



**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**



Search Copy


R. W. Muir
Registrar-General
of Land

Identifier MB5A/644
Land Registration District Marlborough
Date Issued 16 January 1992

Prior References
OIC 161434.1

Estate Fee Simple
Area 8.8900 hectares more or less
Legal Description Section 1-2 Survey Office Plan 7014

Proprietors
Kapiti Views Trustees Limited

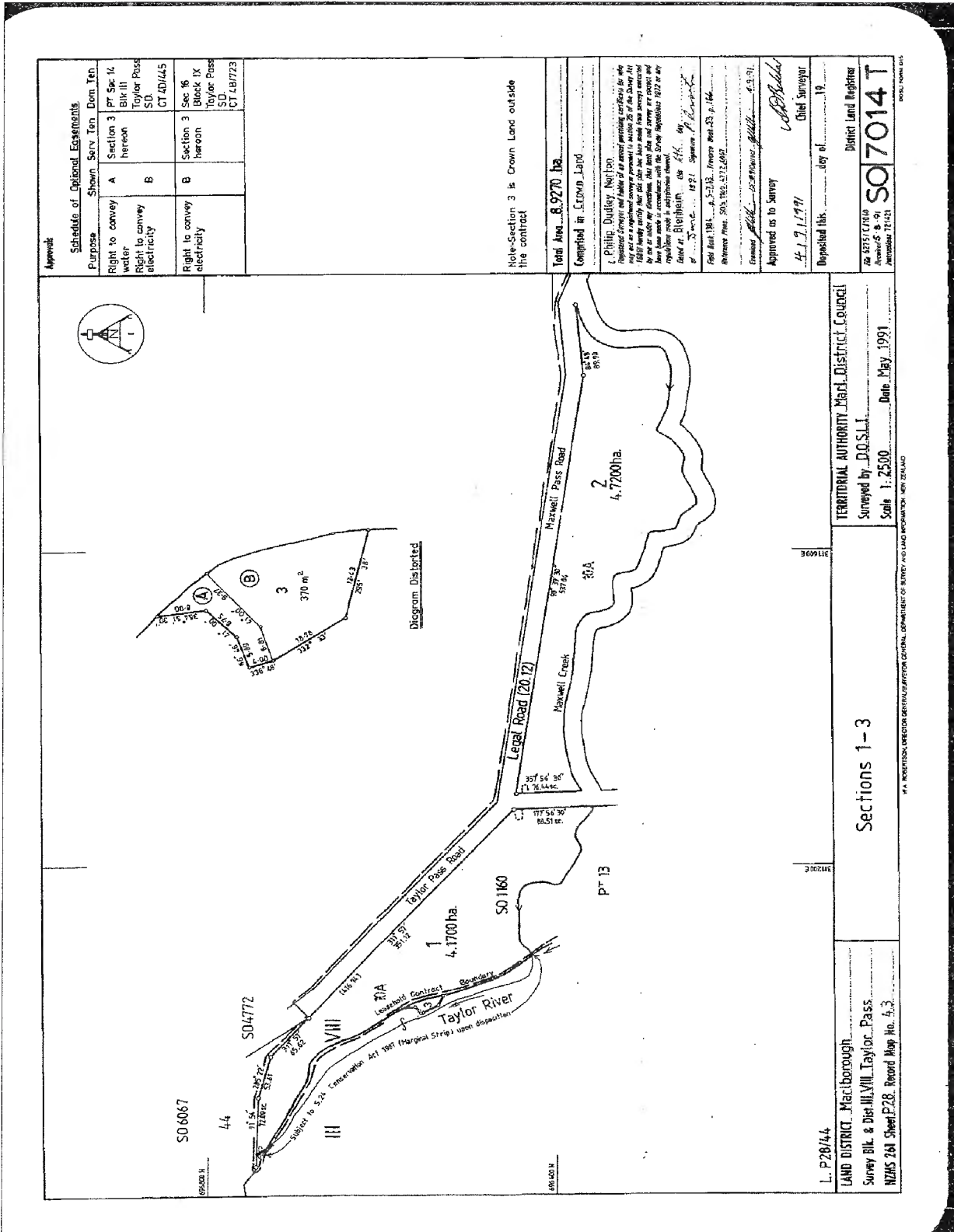
Interests

Subject to Section 27B State-Owned Enterprises Act 1986 (which provides for the resumption of land on the recommendation of the Waitangi Tribunal and which does not provide for third parties, such as the owner of the land, to be heard in relation to the making of any such recommendation)

Subject to Section 11 Crown Minerals Act 1991

Subject to Part IV A Conservation Act 1987

8014970.2 Mortgage to Rabobank New Zealand Limited - 15.12.2008 at 9:04 am



Approvals

Schedule of Optional Easements		Shown	Serv. Ten.	Dom. Ten.
Purpose	Section 3 hereon	A	PR Sec 14	Block III Taylor Pass SD CT 40/445
Right to convey water	Section 3 hereon	B	Block IX Taylor Pass SD CT 48/723	
Right to convey electricity	Section 3 hereon	B	Block IX Taylor Pass SD CT 48/723	

Note: Section 3 is Crown Land outside the contract

Total Area 8.9770 ha

Completed in Crown Land

Philip Dudley Nepton
Registered Surveyor and holder of a current practicing certificate for who may act as a registered surveyor pursuant to section 26 of the Survey Act 1980 hereby certifies that this plan has been made in strict accordance with the provisions of the Survey Act 1980 and the regulations made in pursuance thereof. He has also made in accordance with the Survey Regulations 1982 of any requirements made in pursuance thereof.

Dated at Wellington this 14th day of September 1991

Philip Dudley Nepton
Registered Surveyor

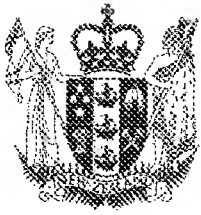
Approved as to Survey
14.9.1991
Chief Surveyor

Deposited this 19th day of 1991

Territorial Authority: Marlborough District Council
Surveyed by: D.O.S.L.L.
Scale: 1:2500
Date: May 1991

SO 7014 T

NEW ZEALAND DISTRICT COUNCIL



**COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952**



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Identifier 232445
Land Registration District Marlborough
Date Issued 12 May 2006

Prior References
MB5C/766

Estate Fee Simple
Area 320.9190 hectares more or less
Legal Description Lot 1-3 Deposited Plan 357141 and Lot 1
Deposited Plan 9518

Proprietors
Kapiti Views Trustees Limited

Interests
Subject to Part IV A Conservation Act 1987 (affects the part formerly contained in CT MB5A/966)
Subject to Section 11 Crown Minerals Act 1991 (affects the part formerly contained in CT MB5A/966)
Subject to Section 241(2) Resource Management Act 1991 (affects DP 9518)
180031.3 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 2.6.1995 at 9:20 am
180031.7 Esplanade Strip Instrument pursuant to Section 232 Resource Management Act 1991 - 2.6.1995 at 9:20 am (affects Lots 1-3 DP 357141)
7949171.2 Mortgage to Rabobank New Zealand Limited - 12.11.2008 at 9:32 am

Identifier

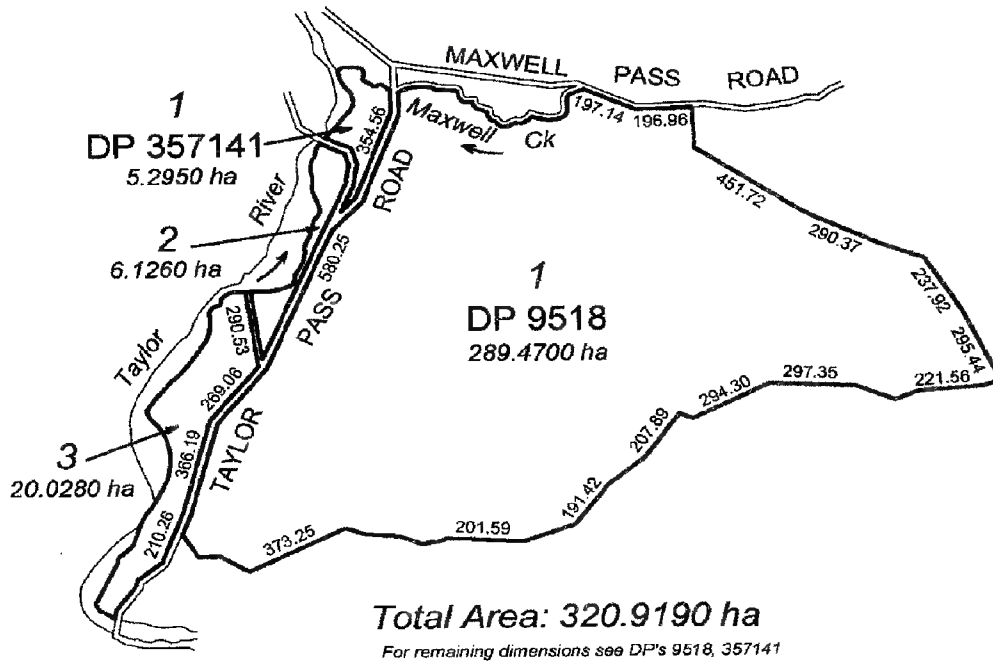
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Title Diagram CT 232445

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APPENDIX C
Traffic Assessment Report – Traffic Concepts
Limited



Trafficconcepts[™]

Traffic Assessment

Proposed Plan Change

Maxwell Hills

Blenheim

February 2011

Prepared By

A handwritten signature in blue ink, appearing to read 'G. Clark'.

Gary Clark

NZCE (Civil), R.E.A., MIPENZ, CPEng

1 INTRODUCTION

This report provides an assessment of the potential traffic effects arising from a proposed Plan Change to rezone land from Rural to Rural Residential in an area to be known as Maxwell Hills. The proposed rezoning could accommodate around 160 lots with associated roads. The site is part of a large rural block adjacent to Taylor Pass Road, south of Blenheim. This report is to accompany a Plan Change application for the site and which will include details relating to the potential traffic issues. The potential effects are outlined within the report with recommended measures being provided.

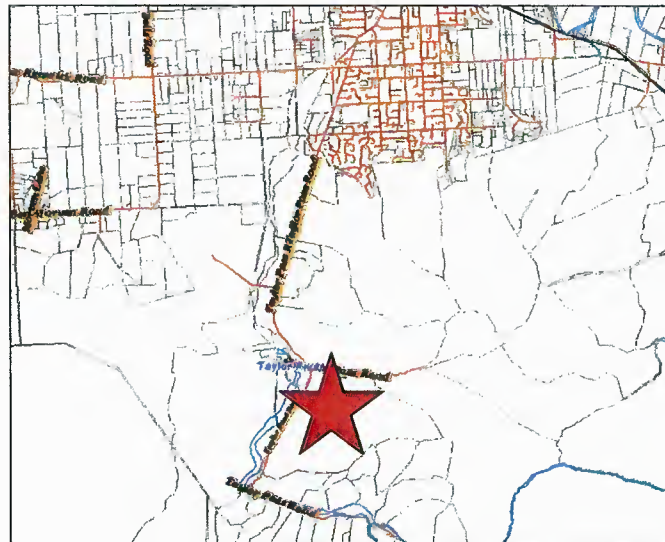
An assessment of the effects on the adjacent road network is provided. As noted in this assessment, a check list against the current District Plan provisions has been undertaken to determine any differences that could occur and may need special rules for this rezoning to address any impacts

This report outlines the proposal and compares it against the relevant provisions of the Proposed Wairau/Awatere Resource Management Plan (PWARMPP). The final section of the report will outline the potential effects that may arise and, if required, identify relevant mitigation measures. The report concludes that any adverse traffic effects can be addressed and mitigated to the point that they are insignificant.

2 EXISTING ROAD ENVIRONMENT

The site has frontage to Taylor Pass Road and Maxwell Pass Road. Taylor Pass Road connects to Maxwell Road. Maxwell Road is one of the main thoroughfares through Blenheim and provides access to the wider road network.

The figure below shows the location of the site and the adjoining road connections.



Taylor Pass Road provides the connection to southern Blenheim. As shown, Taylor Pass Road has a dashed centreline. There are no edge marker posts or edgelines. It is around six metres wide with no kerb and channel and no footpath along its length. The shoulders are grassed and drainage is via swales adjacent to the road. The typical road environment along Taylor Pass Road is shown in the photograph below.



As shown, the road is relatively straight with no street lighting and little guidance provided for motorists at night.

Further north, the land use along Taylor Pass Road becomes more intensive and urban. The land uses include the landfill, residential properties, some industrial activities and

Wairau Hospital. In addition on the urban boundary of Blenheim, Council is currently developing land adjacent to Taylor Pass Road for suburban residential activity.

Maxwell Pass Road was a small gravel rural road at the time of the original concept plan for this site that provides access to two farms properties with residences one of which is the homestead for the subject property. Maxwell Pass Road was recently sealed to a width of around six metres. It does not provide a through route.

The new sealed formation provides for two way traffic within the carriageway almost to the one lane bridge where the gravelled road continues from this point. The road was sealed to accommodate a new clean fill operation on the opposite side of the road to the site. The operating capacity of Maxwell Pass Road has been calculated at around 1200 vehicles per hour. Vehicle speeds have been estimated at around 80 – 90 km/hr as a result of the road being sealed. There is a short one lane bridge at the eastern end of the site along Maxwell Pass Road which reduces the capacity to around 300 vehicles per day.

Maxwell Pass Road connects with Taylor Pass Road at a T intersection. This T-junction is controlled by give way signs where Taylor Pass Road forms the head and has priority over Maxwell Pass Road. The intersection is located at a curve in Taylors Pass Road with traffic having good visibility in all directions.

3 CRASH HISTORY

A detailed search of the New Zealand Transport Agency crash database was carried out. The database which shows that there has been nine reported crashes from the access to the Landfill to 250 metres south of the site on Taylor Pass Road and all of Maxwell Pass Road since 2005.

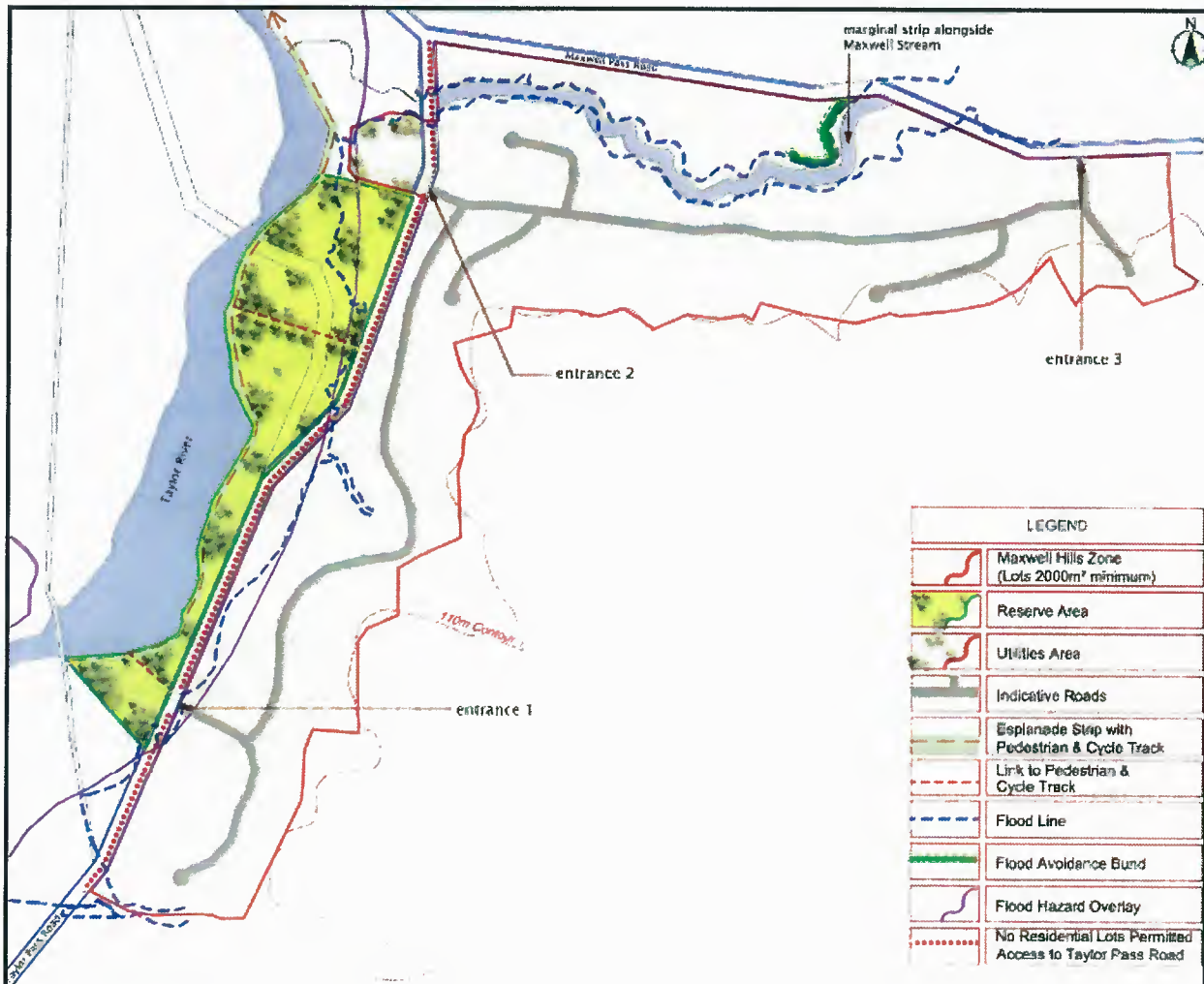
All nine crashes involved single vehicles with all being loss of control where the cause factor was described as driving too fast for conditions.

4 PROPOSAL

4.1 General

The proposed Plan Change will consist of rural residential land use. The proposed plan change area will consist of rural residential development sites that are generally located in the low lying, flat to moderately sloping terraces that abut Taylor Pass Road. The lot sizes range from around 2000m² to 4000m².

The new plan change area will have access to Taylor Pass Road and Maxwell Pass Road by way of new intersections. There are two new intersections with access to Taylor Pass Road and one junction to Maxwell Pass Road. The locations of these intersections are shown in the figure below.



It should also be noted that there may be other access points associated with newly formed reserves along the western side of Taylor Pass Road. The location of these access points and associated reserves is currently being negotiated with Council and the developer. In any case all intersections will be designed to the appropriate standards to ensure safe and convenient access points are formed onto Taylor Pass Road and Maxwell Pass Road.

The internal traffic arrangements of the plan change area have been designed by another consultant and show possible intersection locations to service the new zoning. An assessment of these intersections is provided later in the report.

4.2 Road Capacity

The matter relating to the capacity of roads is well defined and set out in the Austroads guideline Part 2 “Road Capacity” which provides details of the expected safe traffic flows along different road environments. The practical capacity for any road is based on the road width, traffic flow, the road geometry and the vehicle composition using the road. The ideal capacity of any traffic lane is around 3,600 vehicles per hour for a two lane road. Adjustment factors are then applied to this ideal capacity to determine the practical capacity of a road.

In the case of Taylor Pass Road, the road geometry and its relatively narrow width are the key elements that reduce the capacity of the road. Taylor Pass Road in the vicinity of the site has an operating capacity of around 1200 vehicles per hour for both directions. It should be noted that this is a conservative estimate with the actual operating capacity expected to be somewhat higher.

Currently Maxwell Pass Road carries traffic associated with the farming, cleanfill and residential activities along its length and is not a through road. The traffic flows are very light especially when compared with its operating capacity of around 1200 vehicles per hour.

5 DISTRICT PLAN MATTERS

5.1 General

In this section the District Plan provisions are considered and the extent to which the rezoning is accommodated by them; or whether some targeted rules are appropriate for this proposed plan change application.

5.2 District Plan Rules

The table below identifies the various Transportation Rules listed in the District Plan and provides a brief commentary on the compliance of the proposal with these provisions.

Rule	Compliance	Discussion
Rule 2.3.1 – obligation to provide two parking spaces per residential unit	Yes	All sites will be able to achieve this.
Rule 2.3.2 – design and formation standards for vehicle parking	Yes	The dimensions of the parking spaces will be in accordance with Appendix 5 and on site turning will be achievable where required.
Rule 2.4.2 – standards of vehicle crossings	Yes	The sites will require standard vehicle crossings, which can be provided.
Rule 2.4.3 – Length of vehicle crossings	Yes	The vehicle crossings will be between 3.5 metres and six metres wide.
Rule 2.4.4 – Minimum distance between vehicle crossings	No, but can be mitigated by appropriate guidelines	The vehicle crossings are required to be separated by a minimum of 7.5 metres. In some cases this is unlikely to be achieved, though this is dependent on the individual property owners.
Rule 2.4.5 – Maximum number of vehicle	Yes	The sites will not need to have more than one vehicle crossing.

crossings		
Rule 2.4.6 – Distance of vehicle crossings from intersections	No, but can be mitigated by appropriate guidelines	Some of the new lots may not be able to provide the 60 metre separation required from an intersection of two local roads.
Rule 2.4.7 – Design of vehicle access	No, but can be mitigated by appropriate guidelines	The sight distances required for vehicle access is dependant on the speed environment. In most cases the sight distance will be met. Where these can not the sight distance provision will be designed to meet the requirements of best engineering practice and Austroads.
Rule 2.5 – Protection of sight lines at intersections	No, but can be mitigated by appropriate guidelines	The sight distances required for intersections are dependant on the speed environment. In most cases the sight distance will be met. Where these can not the sight distance provision will be designed to meet the requirements of best engineering practice and Austroads.

As noted above, there are some areas of the proposed development that do not meet the current provisions of the District Plan. These matters relate to the location of vehicle crossings and to the sight distances.

It should be noted that the provisions for sight distances in the District Plan are well above the best current practice guidelines commonly used throughout New Zealand.

This matter along with the potential effects of other issues will be detailed in the next section of this report.

6 ASSESSMENT OF EFFECTS

6.1 General

This section considers the plan change area and identifies matters that may result in adverse effects. Where any adverse effects may arise, mitigation recommendations have been developed to reduce any of these adverse effects to the point of ensuring any residual impacts are insignificant. The key issues that could result in adverse effects were identified and included the following:

- Road capacity;
- Downstream effects from traffic generated by the development;
- Layout of the existing road network in the vicinity of the development;
- Taylor Pass Road/Maxwell Pass Road intersection;
- New intersections onto Taylor Pass Road and Maxwell Pass Road;
- Internal road layout within the proposed development, and
- Cyclists and Pedestrians.

The development will create three new intersections which are shown in the figure page above.

6.2 Road Capacity

The operation of Taylor Pass Road upon completion of the development is directly related to the traffic generated from the new dwellings. The trip generation rate from residential units can vary significantly from location to location. Typically traffic generation rates range from four and can be as high as ten movements per household unit as described above. For the purpose of this traffic assessment the number of seven vehicle movements per household has been used to determine the effects on the capacity of the road network in the vicinity of the site. It should be noted that this research is based on urban situations, with rural residential type households generally having lower trip generation rates.

Traffic count data provided by Marlborough Roads shows the traffic volumes along Taylor Pass Road, some 150 metres south of Maxwell Pass Road, to be around 150 vehicles per day or fifteen vehicles per peak hour.

The operational capacity of Taylor Pass Road has been determined to be around 1,200 vehicles per hour based on a Level of Service A. The proposed development along with the existing flows could be expected to generate up to 155 vehicles during the peak hour based on seven trips per household.

The plan change area will result in around 90% of the trips generated by the development using Taylor Pass Road and the remaining 10% using Maxwell Pass Road. Therefore the total number of vehicle movements along Taylor Pass Road after its intersection with Maxwell Pass Road, upon completion of the proposed development, could be as high as 140 vehicles during the peak hour. This is below the operational capacity of 1,200 vehicles per hour.

Accordingly, the operational capacity of Taylor Pass Road and its current Level of Service A will be largely unaffected by the proposed development. Furthermore upon completion of the development, Taylor Pass Road will continue to operate with the same level of service and with little difference being perceived by existing road users. There is sufficient capacity in the existing road network to accommodate the additional flows generated by the proposed rezoning.

With some 10% of the total flows being generated by the development most likely to use Maxwell Pass Road the increase in traffic movements will be around 25 additional trips. The number of movements along this road is estimated to be around three trips during the peak hours. Therefore the total number of movements along Maxwell Pass Road upon completion of the development is expected to be around seven vehicles per hour. The operational capacity of Maxwell Pass Road has been estimated at around 1200 vehicles per hour with a Level of Service A. As with Taylor Pass Road, Maxwell Pass Road will continue to operate at a Level of Service A upon completion of the development and with no discernible difference in the operational capacity of the road. No queues will form at the intersections in the vicinity of the site.

Trip Generation

Based on the assumption that the rezoning will enable an additional 160 dwellings to be developed the following calculations have been considered. Research indicates that typical vehicle trips generation for dwellings is between four and seven trips a day and sometimes as high as ten. The rate of ten trips per household is considered to be a maximum value. A trip is a term used to describe a movement to or from the property. For example, a resident might drop the children off at the school and return home; this is considered to be two separate trips.

For the purpose of this analysis, the expected traffic generation has been assumed as around seven trips per household and is based on 160 new lots. It should be noted that this approach may over estimate the expected trip generation from the proposed rezoning as it is likely that five is more appropriate for rural residential subdivisions. However due to the close proximity of the Plan Change area (2.5 kms) to urban fringe it is considered a trip generation of seven movements to be appropriate. In some urban residential areas more trips are likely due to proximity of facilities and other associated urban activities. In more rural areas, residents are more likely to combine several purposes into one journey to save time and fossil fuels. Hence using seven trips per household will provide a level of comfort with regard to the effects on the road network.

Therefore based on seven trips per household it is expected that the additional 160 lots would generate around 1120 vehicle movements per day as a result of the rezoning. This equates to around 120 movements per peak hour. While this increase in traffic flows along Taylor Pass Road and Maxwell Pass Road is relatively high compared to the current traffic volumes, the overall number of traffic movements is still relatively low and well within the road capacities as discussed in the report.

The table below outlines the number of trips for the existing activities, being existing properties further south along Taylor Pass Road and along Maxwell Pass Road. The table then provides an estimate of the expected trip volumes from the rezoning.

Table 1: Trip Generation

	Trips (based on seven per household)	
	Per Day	Per Peak Hour
Existing	148	15
Proposed Rezoning	1,120	120
Total	1,268	135

As shown, the expected number of vehicle movements during peak hours, based on seven trips per household is around 135 vehicles per hour with average flows around 1,300 vehicles per day as a result of the rezoning. It should be noted that the trip generation ranging from five to seven movements is expected for the plan change area. Accordingly the peak volumes upon completion of the development are expected to fall between 90 to 140 vehicles per hour.

Studies show that during the morning peak some 80% of the vehicle movements are away from the site with 20% being in the opposite direction. In general terms, the opposite patterns occur during the evening. Accordingly the rezoning is expected to generate the volumes for the morning and evening peak being detailed in the table below.

Table 2: Trip Distribution

	AM		PM	
	From Blenheim	To Blenheim	From Blenheim	To Blenheim
Existing	3	12	12	3
Proposed Rezoning	28	112	112	28
Total	31	124	124	31

As shown, the number of movements during the morning and evening peak periods again is relatively high compared to the existing traffic flows. It should be noted that these

calculations are based on seven trips per household. In practice the actual generation from the proposed plan change is expected to be lower.

6.3 Downstream Effects from Traffic Generated by the Completed Development

The proposed plan change area along with the existing flows are expected to generate some 155 vehicle movements during the peak hours with around 80% of the trips into the town in the morning with 20% back to the site. The opposite trip distribution is likely to occur in the evening with the movements generally over a slightly longer period when compared with the morning flows.

The New Renwick Road and Maxwell Road intersection is expected to be the most likely downstream location to experience the highest traffic effects caused by the Plan Change. This intersection is a cross road with a roundabout providing the control at the junction. Roundabouts are very efficient in distributing traffic and the additional flows generated by the development can be accommodated at this intersection, which has been designed to a very high standard. Some 10% to 15% of the trips generated by the development are expected to turn left or right at this intersection with the remaining vehicle movements heading straight towards the town centre.

After this intersection, traffic heading north will start to use different routes with Maxwell Road being the most popular route. As the traffic is distributed wider over the network the effects are also reduced.

The next intersection where the trips would have some impact, even though they are expected to be insignificant, is the tee junction of Maxwell Road and Eltham Road. This intersection has excellent sight distances and a two lane exit from Eltham Road. A right turn bay and merge are provided with this intersection also being designed to a high standard. Some 10% of the trips generated by the rezoning are expected to turn left at this intersection to head to the north. The remaining 90% of the trips generated by the proposed Plan Change is expected to continue towards the town centre with these movements dispersing further as the vehicles approach Queen Street.

Overall the flows generated by the proposed rezoning are able to be accommodated within the Marlborough road network. This is due to the different route choices available for motorists heading north, which include New Renwick Road, Maxwell Road, Alabama

Road, Hospital Road and Redwood Street. These different choices enable the additional flows to be distributed over the network with reducing effects as the distance from the plan change area increases. The relatively low flows generated by the proposed rezoning will have no discernible effects on the road network or other road users.

6.4 Layout of the existing road network in the vicinity of the Plan Change Area

The site inspections showed that some improvements could be made to the surrounding road environment to provide better guidance for motorists. These include:

- Provision of speed advisory signs and curve warning signs
- Provision of chevrons
- Provision of edge lines and edge marker posts

These measures should be implemented regardless of the Plan Change proceeding. As noted above there have been several reported crashes involving motorists losing control. The measures noted above will assist in reducing the rate of loss of control crashes in the vicinity of the site. The improvements will provide better guidance for motorists, reducing the potential for drivers to leave the road or cross the centreline and particularly at night. These measures are consistent with good practice and are detailed in RTS5 “Guidelines for Rural Road Delineation”

As noted above, there is a one lane bridge on Maxwell Pass Road which will be used by 10% of the traffic generated by the rezoning along with existing traffic. The one lane bridge will have a similar operating capacity of the rest of the existing unsealed section of Maxwell Pass Road. Accordingly the anticipated eleven vehicle movements per hour after completion of the development are less than the operational road capacity at this point of around 300 vehicles per hour. There will be occasional delays when opposing traffic meets at the bridge. This delay is small with vehicles able to wait safely clear of the bridge when required.

6.5 Taylor Pass Road/Maxwell Pass Road Intersection

The operation of the intersection of Taylor Pass Road and Maxwell Pass Road will remain relatively unchanged as a result of the proposed rezoning. This is due to there being only a

small increase in the use of Maxwell Pass Road, with most of the development traffic using Taylor Pass Road.

It is also suggested that flag lighting be installed at the intersection to improve night time recognition of the intersection. This is an existing matter that should be addressed regardless of the proposed Plan Change.

6.6 New Intersections onto Taylor Pass Road and Maxwell Pass Road

This section provides an evaluation of possible new intersections and their ability to operate safely and efficiently upon completion of the development. As noted above there will be two new intersections onto Taylor Pass Road and one onto Maxwell Pass Road. The following design parameters have been used to assess the new intersections.

Austrroads Part 5 “Intersections at Grade” recommends a desirable safe intersection sight distances (SISD) of 253 metres based on a reaction time of 2.5 seconds and a speed environment 100 km/hr. The absolute minimum is 240 metres. The SISD measurement allows motorists to exit the side road and accelerate up to the operating speed of the adjoining road without affecting the speed of other traffic. It should be noted that the SISD measurement is different to the safe stopping distance.

Austrroads recommends the safe stopping distance (ASD) for a 100 km/hr speed environment to be 170 metres. The ASD requirement allows motorists approaching a conflict situation to assess, react and stop safely.

It should be noted that the speed environment along Taylor Pass Road and Maxwell Pass Road has been estimated to be around 90 km/hr. This is based on free flow speed measurements. Using a 100 km/hr speed environment provides a safety margin over the current actual speed environment.

Intersection 1

The new junction labelled “entrance 1” in the figure (Outline Plan) above will provide access to the some of the flat land sections of the proposed plan change area. The sight distances for the new intersection have been measured. The available sight distance towards south is around 230 metres and is more than 300 metres to the north. The

photographs below show the available sight distances at the new intersection with the left photograph being a view to the south and the right photograph being a view to the north.



As shown, the view to the north shown in the right photograph provides excellent sight distances which will allow motorists to exit the new intersection safely. The sight distance to the south is limited by the dipping curve. The speed environment in this area has been estimated at around 90 km/hr which is less than the posted speed limit.

The sight distance of 230 metres to the south can not meet the desirable or absolute minimum SISD requirements for 100 km/hr. With regard to the assessment of the SISD requirements it is important to consider the traffic patterns in the area of the intersection. As noted above, the traffic volumes along Taylor Pass Road are low. The likelihood of a vehicle needing to wait as they exit the new subdivision will be small. The chance of a vehicle using Taylor Pass Road being held up by a vehicle exiting the plan change area is also considered to be low. Accordingly any effects on other traffic arising from this minor shortfall in the SISD are considered to be insignificant.

More importantly the safe stopping sight distances to the north and south for the new intersection are able to meet the minimum 170 metre requirement discussed above. Meeting these requirements means that should a conflict situation arise, motorists are able to consider, react and avoid a collision should the need occur.

Overall the new intersection will be able to operate safely and efficiently with no adverse effects on other road users as a result of the proposed rezoning.

Intersection 2

This intersection will provide access to the majority of the flat land sections on the northern parts of the proposed Plan Change along with some of the northern hill lots. The sight distances from this intersection are shown in the photographs below.



The above left image shows the sight distances to the north with the photo on the right showing the sight distances to the south. These sight distances were measured as 210 metres and 160 metres to the north and south respectively. A slight curve in Taylor Pass Road to the north restricts the sight distance in this direction. The sight distance to the south is restricted by a dip in the road.

The sight distances at this intersection can not meet the minimum SISD provisions of 253 metres for rural areas as stated in Austroads and described above. As noted above the SISD distance is used most often on busy roads where there is a high chance of interacting traffic from the major route and side road movements. This is not the case for the roads in the plan change area as both routes carry relatively low traffic volumes.

Again more importantly the safe stopping distance is the key parameter that the intersection should meet to ensure no adverse effects on road users. The minimum requirement for a speed environment of 100 km/hr is 170 metres. While the speed environment in the vicinity of “entrance 2” is less than 100 km/hr because of the nearby intersection of Taylor Pass Road and Maxwell Pass Road along with adjacent curves. The speed environment varies along this section from 60 km/hr at the north up to 90 km/hr to the south. At the new intersection location the speed environment is estimated to be

around 80 km/hr. The required safe stopping distance is calculated as being 114 metres for 80 km/hr. This is increased to 140 metres for a speed environment of 90 km/hr. Accordingly the sight distance to the south can meet the necessary provisions for this speed environment and provide a safe intersection point.

The sight distance to the south for “entrance 2” is 46 metres more than the minimum requirements of best practice for an 80 km/hr speed environment.

Intersection 3

Intersection 3 is located at the eastern end of the plan change area with access onto Maxwell Pass Road. Maxwell Pass Road in the vicinity of the intersection is a gravel narrow road. The capacity of the road has been assessed with the expected seven vehicle movements per hour being noticeably less than the operational capacity of 300 vehicles per hour. As Maxwell Pass Road can accommodate the extra traffic it is necessary to ensure the new intersection can do the same.

The area in the vicinity of the new intersection provides a slow speed environment. This is a result of the gravel road, road alignment and the one lane bridge to the west of the intersection. The speed environment has been estimated at around 50km/hr. The sight distances for the new intersection are shown in the photographs below.



As shown above, the sight distances are limited and have been measured at greater than 100 metres in both directions. Austroads Part 5 “Intersections at Grade” recommends a desirable safe intersection sight distances (SISD) of 96 metres based on a reaction time of 2.5 seconds and a speed environment 50 km/hr. The absolute minimum is 89 metres. The

SISD measurement allows motorists to exit the side road and accelerate up to the operating speed of the adjacent road without affecting the speed of other traffic. It should be noted that the SISD measurement is different to the safe stopping distance. The sight distance to the north can meet the SISD requirement.

Austrroads recommends the safe stopping distance (ASD) for a 50 km/hr speed environment to be 54 metres. The ASD requirement allows motorists approaching a conflict situation to assess, react and stop safely.

As shown in the analysis above, the proposed access point is able to meet all of the necessary SISD and ASD provisions of good engineering practice. Accordingly the intersection is able to operate safely and efficiently within this environment.

Due to the long road lengths it is possible that other intersections or driveways could be formed along either Maxwell Pass Road or Taylor Pass Road. The intersection analysis provided above show that access can be safety and efficiently achieved. There are many other locations where driveways and intersections could be formed without creating any difficulties or impacts. This is provided they meet best practice guidelines as those mentioned above. Accordingly it is considered that there is no need for any limitations to access for the plan change area as appropriate rules can manage the impacts.

Accordingly a Rule should be included in the Plan Change to ensure any new intersections or driveways are situated in accordance with Austrroads Part 5 “Intersections at Grade”. This will ensure any new access points can be located safely and will result in no adverse impacts.

It should also be noted that the introduction of more access points will enable the Council to reduce the speed limit along this road which would have some additional benefits. Due to the width of the road and geometric design the design speed is less than the posted speed limit. A small increase in the number of accesses on to either road will enable the speed limit to be dropped to 80 km/hr in accordance with the “Setting of Speed limits Rule 54001”.

6.7 Internal Road Layout within the Proposed Development

General

The internal road layout within the proposed development is able to meet the provisions of the District Plan and in particular the requirements of the road standards for the Marlborough District Council.

In considering the impacts of any road design it is suggested that the opportunity to use other guiding documents be used as they are more up to date and provide a better outcome in terms of road design. The base document for considering the effects of the road design is an Austroads document which was published in 2003 called “Rural Road Design”. This provides a guide to the geometric design of rural roads and is widely used throughout Australia and New Zealand. Some local authorities refer to this guideline in their District Plan.

Other documents could include the suite of Austroads guidelines which look at all aspects of road design and safety including pedestrians and cyclists. Accordingly it is recommended that a rule be included in the Plan Change to enable these design guides to be used.

Driveway Sight Lines

A detailed design has not yet been completed with regard to driveway and intersection sight lines. In general any intersection, be it a driveway or road junction, will be designed to meet the Council requirements. In situations where these requirements cannot be satisfied, the intersections will be designed to meet the recommended provisions of the best practice guideline. This guideline will be the Austroads Part 5 “Intersections at Grade” which is widely used throughout New Zealand for driveway and intersection design.

These guidelines allow for reduced sight distances based on the slower speed environments and other important elements such as road gradient. As noted above, the speed environment along the new roads within the plan change area will be lower than 100 km/hr posted speed limit.

The rezoning concept provided in the outline development plan contained in the “Proposed Plan Change Amendments” document does not provide any certainty about the driveway locations which is due to the nature of the road design. Nevertheless, it can be required that all driveways and intersections comply with Austroads Part 5 “Intersections at Grade” and this has been written into the Plan Change.

This amendment would provide sufficient control in the area proposed to be rezoned so as to ensure no adverse effects arise from the intersection and driveway design.

6.8 Cyclists and Pedestrians

The plan change area is located close the urban fringe of Blenheim and provides opportunities for alternative transport modes to be taken including cycling and walking. It is suggested that the Council and applicant of the plan change area could develop a plan to provide a connection between the plan change area and the town centre.

In any case the roads and nature of the road environment is available for these users already. It was noted during the site inspections that there are a noticeable number of these users currently using the roads in this area. Any future development of this land will further provide for alternative transport modes.

7 CONCLUSION

The proposed rezoning of Maxwell Hills will provide rural residential sections on marginal agricultural land. The site is located close to Blenheim and is in easy cycling distance. The new lots will be rural residential ranging in size from 2000 m² to around 4000 m². Access to the new development will be from Taylor Pass Road and Maxwell Pass Road.

The traffic generated from the site can be accommodated on Taylor Pass Road and Maxwell Pass Road with little or no impacts on other road users. The roads in the vicinity of the site are currently functioning, and will continue to function, well below the operational capacity. The roads within the wider Marlborough area are able to accommodate the additional flows with no discernible impacts on other road users.

The design of new intersections is able to provide safe access points to the existing road network in accordance with best practice.

The roads within the proposed plan change area can be designed to best practice and provide a safe and efficient road network for the rezoning

Therefore, in summary, the proposed development can meet the provisions of the District Plan as well as the intentions of the RMA to provide rural residential lots where any adverse effects are insignificant.

APPENDIX D
Landscape Assessment – Chris Glasson Landscape
Architects Limited

Kapiti Views Trust
Maxwell Hills Development
Plan Change Landscape Report



Landscape Assessment

By

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Introduction

1. Kapiti Views Trust has applied to rezone land to enable subdivision on the lower slopes of the Wither Hills, of Blenheim, into rural-residential allotments. The site is located at the corner of Maxwell Pass Road and Taylor Pass Road, 7.0km from the centre of the CBD and 2.5km from the existing urban boundary of Blenheim.

2. Chris Glasson Landscape Architects has been engaged to undertake a landscape assessment for the whole property and to identify potential effects on the landscape and amenity values. As well, we have been engaged to assist in designing the proposed rural-residential development so as to integrate measures to avoid or mitigate potential adverse effects on landscape and amenity values. Our involvement has been an integral part of the design of the Plan Change area to ensure that the development integrates into the site context. Appropriate enhancement measures have been applied to the development so as to reduce any potential impact. This landscape assessment is intended to support a Plan Change request to the Marlborough District Council as part of the Section 32 assessment.

3. This report also highlights the relationship of the proposed location with Blenheim and the Wairau Plain.

The Proposal

4. The vision for Kapiti Views Trust is to provide an environment where people can live or visit for the appreciation of a beneficially modified natural environment and for recreational pursuits.

5. A range of rural residential allotments is proposed for the property at the junction of Maxwell Pass and Taylor Pass Roads, Blenheim. The site is zoned Rural 4 in the proposed Wairau / Awatere Resource Management Plan.

6. The plan change area will be subdivided into lots of between 2000m² and 4000m² in area.

7. The lots will be marketed to purchasers seeking a rural-residential character, but not of a size too large for maintenance purposes and thus wasteful of the land resource. These will be in close proximity to outdoor recreation opportunities. The location of the plan change area means that these features can be achieved while still being within close proximity to the Blenheim urban centre. It is anticipated that this subdivision plan change will allow opportunity for larger dwellings with extensive landscape treatment to be established on these allotments than may be otherwise able on more urban allotments.
8. As part of the overall concept for the development it is intended to establish pockets of base amenity plantings throughout the site. These plantings will then be incorporated into the proposed lots and will create an established amenity value during the development of the site. This approach has been successfully used by the applicant in other subdivisions within the Marlborough District such as at Fairbourne and Morven Lane.
9. It is also proposed to enable a range of recreation opportunities such as picnicking, walking and running. These will primarily be established within a local purposes recreation reserve to be established on the west side of Taylor Pass Rd and in esplanade pathways (see plan 15.0 in Graphic Supplement). These will be of benefit to the community as a whole, not just to residents in the development.
10. Key objectives of the Plan Change area are to:
 - Create a quality environment of varying rural-residential allotment sizes
 - Develop a character which relates to the rural location but still has a close proximity to town and tourist facilities
 - Minimise the visual impact of the development on the surrounding Wairau Plain and on the locality.
 - Provide for recreational pursuits within the site and linked where possible to existing recreational opportunities

The Wairau Valley Landscape

11. The Wairau Plain on which Blenheim is located is part of a large valley system consisting of an alpine region of Lake Rotoiti at the western end, a river valley, and a large alluvial plain at the eastern end on which Blenheim is located. Throughout its length, the valley is defined with hill ranges covered with indigenous vegetation, commercial forests or open farmland. The farmland and vineyards reflect a cultural landscape, one that has been modified by man and has continued to change to different landuses over the past 37 years.
12. The elevated western part of the Wairau Valley is narrow with steep sides and terraces with few settlements, but it broadens out into a flat alluvial plain on which Blenheim, Renwick, Woodbourne, Spring Creek, Rarangi and Tuamarina are all located. The valley at the point where Blenheim is located is 15km wide. In and around Blenheim the steep dark green hills of Richmond Range are very evident as the northern boundary to the plain. To the south, the hill slopes are more gentle, of an ochre colour and have a less imposing height. Little indigenous forest exists on the southern hill range, although there is some commercial forestry. The most significant image when viewing the landscape from the plain is the defined visual boundary created by the adjacent hill ranges. Also notable is the contrast between the horizontal and vertical landscape elements.
13. The Wairau Valley has many side river valleys which are indented into the dry hills south from the plain and into the moister Richmond Range. In some places roads penetrate the valleys like Taylor Pass, Waihopai Valley, SH1 and SH63.

The Wairau Plain Landscape

14. The Wairau Plain is a modified, low lying area with different landuses including settlements, pasture, forestry, horticulture, vineyards and orchards (see maps in 1.0 of Graphic Supplement). It is a very productive area. In the most eastern part of the plain are wetlands with a mosaic of forest, wetland, scrub and tussock grassland. The urban growth areas are towards the

eastern part of the plain with Blenheim being the main centre for the commerce, industry and residential activity. However, the other settlements are small and the landscape is still dominated by a productive rural character and punctuated periodically by small settlements. Over the past 37 years the intensity of the rural areas has increased from traditional farming practices with the viticulture industry becoming very dominant. The landscape has taken on a different appearance from pastoral farming to a more structured and vegetated appearance, more often associated with wineries, and large well-designed industrial buildings have become more prevalent.

15. Recent residential subdivisions have been created, generally on the outskirts of settlements such as Renwick, but some like Marlborough Ridge, Morven Land and Fairbourne are stand alone developments on downlands which protrude into the plain. These subdivisions are now becoming more integrated into the landscape with the growth of planting and they provide a unique opportunity for a rural lifestyle.
16. The location of these developments is important, as they are moderately elevated on rolling downlands. There are no other major developments on prominent hillsides on the edge of the plain. The Wairau Plains' open and flat landscape means it is a prominent feature, thereby making the surrounding hill country landscape more visible and sensitive to change. The hidden river valleys are more discrete and less sensitive to change, making them more suitable for subdivision developments.

Blenheim and Taylor Pass Context

17. Blenheim is the most substantial settlement of the Wairau Plain. It has a diverse range of uses and activities and still retains the country-town character with a highly productive and varied agricultural and horticultural landscape surrounding the town (see landuse map 2.0 in Graphic Supplement).

18. This landuse has intensified with vineyard development, new buildings, shelter and amenity plantings and the growth of residential areas to the south of the town. As a result of this intensification and growth, new areas are sought after as being suitable for residential development and commercial functions have expanded in area and location. There are new and large commercial developments either proposed or completed in Springlands and Alabama Road. Residential growth has manifested itself in subdivisions on the lower slopes of Wither Hills as well as the periphery of Blenheim, such as adjacent to the hospital, and off Redwood Street in the east part of Blenheim.
19. The Council is constructing a new subdivision on both east and west sides of Maxwell Road/Taylor's Pass Road adjacent to Wither Hills Farm Park. Throughout the Wairau Plain nodes of residential and commercial development occur, as in Renwick, Rarangi, Grovetown, Riverlands and Rapaura, punctuating the vast landscape of vineyards, common throughout the plain. There is a strong rural backdrop to Blenheim and the Wairau Plain in the form of the Wither Hills and Southern Ranges to the south, the Richmond Range to the north, and coastal land to the east.
20. The urban edge to the town is generally defined by the arterial roads, such as Old Renwick Road, Battys Road and SH 1. A large portion of the Wither Hills immediately to the south of the town is a farm park. Its open grassed slopes rise from the river plain and these are in stark contrast to the town's eclectic built composition.
21. Wither Hills is an important backdrop, not only as part of Blenheim's open space network, but it adds to Blenheim's identity by having a large area of rural open space on its doorstep. The Wither Hills Farm Park is a conservation (soil) reserve and public recreation space, not available for residential development.
22. Beyond the town, sporadic development occurs in all quadrants. For example, in the south, adjacent to SH 1, exists a wide range of light to heavy industries,

while northward are commercial outlets, and to the west, farming and vineyards.

23. The Council has indicated an intention to create a recreation corridor from Blenheim to the Taylor Dam, and the proposed development of the site could provide for connections to the walking and mountain biking tracks contained within this corridor.
24. The Taylor River Valley is one of those areas, part of which is settled with larger rural lifestyle blocks (average of approximately 26 ha), the nearby landfill, a council subdivision, and Wither Hills farm park.
25. The Taylor River valley is an extension of the Wairau Plain with pasture, rural dwellings, a small river, willow trees, low hills and the amenity feature of the Taylor Dam and picnic area. It is a pleasant valley, popular for recreation opportunities with easy access to Blenheim. The indented valley means that it is a place that can be easily absorbed without being highly visible from other places. The skyline ridgeline is a feature worthy of protection given its visibility from the Wairau Plain. The remainder of the site has very low visibility.
26. Boffa Miskell in their report "Wairau Awatere Landscape Assessment" (1996) for the Council noted that this area's, *"landscape sensitivity is generally low due to the high level of modification, average aesthetic quality and moderately high absorption quality. Close to Blenheim, Woodbourne and Renwick, pressure for further change is inevitable ...more changes can be anticipated and it is important that they contribute to the developing landscape character."*

Wairau / Awatere Landscape Assessment

27. The following are conclusions drawn from this assessment by Boffa Miskell for the Marlborough District Council.
28. A wide range of landscape features occur with the substantial area of the Rural 4 Zone. The predominant landscape features identified in the Wairau

Awatere Landscape Assessment can be broken into four categories. Firstly, there are the bush clad mountains and forested hills which characterise the northern valleys such as Onamalutu, Tuamarina, Para and Waikakaho. Within this landscape area the Para swamp and Onamalutu Scenic Reserve are significant landscape features.

29. The eastern dry hill country is a second dominant landscape feature. These hills stretch in an arc from the south of the mid Wairau Valley to near the coast at White Bluffs and then to the coast south of Cape Campbell. The hills range from 400 to 1000 metres above sea level and are of particular significance with regard to soil and general conservation within the dry hill country. These areas have historical as well as ecological importance, in particular the Dashwood, Redwood, and Taylor Passes are all rich in history.
30. Thirdly, is the coastal area of the Rural 4 Zone and in particular the stretch of coastline that runs from White Bluffs to the District boundary of Waima River, incorporating Clifford Bay, Lake Grassmere and Cape Campbell Cliffs, beaches and lagoons typify this coastal margin. The coastal environment is not limited to the coastline itself, but extends at times some way inland as the gravel and sand dune systems advance seaward over time. The Plan also recognises that many locations along the coast such as White Bluffs have significant conservation values.
31. The fourth landscape feature is the broad low lying river plain of the Wairau Valley, which is largely modified with urban development, pasture, forestry, horticulture and vineyards. The Wairau Plain lies to the west, north and east of Blenheim. The majority of the Plan is contained within the Rural 3 Zone. Small areas of the southern and eastern Plain are within the Rural 4 Zone.
32. Although the Wairau Valley is already a highly modified natural environment, the open nature of the Wairau Plain allows fewer opportunities for development to “blend” into the landscape and therefore has moderate sensitivity. In contrast, the valley areas such as Taylor Pass are less sensitive given their enclosed environment and the ability for development to

be well integrated into the gullies and vegetated areas. The varying landforms of the dry hills lend a sliding scale of opportunities for development to assimilate into the landscape. In valley areas where vegetation is more prominent, development can be visually enclosed. More prominent hills and ridgelines on the edge of the Wairau Plain, rather than in an enclosed area, can have low visual absorption capacity. Along the coastal areas of the Rural 4 Zone, the landscapes are generally more sensitive to change as the natural landscape features have a low topography and therefore development can only be enclosed when vegetation plantings are prominent.

33. The Wairau Valley is predominantly converted to pasture and intensively managed for farming purposes although significant vineyard plantings are now developing well up the valley which was once dominated by native vegetation. Indigenous forest is now largely confined to higher altitudes and inland valleys and gullies. Exotic forestry plantations are somewhat more commonplace within the landscape and are now established across large areas of hillsides.
34. Rivers and streams are a dominant feature within the Rural 4 Zone and the wider Marlborough region. The ecology of waterways is therefore an important aspect of this area. The main issues associated with waterways at the present are water quality, pest fish and nuisance aquatic vegetation. The Council has undertaken a variety of projects to enhance and maintain the quality of these waterways, including netting programmes to reduce or eliminate pest fish populations (e.g. Taylor Dam) and controlling the growth of aquatic vegetation. The creation and management of esplanade reserves and strips can assist in ensuring the waterways are adequately protected. Freshwater wetlands, such as the Rarangi wetlands, are extremely rare and require protection.
35. There are nine species of notable plants in the Blenheim Ecological District that are identified as nationally threatened species. These species include, sand tussock, pingao, sea holly, a buttercup, mat daisy, Swamp Nettle, Native Musk, White Fuzzweed, *Mazus novaezealandiae* spp and *Muehlenbeckia*

ephedroides. The majority of these species are generally found in coastal locations and some species are located in wetland areas. Development within these areas needs to take account of the presence of these species and appropriate protection provided. We have observed none of these species on the site.

36. There are thirteen native bird species in the Blenheim Ecological District which are on the New Zealand threatened species list. The majority of these birds are found in the Wairau Lagoon area and in the Wairau River environs. Sixteen species of native freshwater fish occur in the District, including the Giant Kokopu, the dwarf and northern *galaxias*. The Giant Kokopu, which is considered rare in Marlborough, has been found in the Onamalutu River, Spring Creek and in a tributary of Grovetown Lagoon.
37. In terms of invertebrates, Rarangi wetland/beach ridge area appears to be an area that is rich in insect species characteristic of native forest fringing wetlands.
38. Widespread animal pests such as possums, goats, stoats and rabbits can have a serious adverse effect on the ecology of the area. Coarse fish such as tench and rudd have been illegally released into Taylor Dam and are at risk of breaching other waterways, and in turn competing with native species for food and habitat. Plant pests such as gorse, broom and Old Man's Beard also present risk to the ecology of the area, as well limiting areas available for production.

Landscape Sensitivity

39. While the majority of the Rural Zone is pastoral farmland, this area is a transition zone for flora and fauna between northern and southern Marlborough, with the south-eastern area being the centre of unique plants and insects. There are areas of native forest in the valleys as well as wetlands and coastal margins that are high in ecological importance, containing both significant flora and fauna that require protection from

development. The sensitivity of these areas is of particular importance as almost all are in private ownership.

Landscape and Visual Effects

40. There are many different character areas within the Rural 4 Zone with each having localised compartments with a distinctive character. It is at this more refined level that the visual impact of rural residential development is most noticeable. This impact will depend on the visual and landform components of each area. More confined areas such as valleys can in some instances provide a pleasant setting for houses in the landscape, but in other parts of a valley the proximity of houses to each other and to the road could result in a change to the amenity value of the location.
41. The visual impact in more open areas is perhaps more obvious where houses are located in close proximity with associated buildings, driveways, fences etc. Here the layout of properties is more likely to be geometric due to there being no topographic constraints such as steep slopes or waterways.

Site Character

42. The proposed Plan Change area is located at the junction of Maxwell Pass and Taylor Pass Roads (see map 3.0 in Graphic Supplement). It has a north and northwest aspect, facing across Maxwell Pass Road and the Taylor River and out to the Wairau Plain with the Richmond Range silhouetted as the background. Currently, this site is not continuously linked to Blenheim by other developments but there are residential and industrial areas along Taylor Pass Road.
43. Along Taylor Pass Road between the hospital and the site are various developments punctuating the rural landscape such as Council developed residential subdivision, landfill, industry, farming, vineyards and the Wither Hills Farm Park, mountain bike track, 'Riding for the Disabled' facility, a new school and church facility and the MDC transfer and recycling facility (see map 2.0 in Graphic Supplement).

44. The site is of rural character with pastoral land use. A house exists on the site, on Maxwell Pass Road. Gullies indent the site (see plan 4.0 in Graphic Supplement) and in the winter time water does flow in some of them, eventually flowing into the Taylor River above the dam. There is little sign of wetland plants as the site dries out in the summer months. The small stream along Maxwell Pass Road is the most significant stream on the property.
45. Due to the northwest orientation of the site, and the consequential high sun exposure, the property lends itself well to passive solar heat capture.
46. In normal residential subdivision the built structures are closer together so there is less softening due to a lack of space to plant trees and less open space is available both within the sections and as reserve land. These rural-residential sections do however provide a much larger area for planting and landscape treatment purposes and therefore can be attractively integrated into the rural environment.
47. On the west side of Taylor Pass Road is the Taylor River and the dam. It is a gravel riverbed with gorse, broom and pine trees in the vicinity as well as rough grass over the flood plain. In the summer months the river becomes a trickle and then over the bulk of its length it is totally dry. The dam area is a delightful place for passive recreation with a large lake, tall trees providing shade and shelter for picnicking, abundant wildlife, and a rural-recreational character.

Background Information

Climate and Soils

48. Maxwell Pass lies within the Wither Hills. This area is subject to the north-west and westerly winds throughout spring and early summer. These winds, combined with a rainfall deficit in the summer months, resulting in high levels of evaporation and typically dry summers. The area has a long history of

drought, with an average rainfall for the last ten year period being less than 600mm per annum.

49. The area has very high sunshine hours and mild winters with only occasional light frosts on the hill country, with heavier and more frequent frosts on the river flats and terrace land.

Ecology of the Site

Vegetation

50. The site occurs within the Wither Hills Ecological District. Apart from a small area of alluvial flats along the Taylor River, the only waterway of any size in the locality, the land is comprised of dissected hill country, with generally short, and steeply incised gullies and valleys (see map 5.0 in Graphic Supplement). The area has a warm dry climate with high solar radiation and frequent extreme drought. Occasional frosts occur in winter and winds are generally light to moderate. The original vegetation cover, as suggested by recent research and the survey findings, was probably forest dominated by lowland totara, matai and black beech on the lowlands, with Halls totara and red beech on the higher ground. Other plant associations are likely to have included broadleaf, putaputaweta, akiraho, mahoe, kanuka, five-finger, kowhai and titoki. Dry shrubland would have been confined to bluffs and rocky ground. Wetlands were naturally uncommon.
51. Trees and shrubs that are growing on the property now are generally those that are resistant to grazing/browsing or unpalatable to sheep, cattle, hares, rabbits and possums. Less resistant trees and shrubs have disappeared or are now only found in very low numbers (see map 6.0 in Graphic Supplement).
52. Trees and shrubs that occur in the valleys and side basins at present are predominantly, manuka, matagouri, tauhinu, porcupine shrub, wiggy wig, pines, barberry, briar, gorse and broom. Mahoe, *Coprosma* sp., *Hebe* sp., native broom and kanuka occur in very low numbers (see images 9.1-9.6 in

Graphic Supplement). Silver tussock also occurs in very low numbers and is mainly found on the upper slopes.

53. Due to being spring fed, containment of runoff water, shade and shelter from the wind, the incised streambeds at the lower end of the valleys support a variety of trees and shrubs. The stream that meanders alongside Maxwell Pass Road has along its embankments elderberry, alder, plum, barberry, willow, briar, broom, hawthorn, hebe sp. and coprosma sp. along with sedges, ferns, herbs and grasses.
54. Eucalypt trees and wattles are the predominant shelter trees around the outer edge of the farmhouse, buildings and stockyards near Maxwell Pass Road. The most commonly occurring trees on the property are manuka and matagouri. Manuka is regenerating with families of mixed age seedlings and small trees growing near larger, seed bearing trees. Silver tussock occurs in low numbers amongst introduced grasses such as crested dogstail, yorkshire fog, cocksfoot, danthonia and subterranean clover.

Weeds

55. Pastoral weeds are almost entirely composed of exotic species. Woody weeds such as gorse, broom, barberry, hawthorn, sweetbriar, buddleia, willows and boxthorn are found throughout the ecological district. Briar and barberry occur in low numbers throughout areas where other trees are found. Alder, elderberry and wild plum are present as mature trees in the incised streambed beside Maxwell Pass Road.

Streams

56. The streambed channel that meanders alongside of Maxwell Pass Road flows from the Maxwell Pass catchment and it has a relatively flat, incised bed compared to the three smaller and steeper streambeds on the property. It has well-established trees and other riparian plants, which provide shade for the stream and habitat for wildlife using the area. It also provides a corridor for birdlife from the Taylor River riparian vegetation, upstream into the Maxwell Pass Catchment. The stream connects with the Taylor River during times of

flow. It is an important contributor of water and also food in the form of insects and vegetable matter to the Taylor River and dam. The culvert beneath the Taylor Pass Road allows for fish passage if any fish such as long finned eel chose to explore the reaches of this stream during a flood or fresh.

Opportunities for Re-establishing Vegetation.

57. The objective is to follow the Marlborough District Council planting guide. Manuka is re-establishing on the property which is probably due to this plant being relatively unpalatable to farm animals. Matagouri, tauhinu, *Muehlenbekia complexa* (wiggly wig), porcupine bush and bracken are also all noticeably well established.
58. Tree and shrub species that could be added to this property are; mountain flax, New Zealand flax, cabbage tree, pink tree broom, putaputaweta, lemonwood, kohuhu, wineberry, black and red beech, kahikatea, ngaio, ribbonwood, lancewood, matai, totara, Halls totara, mahoe, broadleaf, five finger, kowhai, akiraho, titoki matagouri, manuka, kanuka, mahoe, prostrate kowhai, porcupine shrub, wiggly wig, shrubby torararo, toe toe and silver tussock.
59. Fire resistant plants such as the flaxes, broadleaf, five-finger, lemonwood, kohuhu, wineberry, matagouri, wiggly wig, prostrate kowhai, porcupine shrub and shrubby torararo could be used to lessen the possible spread of fire.

Summary of Ecology

60. The site is lacking in the elements of biodiversity. It is a very dry site with some weedy growth along the creek. With the advent of this Plan Change and subsequent subdivisions there is considerable potential to increase the biodiversity of the site through a planting programme. Such measures will therefore link this site with the Taylor Dam and lower slopes of the Wither Hills Farm Park. As a result, there will be nodes of ecological habitats for wildlife and bird life to frequent and inhabit. Planting within housing areas will

increase biodiversity of the site (see plans and examples 15.0 & 16.0 in Graphic Supplement).

61. Such a phenomena has occurred in the Moutere Hills near Mapua in the Tasman District. This area consisted of a monocultural landscape of either pine plantations or pastoral land. It was bereft of native vegetation and wildlife, but now there is a much more diverse and interesting ecology, due to planting and regeneration of native vegetation. The houses have been sited on higher ground adjacent to the gully systems and native vegetation now exists in the gullies to create habitats for birds and wildlife. While there maybe an increase in the built environment, the quality of the remainder of the landscape has now increased and is reminiscent of the type of vegetation that was there prior to human habitation.

Relationship to the Wider Landscape

62. There is no contiguous development from the CBD of Blenheim to this site, at the present point in time. However, there are various activities and land uses southwards along Taylor Pass Road through to Taylor Pass beyond this property, where houses are located on lifestyle blocks. It is a logical direction for Blenheim's growth to occur in the direction of Taylor Pass and Maxwell Pass. Boundaries exist to Blenheim's growth in other directions, such as Wither Hills Farm Park in the south, and the vineyards to the west and Spring Creek and vineyards in the north. The proposed enclave of Maxwell Hills has the potential to become linked to Blenheim's current developments given the increased growth of the town. With this in mind the Wither Hills Farm Park will perform an important function as public open space between subdivisions.
63. While the landfill is an industrial operation, its presentation is one of open space and vegetation and it is perceived as being linked to the Wither Hills Farm Park.
64. On the east side of Taylor Pass Road a new subdivision has been developed by the Marlborough District Council between the hospital and the farm park and this is to be extended in the future. Within the Borough boundary on the

west side of Taylor Pass Road Marlborough District Council are also developing further residential sections. This is opposite the area they have already developed on the eastern side of Taylor Pass Road. There is also a new school, pockets of industry, Wairau Hospital, the transfer station, a Riding for the Disabled facility and a small shopping complex linked by the arterial route of Taylor Pass Road, and all lying south of Alabama Road.

Assessment of Landscape Effects

65. The landscape and visual effects are those effects of the Plan Change on the surrounding landscape. The Fourth Schedule to the Resource Management Act 1991 states that an Assessment of Effects on the Environment should include consideration of any physical effects including any landscape and visual effects.
66. Sections 7(c) requires regard to be given to maintenance and enhancement of amenity values and the quality of the environment.
67. The RMA doesn't define 'landscape' but it does require the applicant to make an assessment of such matters as landscapes and amenity values.

Amenity Values

68. Under Section 7(c) of the RMA, regard must be given to the maintenance and enhancement of "amenity values". These are defined as:

"Those natural or physical qualities and characteristics of an area that contribute to peoples appreciation of pleasantness, aesthetic coherence and cultural and recreational attributes."

69. In relation to this development the amenity values relate to outlook, panoramic views, a sense of remoteness, and natural character of the location. These values can be influenced by such factors as viewing position, who is viewing the site (e.g. recreationists, travellers etc), the degree of

change in the landscape a viewer can accommodate, and the value local inhabitants place on the location.

70. Visual effects relate to the changes that arise in the composition of available views due to changes to the landscape, to peoples responses to the changes, and to the overall effects with respect to visual amenity.
71. The site is not an outstanding natural feature nor is it in an outstanding landscape, and it has only moderate amenity value. It is located in a hill and river valley landscape which has a coherent natural landform pattern, but the natural qualities of the site such as land cover are of relatively low quality. There are however a lack of buildings and roads.
72. The proposed site is not a particularly sensitive one due to its lack of visibility from public viewpoints (see viewpoints and visibility maps 7.0-8.3 in Graphic Supplement).
73. A sensitive site is one where the visual effect of change would be more noticeable, such as skyline ridgelines. For this site the lower river terrace area has a low degree of sensitivity and therefore is more suitable for the location for rural-residential housing.
74. A combination of the site's rarity and coherence determines the importance of a particular site. Rarity is a measure of how common a landscape is within the district. For example, if a site is a particularly rare one then it may be distinctive for that region, such as the pancake rocks at Punakaiki. If it has a low rarity value then there will be many landscapes of that same type. This site would fall into the latter category as it is a landscape which is repeated elsewhere throughout the district.
75. A coherent landscape is one which has unity and harmony within its boundaries. One that is highly coherent has a harmonious relationship amongst its components. For this landscape there is moderate to high coherency throughout. There is an uninterrupted rhythm of forms and the

existing vegetation and lack of structures does not prevent this rhythm occurring. Therefore, combining these two elements for this site means the site has a low level of importance.

Visibility

76. Visibility is a determination of how easily and regularly a landscape is seen by people. This can contribute to the importance of a particular landscape.
77. The visibility of an object can determine the visual effect. This need not necessarily be a negative effect but new objects in the landscape can influence the amenity value of an area. It is often how well a new object can be integrated into a landscape as to whether a negative effect is created, as well as preservation and enhancement of the amenity value.

The visual catchment

78. The site has the potential to be viewed from very few viewpoints, making the site less visually sensitive.
79. The viewing audience will include those travelling along Taylors Pass Road and at the Taylor Dam (see panoramas 8.1-8.3 in Graphic Supplement).
80. The predominant changes would relate to the advent of buildings, roads and vegetation. These create a different landscape to that which currently exists. The larger rural-residential lots will allow for a greater presence of trees so as to better integrate the houses into the landscape.
81. It is a discrete site. It is not until one reaches the road beside the Taylor Dam that the site becomes visible from close range. From Blenheim the site is invisible due to its location being screened by the southern backdrop of Wither Hills Farm Park. From the Wairau Plain, and even from the Taylor Dam site itself, the site will not be visible due to screening by trees and landforms.

Viewpoint Assessment

82. The areas and settlements affected by the proposal have been identified using site investigations.

Viewpoint 1: Taylor Dam (see 7.1 and 8.3 in Graphic Supplement).

83. Due to the intervening topography between Blenheim and the site, the site is not visible from Blenheim. As well, there are few public viewpoints of the site from which there are any impacting views.
84. When travelling along Taylor Pass Road the first view of the site is adjacent to the Taylor Dam, as Taylor Pass Road curves to the southeast.
85. The viewshed consists of a pastoral landscape of grassland-covered hills and the river flats where willows and pine trees are located. The dam itself is a man-made addition to the landscape along with roads and fence lines.
86. The foreground landscape treatment will become a significant feature in ameliorating any short-term impacts. These plantings will in time soften the proposed development, thus reducing the full impact of the houses on the lower terrace. The fact that on the section fronting the main Taylor Pass Road, the elevation above the Taylor Dam flood protection zone will minimise any visual impact from the road for a large part of the development in this area.
87. From this viewpoint the Plan Change area will have a low to moderate impact on the local amenity, but this will diminish with time as the planting and restoration measures mature.

Viewpoint 2: Taylor Pass Road (see 7.2 in Graphic Supplement).

88. This is a viewpoint from the Taylor Pass Road looking northwards to the site, a distance of less than 1km. It is a close up view of the lower part of the west

facing slopes, but no view can be gained of the north facing slopes from this viewpoint.

89. Because of the close proximity of the viewpoint to the site the fine grain texture of the landscape is evident at this point. The whole of the proposed development will not be viewed in its entirety from this location.
90. As with the viewpoint from the road beside the Taylor Dam some of the components of the Plan Change area will be seen in detail from this viewpoint. With the maturation of the mitigation and enhancement measures, such as tree planting, the effect of the development on the character of the locality will recede and the parts of the development will be softened, screened and become integrated.

Summary of Effects on Amenity Values

91. The site displays a harmony of landforms and textures throughout, although it is only of moderate naturalness. Due to the fact that the site is open pastoral grassland of a fine-grained nature, as opposed to a heavy tree clad site, some changes on the lower terrace will be more visible than others.
92. The pastoral grassland land cover essentially contributes to the natural character of the site. There is very little regenerating vegetation on the site.
93. The roading and housing of the Plan Change area will reduce the natural character of the site. However, the site doesn't possess a great deal of intrinsic natural character and there will be more vegetation on the site to improve amenity and biodiversity values.
94. In summary, this site is a discrete one with low sensitivity. It is a modified environment of pastoral grassland, with the proposed site having high absorption capacity.