

STAFF REPORT

TO: Environment & Planning Subcommittee

FROM: Daryl Henehan, Consent Planner Natural Resources

REFERENCES: RM090804 - Land Use Earthworks

SUBJECT: **JOHN AND RIA WILMS - REPORT REP10-05-05-** Report prepared for hearing of 3 May 2010

1. DESCRIPTION OF THE PROPOSED ACTIVITY

John and Ria Wilms have lodged a number of resource consent applications relating to a four lot subdivision and associated wastewater and stormwater discharges, earthworks and works in a watercourse in the Rural 3 Zone.

This report assesses application **RM090804**, to the earthworks associated with the proposed subdivision. 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 John and Ria Wilms, but it is envisaged that the resource consent will need to be transferred to the subsequent owners of the lots.

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

1.1 Landuse Permit (Application RM090804)

To undertake earthworks required to form four building platforms, four driveways and the access right-of-way for the proposed subdivision.

1.2 Site Location and Description

The 8.43 hectare property is located in a Rural 3 Zone at 167 Dominion Road, Mahana, approximately 1.5 kilometres west of The Coastal Highway.

Two ridges pass through the site, one trending northeast to southwest, the other north to south. The site drains to three gullies, located to the sides of these ridges. An ephemeral stream is located in the gully on the western boundary of the site.

The application site contains an irrigation dam on proposed Lot 4 and one bore.

The property was previously an orchard, but currently has no significant vegetation.

Soils on the site are Moutere Hills gravel, a soil described as poorly to moderately well sorted clay-bound gravel dominated by predominantly quartzofeldspathic sandstone clasts. Test logs undertaken by Tasman Consulting Engineers indicate varying depths of greyish black silty clay topsoil overlying well-weathered Moutere Hills gravel that has developed into a light to medium clay with moderate plasticity. At greater depths the degree of weathering decreases and the original weathered cobbles can still be identified.

1.3 Legal Description

Address of property: 159 and 167 Dominion Road, Mahana;

Legal description: Lot 1 DP 9848 and Lot 2 DP 9848

Certificate of title: NL5B/654 and NL5B/655

Valuation number: 1938061700 and 1938061800

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

The land is zoned Rural 3 and is within the Land Disturbance Area 1. The proposed activity does not comply with Permitted Activity Rule 18.5.2.1 (p) due to cut and fill heights being greater than 1 metre and is deemed a Controlled Activity in accordance with Rule 18.5.2.3 of the TRMP. However, as this application is bundled with the application for subdivision (RM090798), the overall status is **Discretionary**.

3. SUBMISSIONS

None of the submitters raised issues relating the earthworks at the site.

4. PRINCIPAL ISSUES

The principal issues associated with the applications are:

- a) Slope stability
- b) Erosion and sedimentation in run off.

5. STATUTORY PROVISIONS

The application is a Discretionary Activity. 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));

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). I understand that the applicant has consulted with iwi and have accepted an iwi monitor on site. 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 earthworks can be undertaken so the adverse effects of the earthworks 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 (TRMP)

The most relevant Objectives and Policies to this application are contained in Chapter 12 and are listed below.

Relevant Objectives and Policies	
12.1.2 Objective	
The avoidance, remedying, or mitigation of adverse effects of land disturbance, including:	
(a)	damage to soil;
(b)	acceleration of the loss of soil;
(c)	sediment contamination of water and deposition of debris into rivers, streams, lakes, wetlands, karst systems, and the coast;
(d)	damage to river beds, karst features, land, fisheries or wildlife habitats, or structures through deposition, erosion or inundation;
(e)	adverse visual effects;
(f)	damage or destruction of indigenous animal, plant, and trout and salmon habitats, including cave habitats, or of sites or areas of cultural heritage significance;
(g)	adverse effects on indigenous biodiversity or other intrinsic values of ecosystems.
Policies	
12.1.3.1	To promote land use practices that avoid, remedy, or mitigate the adverse effects of land disturbance on the environment, including avoidance of sediment movement through sinkholes into karst systems.
12.1.3.2	To avoid, remedy, or mitigate the actual or potential soil erosion or damage, sedimentation, and other adverse effects of land disturbance activities consistent with their risks on different terrains in the District, including consideration of: <ul style="list-style-type: none"> (a) natural erosion risk, and erosion risk upon disturbance; (b) scale, type, and likelihood of land disturbance; (c) sensitivity and significance of water bodies and other natural features in relation to

Relevant Objectives and Policies

sedimentation or movement of debris.

- 12.1.3.3 To investigate and monitor the actual or potential adverse effects of soil erosion, other soil damage, sedimentation and damage to river beds, subsurface water bodies and caves in karst, aquatic and other natural habitats, arising from land disturbances.
- 12.1.3.4 To avoid, remedy, or mitigate the adverse effects of earthworks for the purpose of mineral extraction, on the actual or potential productive values of soil, particularly on land of high productive value.

The most relevant Rules which follow from these imperatives are contained in Chapter 18. Matters over which Council has reserved its control are listed under Controlled Activity Rule 18.5.2.2. Despite this application being assessed as a Discretionary Activity (Section 2), this still provides useful guidance as to what conditions should be set.

Matters over which Council has reserved its control

A resource consent is required and may include conditions on the following matters over which the Council has reserved control:

- (1) The location, timing of construction, design and density of earthworks including roads, tracks or landings.
- (2) The disposal and stabilisation of waste material or fill.
- (3) Loss of or damage to soil.
- (4) Damage to riparian vegetation or soil.
- (5) Damage to animal or plant communities or habitats in water bodies or coastal water.
- (6) Effects of the activity on river or stream flows.
- (7) Sedimentation effects on subsurface streams or caves in karst.
- (8) Damage to any structures.
- (9) The visual effects of the activity.
- (10) Potential damage to any cultural heritage site or area, including any archaeological site or site of significance to Māori.
- (11) Damage to any natural habitat or feature.
- (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) Financial contributions, bonds and covenants in respect of the performance of conditions, and administrative charges (Section 108).

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 applicants propose to construct four building platforms, four driveways and a right-of-way associated with their subdivision proposal. A geotechnical report was provided by Tasman Consulting Engineers Ltd.

Earthworks will be over a combined area of 15,000 m² with total cut and fill volumes of 8,500 m³. The engineering report assumes the cut and fill slopes will be 26.5° or 1v:2h. Testing at the site indicates that soil at each of the lots is suitable for construction of residential buildings, although further specific investigation will be required at the construction stage.

The sites are generally on or near to the top of ridgelines, on ground with natural slopes of 5° to 18°. Assessment of the earthworks required for each lot assumed a building platform of 20 metres X 30 metres. For each lot this is likely to result in cuts and fills of the following depths:

Lot Number	Cut (metres)	Fill (metres)	Average Slope Across Site
Lot 1:	3.0	1.5	5° - 18°
Lot 2:	1.0	0.8	5° - 16°
Lot 3:	1.0	1.0	5° - 8°
Lot 4:	2.0	4.0	5° - 13°

The main right-of-way will be formed with a maximum gradient of 15% and the access driveways to each site 20%. The maximum formed width of the main right-of-way will be 4.5 metres. Culverts greater than 300 mm will be placed at intervals of less than 80 metres. It is recommended that a suitably qualified engineer oversees and subsequently approves earthworks.

6.1.2 Earthworks Assessment

Slope stability

Tasman Consulting Engineers' report states that cut batters of 45° provide adequate stability with minimal risk of slope failure on existing roading in Moutere Hills Gravel derived soils. The report also recommends that the top 400 mm of all cut batters be laid back at 26.5° to provide enhanced stability at the top of the batter.

Underdrainage to the filled area may be necessary to ensure the underlying natural soil does not become saturate. It is recommended that an inspection be carried out by a suitably qualified engineer prior to the placement of any fill to determine whether any drainage issues need to be addressed. Fills must be constructed in accordance with NZS 4431:1989 Code of Practise for Earthfill for Residential Development.

The Tasman Consulting Engineers' report recommends that cut and fill slopes around the building platforms be kept to 26.5° or 1v:2h, which is generally accepted as a long term stable slope in Moutere Hills Gravel derived soils. Steeper slopes may require a separation distance between the base of the cut slope and any residential dwelling. It is also recommended that any surplus fill soil should be placed and compacted on stripped stable ground with a slope of 8° or less.

Erosion and Sedimentation

There is a risk that erosion and sedimentation will occur during the formation of the building platforms, driveways and access right-of-way. However, the Tasman Consulting Engineers' report makes several recommendations to ensure slope stability is retained as discussed above. In addition, the recommended conditions require the Consent Holder takes all practicable measures to limit the discharge of sediment with stormwater run-off from the site to water during and after the earthworks. This includes the use of debris fences, straw bales, cut-off drains or other such methods should be used to ensure that run-off is controlled.

Noise

Noise must comply with the TRMP Rural 3 Zone Permitted Activity Rule 17.7.2.1.

6.1.3 Summary of Assessment of Effects

In summary, potential adverse effects on the environment from the earthworks in terms of slope stability, and erosion and sedimentation at the proposed site, are in considered less than minor if they are carried out as per the geotechnical report and the proposal is generally consistent with the objectives and policies in the Tasman Resource Management Plan.

The visual effects associated with the activity, the potential loss of soil productivity and the potential for site contamination issues due to the site previously being an orchard are all discussed in the reports for consents (RM090798 and RM090800).

7. SUMMARY

7.1 Principal Issues

The principal issue of whether the earthworks can be undertaken without causing adverse effects on the environment that are more than minor. The key components are land stability and erosion and sedimentation in runoff.

7.2 Statutory Provisions

The application is deemed a Controlled Activity under the provisions of Chapter 18 of the TRMP at the time the application was lodged.

- Part II matters
- Objectives and Policies of the Tasman Resource Management Plan
- Actual and Potential Environmental Effects
- Other Matters

7.3 Overall Conclusion

Overall the writer's assessment is that the actual adverse effects on the environment are minor and the proposal is generally consistent with the objectives and policies, and matters of discretion in the Tasman Resource Management Plan.

8. RECOMMENDATION

The recommendation to grant or decline these applications for the earthworks is dependent upon the Committee's decision whether or not to grant the subdivision consent.

Having considered the application in detail, having visited the site, and drawing on the Council's staff experiences of earthworks, it is the writer's view that the adverse environmental effects of the proposed activity will be no more than minor, and that there is no reason why resource consent for the earthworks should not be granted subject to the following recommended conditions.

9. RECOMMENDED CONDITIONS

1. The Consent Holder shall ensure that all works are carried out in general accordance with the application submitted by Landmark Lile Ltd. and Newton Survey, dated 20 November 2009 and details contained in the report prepared by Tasman Consulting Engineers Ltd., dated 27 October 2009 (ref. 09193), submitted with resource consent application. Where there are any apparent conflicts or inconsistencies between the information provided and the conditions of this consent, the conditions shall prevail.
2. The Consent Holder shall contact Council's Co-ordinator Compliance Monitoring at least 24 hours prior to commencing works for monitoring purposes.
3. The Consent Holder shall be responsible for all contracted operations relating to the exercise of this resource consent, and shall ensure that all personnel working on the site are made aware of the conditions of this resource consent and with the Management Plans required by Condition 23 of this consent, and shall ensure compliance with consent conditions.
4. A copy of this resource consent shall be available to contractors undertaking the works, and shall be produced without unreasonable delay upon request from a servant or agent of the Council.
5. The earthworks authorised shall be completed at each Lot within six months of the commencement of works at that Lot. This may be extended by the Council's Co-ordinator Compliance Monitoring if a valid reason for an extension is provided in writing (for example, the contractor goes out of business or unforeseen geological issues).

6. Should the Consent Holder cease or abandon work on-site, adequate preventative and remedial measures to control sediment discharge shall be taken first, and shall thereafter be maintained for so long as necessary to prevent sediment discharge from the site. All such measures shall be of a type, and to a standard, which are to the satisfaction of the Council Environment & Planning Manager.
7. Prior to bulk earthworks commencing, the Consent Holder shall submit to the Council's Co-ordinator Compliance Monitoring, a certificate signed by an appropriately qualified and experienced engineer to certify that the appropriate erosion and sediment control measures have been constructed in accordance with the Earthworks Plan (Condition 23) and the conditions of this consent. The certified controls shall include, where relevant, diversion channels, sediment fences, decanting earth bunds and sediment retention ponds. The certification for these measures for each construction phase shall be supplied to the Council Co-ordinator Compliance Monitoring.
8. The work shall be carried out during normal work hours (ie, 7.30 am to 5.30 pm) to limit the nuisance of noise and access of vehicles.

Earthworks

9. The Consent Holder shall undertake all practicable steps to minimise the effect of any contaminant discharges to the receiving environment.
10. No petrochemical or synthetic contaminants (including but not limited to oil, petrol, diesel, hydraulic fluid) shall be released into water from equipment being used for the activity and no machinery shall be cleaned, stored, or refuelled within 5 metres of any watercourse.
11. Fuels, oils and hydraulic fluids associated with the operation shall be stored in a secure and contained manner in order to prevent the contamination of adjacent land and/or waterbodies.
12. All machinery on the work site shall be refuelled, and any maintenance works undertaken, in such a manner as to prevent contamination of land and surface water. Spillage of contaminants into any watercourse or onto land shall be adequately cleaned up so that there is no residual potential for contamination of land and surface water. If a spill of more than 20 litres of fuel or other hazardous substance occurs, the Consent Holder shall immediately inform Council's Co-ordinator Compliance Monitoring.
13. All practical measures shall be taken to ensure that any dust created by operations at the site and vehicle manoeuvring (in accessing the site and driving within it) shall not, in the opinion of Council's Co-ordinator Compliance Monitoring, become a nuisance to the public or adjacent property owners or occupiers. The measures employed shall include, but are not limited to, the watering of unsealed traffic movement areas, roadways and stockpiles as may be required.
14. Surplus fill soil shall be placed and compacted on stripped stable ground with a slope of 8° or less.

15. Topsoil and subsoil shall be stripped and stockpiled separately. On completion of the works topsoil shall spread over the subsoil.
16. The Consent Holder shall take all practical measures to limit the discharge of sediment with stormwater run-off to water or land where it may enter water during and after the earthworks.

Advice Note:

In particular, the key earthworks should be carried out during fine weather periods when the likelihood of erosion and sedimentation will be least.

17. The Consent Holder shall monitor weather patterns during the construction phase and works shall be discontinued and appropriate protection and mitigation measures put in place prior to forecast heavy rainfalls and where resulting floods reaching the site works.
18. The Consent Holder shall stop construction in heavy rain when the activity shows sedimentation in run-off that may enter water that is more than minor in the opinion of the Council's Compliance Officer.
19. Sediment and erosion controls shall be implemented and maintained in effective operational order at all times.

Advice Note:

Appropriate sediment control equipment including erosion protection matting and batter covers should be kept on-site for use in minimising potential sedimentation problems from areas of exposed soil.

20. All erosion and sediment control measures shall be inspected after any major rainfall event and any problems shall be rectified within 24 hours required.

Revegetation

21. All exposed ground excluding the accessway, driveways and building platforms shall be revegetated as soon as practical and shall be within 12 months of completion of the works so that erosion/downhill movement of soil is limited as much as is practical. This shall include supplemental planting of appropriate vegetation that enhances the stability and minimises surface erosion, eg, mulching and hydroseeding.
22. The Consent Holder may use flocculation or chemical treatment as a sediment control measure. The accumulated sediment removed from the sediment control ponds shall be spread thinly over land in such a manner that it is prevented from entering water bodies.

Advice Note:

The Consent Holder is directed to the Tasman District Council Engineering Standards & Policies 2008, Section 5 for details of possible sediment control measures.

Earthworks Management Plan

23. Prior to undertaking any activities authorised by this consent, the Consent Holder shall prepare an Earthworks Management Plan.
24. The Consent Holder shall carry out operations in accordance with the provisions of the approved Earthworks Management Plan.
25. Any changes to the Earthworks Management Plan shall be made in accordance with the methodology and approved procedures in that plan and shall be confirmed in writing by the Consent Holder following consultation with Council's Compliance Officer. Changes to the Earthworks Management Plan shall not be implemented until authorised by the Council's Co-ordinator Compliance Monitoring.
26. The Earthworks Management Plan required by Condition 25 shall set out the practices and procedures to be adopted in order that compliance with the conditions of this consent can be achieved, and in order that the effects of the activity are minimised to the greatest extent practical. This plan shall, as a minimum, address the following matters:
 - (a) description of the works;
 - (b) engineering design details;
 - (c) silt and dust control during earthwork stages;
 - (d) temporary activities and equipment storage in specified areas;
 - (e) construction programme including timetable, sequence of events and duration including any landscaping;
 - (f) construction methods and equipment to be used;
 - (g) dust sources and potential impact during construction;
 - (h) methods used for dust suppression during construction activities;
 - (i) detailed specifications of the spoil storage and stabilisation;
 - (j) traffic management and property access management;
 - (k) contingency plans (eg, mechanical failures, oil/fuel spills, flooding, landslips);
 - (l) assessment and monitoring procedures;
 - (m) methodology and approval procedures for making changes to the Earthworks Management Plan;
 - (n) erosion and sediment controls to be implemented during the works to form the stormwater discharge network in accordance with RM090802; and
 - (o) erosion and sediment controls to be implemented during the works in a watercourse to construct a dam and wetland in accordance with RM090807.

Advice Note:

The following are the general principles that should be adhered to when writing and implementing the Construction, Erosion and Sediment Control Plan:

- (a) minimise the disturbance to land;
- (b) stage construction;
- (c) protect steep slopes;
- (d) protect watercourses;
- (e) stabilise exposed areas as soon as possible;

- (f) minimise the run-off velocities;
- (g) revegetate as soon as possible;
- (h) install perimeter controls and protect disturbed areas from run-off sourced above site;
- (i) employ detention devices;
- (j) take the season and weather forecast into account;
- (k) use trained and experienced contractors and staff;
- (l) update the plan as the project evolves;
- (m) assess and monitor.

Keep on-site run-off velocities low by the use of the following: contour drains, retention of natural vegetation, provision of buffer strips of vegetation, low gradients and short slopes, control anticipated erosion and prevent sediment from leaving the site.

The Consent Holder is directed to the following documents for more detail on earthworks and sediment control: eg, Auckland Regional Council's Technical publication TP90, Erosion & Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region.

Review of Consent Conditions

27. Council may, for the duration of this consent, review the conditions of the consent pursuant to Section 128 of the Resource Management Act 1991 to:

- a) to deal with any adverse effect on the environment which may arise from the exercise of the consent that was not foreseen at the time of granting of the consent, and which is therefore more appropriate to deal with at a later stage; and/or
- b) to require the Consent Holder to adopt the best practical option to remove or reduce any adverse effects on the environment resulting from the discharge; and/or
- c) to review the contaminant limits, loading rates and/or discharge volumes and flow rates of this consent if it is appropriate to do so; and/or
- d) to review the frequency of sampling and/or number of determinands analysed if the results indicate that this is required and/or appropriate;
- e) to require consistency with any relevant Regional Plan, District Plan, National Environmental Standard or Act of Parliament.

Expiry

28. This resource consent expires 15 years after the date of granting.

ADVICE NOTES

1. Officers of the Council may also carry out site visits to monitor compliance with resource consent conditions.
2. The Consent Holder should meet the requirements of the Council with regard to all Building and Health Bylaws, Regulations and Acts.
3. Access by the Council or its officers or agents to the property is reserved pursuant to Section 332 of the Resource Management Act.
4. All reporting required by this consent should be made in the first instance to the Council's Co-ordinator Compliance Monitoring.
5. 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 should 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.
6. This resource consent only authorises the activity described above. Any matters or activities not referred to in this consent or covered by the conditions must either:
 - a) comply with all the criteria of a relevant permitted activity rule in the Tasman Resource Management Plan (TRMP);
 - b) be allowed by the Resource Management Act; or
 - c) be authorised by a separate resource consent.

Daryl Henehan
Consent Planner Natural Resources