Resource Management Act.

2. The Consent Holder's attention is drawn to permitted rule 36.2.4 which permits the discharge of sediment or debris to water. No consent to breach the conditions of this rule has been applied for and therefore the Consent Holder must meet the conditions of this consent during land disturbance activities or else a separate resource consent must be obtained. See Resource Consent RM080193 for more details.

3. Council draws your attention to the provisions of the Historic Places Act 1993 that require you in the event of discovering an archaeological find (eg, shell, midden, hangi or ovens, garden soils, pit, depressions, occupation evidence, burials, taonga) to cease works immediately, and tangata whenua, the Tasman District Council and the New Zealand Historic Places Trust shall be notified within 24 hours. Works may recommence with the written approval of the Council's Environment & Planning Manager, and the New Zealand Historic Places Trust.

4. This resource consent only authorises the activities described above. Any matters or activities not referred to in these consents or covered by the conditions must either:

    1. comply with all the criteria of a relevant permitted activity rule in the Proposed Tasman Resource Management Plan (PTRMP);

    2. be allowed by the Resource Management Act; or

    3. be authorised by a separate resource consent.

5. Monitoring of this resource consent may be required under Section 35 and 36 of the Resource Management Act 1991, and a deposit fee is payable at this time. Should monitoring costs exceed this initial fee, the Council will recover the additional amount from the Consent Holder. Monitoring costs are able to be minimised by consistently complying with the resource consent conditions.

6. Pursuant to Section 127 of the Resource Management Act 1991, the Consent Holder may apply to the Consent Authority for the change or cancellation of any condition of this consent.

7. Plans attached to this consent are (reduced) copies and therefore will not be to scale and may be difficult to read. Originals of the plans referred to are available for viewing at the Richmond office of the Council. Copies of the Council Standards and documents referred to in this consent are available for viewing at the Richmond office of the Council.

Leif Pigott
Consent Planner - Natural Resources