PLAN CHANGE HEARING

Independent Commissioners D Whitney (Chair), D Mead and S Stevens

10.30am on Tuesday 5th June and Wednesday 6th June 2018
at Edgewater Resort, Sargood Drive, Wanaka

NORTHLAKE INVESTMENTS LTD

Council Reference PC53

Notified Application & Submissions & Further Submissions

QUEENSTOWN LAKES DISTRICT COUNCIL

RESOURCE CONSENT HEARING

APPLICATION AS NOTIFIED

JOHN EDMONDS & ASSOCIATES

03 450 0009 | info@jea.co.nz
www.jea.co.nz
Level 2, 36 Shotover Street, PO Box 95, Queenstown 9300

25 October 2017

Ian Bayliss
Policy Manager
Queenstown Lakes District Council
Shotover Street
Queenstown

Dear Ian

Northlake Investments Limited

Private Plan Change Request to Queenstown Lakes District Council

The attached request has been prepared on behalf of Northlake Investments Limited for a private plan change.

This private plan change request proposes to:

- Adjust the Northlake Special Zone Structure Plan boundaries; and
- Amend the retail floor area rule in the Northlake Special Zone; and
- Delete the Northlake Special Zone community facility rule in Chapter 15 of the Operative District Plan; and
- Amend the signage rules in Chapter 18 of the Operative District Plan for commercial buildings in Activity Area D1 of the Northlake Special Zone

Information

The attached documentation includes:

- An evaluation under Section 32 of RMA
- Identification of any actual or potential effects and an "Assessment of Environmental Effects" as per the Fourth Schedule, including all necessary specialist reports
- Details of consultation undertaken to date and/ or proposed and the outcomes of this.
- Specification as to when each of the affected parts of the District Plan were made operative.
- An assessment of the Request in relation to the Council's relevant strategic documents.
- All necessary supporting technical reports

Fees

A deposit fee of $10,000 for processing this application has been lodged via the Council's on-line payment portal, using the payment reference NLPPC.

Correspondence Details

Please refer all correspondence to:

John Edmonds
John Edmonds and Associates Limited
PO Box 95
Queenstown

john@jea.co.nz
021-409-075

Invoicing Details
Please forward all invoicing to:

Marc Bretherton
Northlake Investments Limited
PO Box 818
Wanaka

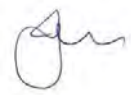
marc.bretherton@wintonpartners.co.nz
027 696 9550

Declaration
Northlake Investments Limited:

- Certifies that, to the best of its knowledge and belief, the information given in this Request is complete, true and correct; and
- Undertakes to pay all actual and reasonable costs incurred by Queenstown Lakes District Council in the processing of this Request; and
- Accepts that should it default, it agrees to pay all costs of collection, including agency fees, court costs and disbursements made in the collection of debt and reasonable solicitors fees regardless of judgement.

Please contact me if you require further information or clarification of any point.

Yours sincerely



John Edmonds
John Edmonds & Associates Limited

JOHN EDMONDS & ASSOCIATES

03 450 0009 | info@jea.co.nz
www.jea.co.nz
Level 2, 36 Shotover Street, PO Box 95, Queenstown 9300

27 November 2017

Craig Barr
Senior Planner: Planning Policy
Planning and Development
Queenstown Lakes District Council
Shotover Street
Queenstown

Dear Craig

Northlake Investments Limited

Private Plan Change Request to Queenstown Lakes District Council – Further Information

The letter provides a response to the matters raised by your e-mail dated 22 November 2017.

I have responded to the matters you have raised in the same order

1. *It would be helpful if a structure plan was provided with the application to illustrate the requested final location of the activity areas (if not the entire structure plan, at least the area affected by the plan change). The application only shows excerpts in the body of the text as each area is discussed.*

The proposed Structure Plan is now included as Attachment F to the Request (refer 2 below).

2. *Part 7.7 of the landscape/urban design report makes some recommendations that appear to require to involve new rules. In the applicants view, are these intended to become new rules? or are the issues already managed within the rules/provisions. Are any new provisions required to be identified as part of the application?*

Correct, the recommendations in the Baxter Design Group report are most appropriately addressed as consequential rule amendments. An amended Request is attached, that incorporates these recommendations together with additional assessment in terms of Section 32 of the Act (refer part 7 of the Request from page 48).

3. *Although unrelated to the application, Rule 12.34.2.5 x specifies that the removal and/or felling of trees in a 'tree protection area' requires a resource consent. Would it also be helpful to add works within the root protection zone and significant trimming? If the intent of the rule is to protect vegetation? (PDP Chapter 32 contains definitions of these activities that might be useful).*

It is considered that the existing Tree Protection Area rule is appropriate, and does not need to be changed or altered.

The Tree Protection Area is located on land that is outside of the Plan Change area, and not within the ownership of Northlake Investments Limited. The Tree Protection Area notation occurs on land owned by: Allenby Farms Limited, Exclusive Developments Limited, and Callum Urquhart.

Northlake Investments Limited does not wish to propose changes to rules that affect other people's land.

4. *The Northlake Chapter does not appear to include any rules to manage hazardous substances. Do you consider this to be an opportunity to include rules, or do you consider this issue to be managed by other legislation?*

The operative Northlake Zone does not include any rules that manage the effects of hazardous substances. The current Operative District Plan is structured to manage hazardous substances through district-wide chapter 16 (Hazardous Substances)

It is considered that the existing framework is the most appropriate and consistent method of managing this issue.

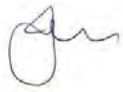
5. *Rule 12.34.2.6 states that Fish and meat processing is prohibited. This could have Implications for a supermarket if it includes a butchers, or any other boutique butchery that is probably a reasonable expectation to occur in AA-D1. On the basis that effects such as odour and noise can be managed by other rules, does this rule need to be modified to enable these activities within Area D1, at least? Perhaps an advice note or exception could also be helpful setting out these prohibited activities do not apply to permitted residential activities?*

Having reviewed other chapters in the operative District Plan it is considered appropriate to provide an exemption to the Prohibited Activity status of 'fish and meat processing' where such processing is related to food retail premises (refer part 7 of the Request at page 48).

This amendment to the Northlake Special zone rule in consistent with and uses the same wording as the Remarkables Park Special zone.

Please contact me if you require further information or clarification of any point.

Yours sincerely



John Edmonds
John Edmonds & Associates Limited

Encl. Private Plan Change Request – Northlake Special Zone
November 2017
(including Attachment F – Northlake Structure Plan – Amended)

Private Plan Change Request

Northlake Special Zone
Outlet Road, Wanaka

November 2017

John Edmonds & Associates Ltd
PLANNING • ENVIRONMENT

The Requester and Property Details

Requester

Northlake Investments Limited

Address for Service

John Edmonds & Associates Limited
PO Box 95
Queenstown

Site Address

Outlet Road, Wanaka

Site Area

106.88 hectares

Legal Description

Lot 90, 2000 DP 510104 and Lot 66 DP 371470 (CFR 781044)

Zoning

Northlake Special Zone

Request

This private plan change request proposes to:

a. Adjust the Northlake Special Zone Structure Plan boundaries; and
b. Amend the retail floor area rule in the Northlake Special Zone; and
c. Delete the Northlake Special Zone community facility rule in Chapter 15 of the Operative District Plan; and
d. Amend the signage rules in Chapter 18 of the Operative District Plan for commercial buildings in Activity Area D1 of the Northlake Special Zone
e. Make consequential amendments to specific rules

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1.0 Introduction

1.1 Executive Summary

This Evaluation Report has been prepared to support a private plan change request to by Northlake Investments Limited (Requester) in respect of provisions of the Operative District Plan (ODP) which apply to the Northlake Special Zone (NSZ). The Request seeks to:

- Amend the boundaries of particular Activity Areas to enable more efficient use of urban zoned land, and to provide flexibility to develop a retirement village; and
- Increase the retail floor area restriction to enable a small supermarket to be established; and
- Amend the signage rules to recognise that increased signage is appropriate for commercial buildings in Activity Area D1; and
- Remove Subdivision Rule 15.2.16.3 relating to Community Facilities from Part 15 of the ODP for future administrative certainty.
- Make consequential changes to specific rules in response to expert reports.

1.2 The First Schedule of the Resource Management Act 1991 (Act)

The procedure for requests to change a District Plan are set out in the Part 2 of Schedule 1 of the Act.

This Request is made in accordance with those requirements, and the assessment required by Section 32 of the Act.

Clause 25 sets out the processing options for a local authority which are:

a. Adopt the request as if it were a proposed plan prepared by the local authority itself; or
b. Accept the request (in whole or in part) and proceed to notify it; or
c. Deal with the request as it were an application for resource consent; or
d. Reject the request (in whole or in part), but only on the grounds that:
    i. The request is frivolous or vexatious
    ii. The substance of the request has been considered or given effect to (or rejected) by the Council or the Environment Court within the past 2 years; or
    iii. The request is not in accordance with sound resource management practice; or
    iv. The request would make the policy statement or plan inconsistent with Part 5; or
    v. The policy statement or plan has been operative for less than 2 years.

The Requester seeks that the Queenstown Lakes District Council (Council) accept the request in whole in accordance with clause 25(2)(b) of Schedule 1.

This Evaluation Report confirms that the request is:

a. neither frivolous nor vexatious (cl. 25 (4)(a)), and
b. in accordance with sound resource management practice (cl. 25 (4)(c)); and
c. consistent with Part 5 of the Act (cl. 25 (4)(d).

In terms of Clause 25(4)(b)(i) and 25(4)(e); the substance of the request has been considered by the Environment Court within the 2 years prior to 17 December 2017. The Environment Court's decision confirmed the re-zoning of the land on 17 November 2015, and the Council adopted that decision at its meeting in November 2015. The Northlake Plan Change 45 was made operative by the Council by public notice on 17 December 2015.

The Northlake Zone has been operative for 22 months (as of September 2017), and will be close to the 2-year period by the time that the Council has received and reviewed this request.

By the time the Council gets to consider its processing options for this request, it will be only a matter of weeks at the most before the 2-year period referred to in clause 25 (a)V) is reached on 17 December 2017.

1.3 Scope of the Plan Change

The proposed change relates to part of the land owned by Northlake Investments Limited, located entirely within the NSZ.

More specifically, the request involves five components:

- Amend the boundaries of particular Activity Areas to enable more efficient use of urban zoned land, and to provide flexibility to develop a retirement village; and
- Increase the retail floor area restriction to enable a small grocery store to be established; and
- Amend the signage rules to recognise that increased signage is appropriate for commercial buildings in Activity Area D1; and
- Remove the Part 15 subdivision rule relating to Community Facilities, for future administrative certainty.
- Consequential rule changes that address matters raised in expert reports.

1.3.1 Amend the Structure Plan

The adjustment of the Activity Area boundaries occurs within that part of the site involving Activity Areas D1, C2, B3, B2 and E1, which is generally located to the north of Northlake Drive and west of Outlet Road.

The adjustments include relatively small movements of the Activity Area boundaries to ensure that land proposed for residential development is fully contained within the appropriate urban Activity Area.

The primary adjustment provides for 4.2 hectares of land (cumulatively) to be changed from B3, C2 and E1 to D1, for the purpose of enabling a retirement village to be established, in a location, that is appropriate for that activity.

1.3.2 Retail

The second part of the Request relates to the Zone Standard 12.34.4.2 (viii) (b) and (c) regarding the gross floor area of retail activity individually and cumulatively. The change proposes enable the provision of a single retail activity of up to 1,250m^2 gross floor area (gfa), and increase the total retail floor area enabled within the zone to 2,500m^2.

The purpose of this change is to enable a small supermarket to be established within the NSZ that can provide local residents with a local grocery shopping alternative.

1.3.3 Signage

The third aspect of the Request is to amend the Sign rule in Chapter 18 of the ODP, to ensure that commercial signage rules are applied to buildings and activities within the D1 area. The operative sign rules apply the residential standards across the whole of the NSZ, and do not differentiate the D1 area where commercial buildings up to 10m high are anticipated to occur. The Zone Statement describes a small commercial precinct developing that serves local needs, and as part of developing that activity it is important that adequate provision is made for commercial signage.

1.3.4 Community Facilities

The fourth aspect to the Request is to delete Zone Standard 15.2.16.3, which is titled 'Northlake Special Zone – Community Facilities'. This intent of this rule is to ensure particular 'community activities' are provided during early stages of subdivision of land in the zone. Those subdivision stages have occurred, and the facilities either provided or alternative facilities approved and completed or under construction. The Council has interpreted this rule as applying to all subsequent subdivision activity within the zone; beyond the point at which the facilities have been provided. This is inappropriate and unnecessarily administratively cumbersome. To avoid any future complications over the status of subdivision applications it is considered that it will be most efficient to delete this rule.

1.3.5 Consequential Changes

The fifth aspect to the Request is to make consequential changes to specific rules to address the recommendations made in the Landscape/ Urban design report, and in response to requests for information/ clarification from Council staff. These changes relate to:

- Amending the *Prohibited Activity* rule to clarify that 'fish and meat processing' can occur within a food retail premises;
- Amending the *Setbacks from Roads* rule, so that buildings with AA-D1 tot hr north of Mt. Burke road are setback a minimum of 7.0m
- Amending the *Access* rule to restrict vehicle access from AA-D1 directly onto Outlet Road;
- Amending the *Landscaping and Planting* rule to ensure that a consistent landscaped edge develops along the western side of Outlet Road;
- Amending the *Building Height* rule to limit buildings within 40m of Outlet Road that are within that part of AA-D1 to the north of Mt. Burke Road to 2 levels;

1.4 Structure of this Report

This Evaluation Report has been prepared to fulfil the statutory requirements for a private plan change request. Expert reports were commissioned to assess specific aspects of the proposal in support of the request:

Landscape/ Urban Design:	Baxter Design Group Ltd
Report Title:	Northlake Investments Limited – Private Plan Change Request
Date:	September 2017
Attachment B	

Infrastructure:	Paterson Pitts Group Ltd
Report Title:	Feasibility of Utility Services & infrastructure Report
Date:	September 2017
Attachment C	

Transportation:	Carriageway Consultants Ltd
Report Title:	Northlake subdivision – Proposed Plan Change
Date:	September 2017
Attachment D	

Economics:	RCG Limited
Report title:	Northlake Special Zone- Assessment of Economic Effects

Date:	September 2017
Attachment E	
Structure Plan:	Baxter Design Group Ltd
Date:	22 September 2017
Attachment F	

This Evaluation Report is structured in the following manner:

Part 1 Introduction, scope, purpose and features of the plan change;

Part 2 Location and existing environment;

Part 3 A detailed description of the proposed changes in the context of the operative NSZ purpose, objectives, policies and rules;

Part 4 Identification and assessment of the most appropriate objectives, policies and methods to address the issues raised in the request in the context of the NSZ (section 32(1));

Part 5 Assessment of the effects on the environment;

Part 6 An outline of the statutory framework, and an assessment of all of the relevant issues and documents; and

Part 7 The proposed amendments to the ODP.

2.0 Location and Existing Environment

2.1 Location

The request relates to land contained within the northern half of the NSZ, which is located on the western side of Outlet Road, Wanaka as indicated in Figure 2 below:

Figure 1: Location Plan

2.2 Land Owner and Legal Description

The land to which the request applies is described as Lot 90 and 2000 DP 510104 and Lot 66 DP371470 (CT781044). The land is held in the ownership of the applicant; Northlake Investments Limited.

A copy of the title is included as Attachment A. The total area of this title is 106.88 hectares.

Legal Description	Computer Freehold Register	Landowner	Parcel Area
Lot 90, 2000 DP 510104 and Lot 66 DP 371470	781044	Northlake Investments Limited	104.6499 hectares

Table 1: Land Subject to the Plan Change Request

2.3 Zoning

The NSZ was incorporated into the ODP by resolution of the Council on 17 December 2015, following a privately initiated plan change process.

The zone is included as Chapter 12-33 & 12-34 in the ODP.

The zoning applies to 220 hectares of land located in between Wanaka and Albert Town, with the intention of enabling the development of approximately 1,520 residential homes within several different neighbourhoods that are based upon a range of density. The zone includes a small commercial and community facilities node located alongside the main street, known as Northlake Drive.

The purpose of the Zone is described at page 12-358:

> *The purpose of the Northlake Zone is to provide for a predominantly residential mixed use neighbourhood. The area will offer a range of housing choices and lot sizes ranging from predominantly low to medium density residential sections, with larger residential sections on the southern and northern edges. The zone enables development of the land resource in a manner that reflects the zone's landscape and amenity values.*
>
> *The Northlake Special Zones includes a Structure Plan showing existing and proposed roads, the position of Activity Areas, the Building Restriction areas and Tree Protection Areas. Subsequent provisions refer to these terms. An important component of the zone is the need to submit an Outline Development Plan as part of an application for consent to specified activities prior to development, to ensure the zone is developed in an integrated manner.*

The Zone includes six objectives and associated policies that inform the development of the land, and they include:

> *Objective 1 – Residential Development*
> *A range of medium to low density and larger lot residential development in close proximity to the wider Wanaka amenities.*
>
> *Objective 2 – Urban Design*
> *Development demonstrates best practice in urban design and results in a range of high quality residential environments.*

Objective 3 – Connectivity
Development that is well-connected internally and to networks outside the zone.

Objective 4 – Landscape and Ecology
Development that takes into account the landscape, visual amenity, and conservation values of the zone.

Objective 5 – Recreation
The establishment of areas for passive and active recreation.

Objective 6 – Infrastructure
Provision of servicing infrastructure to cater for demands of development within the zone in an environmentally sustainable manner and to enhance wider utility network systems where appropriate.

The objectives and policies are implemented through a Structure Plan (refer Page 12-383) which identifies the various Activity Areas. The Structure Plan also defines:

- the general layout of the zone;
- the primary internal road network;
- external road intersections,
- pedestrian linkages and routes through the zone;
- areas to be protected from any development;
- tree protection and building restriction areas and
- the developable areas.

Activity Area A is a 30-hectare block of land that has been subdivided and developed for Rural Residential purposes. This land is located at the corner of Aubrey and Outlet Roads.

Activity Area B1 to B5 is the largest area (88.4 hectares), and is intended for low density residential development. Rather than a minimum lot size, a target density has been introduced for this area, to provide landowners with flexibility and encourage better urban design outcomes. The target density is 10 dwellings per hectare, with a range of plus or minus 15%. The density calculation includes land held as reserve, open space, access or roading.

Activity Area C (C1 – C4) is located toward the northern and eastern edges of the zone, and includes the more elevated areas. The target density is 4.5 dwellings per hectare to recognise the topography of these areas.

Activity Area D1 (15 hectares) is the central node which enables a higher density of 15 dwellings per hectare, while also including an area for commercial and community activities. That part of AA-D1 that is used for non-residential activities is excluded from the density targets.

There is scope (Rule 12.X.6.2 (i)) for the boundary of Activity Area D1 to be expanded by up to 50m into the adjoining AA-B areas. The movement of the AA-D1 boundary was approved as part of the Council approval of the initial Outline Development Plan decision – RM160152.

Activity Area E (E1 – E4) applies to those areas within the northern parts of the zone, the margins of the Clutha River and the ephemeral stream that runs through the Exclusive Developments Limited land east of Outlet Road towards the Hikuwau Conservation area.

2.4 Receiving Environment

The receiving environment is defined by the urban zoning of the NSZ, which contemplates a mixed density residential neighbourhood that will be progressively developed.

The first stage of development within this zone involved implementing a pre-existing subdivision consent for 67 rural-residential sized lots within the southern-most part of the zone (adjoining Aubrey Road) from 2012 to 2015. Over half of the sites have been built upon in this part of the zone.

Resource consent (RM160152) for an integrated Outline Development Plan for Stages 1 to 9 of the Northlake Investments Limited (NIL) land was approved by the Council for the creation of 421 lots in June 2016. Significant earthworks have occurred throughout Activity Area B4 and all but the northern part of Activity Area D1 in conjunction with recently approved subdivisions (RM160509, RM161292). New roads have been constructed, infrastructure installed, and residential sites established. This has included a new 'low impact design' stormwater network. Telephone and power reticulation has been substantially upgraded to service these new lots; ultra-fast broadband has been brought to the site from the town centre. Outlet Road has been sealed from the intersection of Aubrey Road for a distance of 730 metres. A playground, tennis court and public reserves have bene completed, with construction about to commence on the medical centre, early childhood centre, restaurant and café.

The northern more elevated land owned by NIL (mostly Activity Areas C and E) remain in pasture.

The other land within the NSZ is owned by Allenby Farms Limited, Exclusive Developments Limited (both 38 hectares each) and Callum Urquhart (21 hectares) and all blocks remain undeveloped at this time, with no resource consent approvals to enable development. The Allenby Farms Limited block is mostly included within Activity Area B4 (34.5 hectares) and likely to result in approximately 345 dwellings, whilst the Exclusive Developments Limited land on the eastern side of Outlet Road may yield approximately 200 dwellings. The Urquhart land will result in approximately 20 residential units

The recent consent history for the zone, since the NSZ was made operative, is as follows:

RM160152	Outline Plan approval for stages 1 - 9 QLDC 9 June 2016	
16-078	Certificate of Compliance for Stormwater disposal Otago Regional Council 26 April 2016	
RM160186	Land Use: QLDC 9 May 2016	Bulk earthworks for Stages 1 - 7
RM160509	Subdivision: QLDC 10 October 2016	Stages 1 – 3
RM161292	Subdivision: QLDC 5 May 2017	Stages 4 – 6

RM161127	Land Use: QLDC 14 February 2017	Bulk earthworks for Stages 8 & 9
RM170361	Subdivision: QLDC 30 June 2017	Stages 8 – 9
RM161230	Land Use: QLDC 5 May 2017	Health Centre
RM170418	Land Use: QLDC 6 July 2017	Restaurant
RM170368	Land Use: Early Childcare Centre QLDC 14 July 2017	

2.5 Consultation

Consultation has occurred with senior Council staff (Monday 28 August) when the scope of the proposed plan change was raised and discussed.

Feedback was received highlighting information requirements that Council staff would anticipate reviewing as part of the change including:

- Economic effects on the vitality of the town centre and other areas
- The relevance of the National Policy Statement- Urban Development Capacity
- Whether an integrated traffic management assessment is necessary at the plan change stage
- Assessment of consistency with current objectives and policies for the zone
- Future connectivity

3.0 The Issues that the Plan Change Seeks to Address

3.1 Introduction

In order to undertake the evaluation required by section 32 of the Act it is necessary to understand the context of the plan change – the issues that it seeks to address.

This part of the report provides the context of this proposed plan change.

3.2 Identification of Issues

The key resource management issues that NIL faces are related to improving the efficiency of the zone provisions to ensure that appropriate land uses can occur that will most appropriately achieve the intentions of the zone which are to provide a predominately mixed use residential neighbourhood that offers a range of housing choices and necessary services that enable an integrated residential community to properly function.

As NIL has progressed through the first development phase, it has recognised that there is a need to enable more efficient utilisation of its zoned land; which includes making better use of the lower lying land to the west of Outlet Road. This includes the opportunity to establish a retirement village within that same area. A retirement village does require an adequate provision of predominantly flat land that is located within an established residential community, close to essential services such as shops, medical and community facilities.

Initial consenting of the Activity Area D1 precinct has occurred, and construction is about to commence on the medical centre, childcare facilities and also the café/ restaurant. NIL has reviewed the various commercial and community facilities for this area, and recognised that, with general growth that has occurred in Wanaka in recent years, combined with the residential potential of Northlake and the surrounding urban area, a suitably sized retail food outlet and additional retail facilities should be established within the D1 area.

Secondary issues include recognition that signage within the D1 area is more appropriately managed under most relevant/ similar commercial precinct rules; which are the 'Corner Shopping Centre Zone' signage rules.

It is also recognised that the required community facilities have either been provided or alternate facilities consented and being constructed; and as a result, the retention of those rules is no longer appropriate or necessary.

The land within this northern part of the NSZ comprised a series of low rolling hummocks that were used to define Activity Area boundaries. However, as master-planning and detailed street design has occurred, the appropriateness of these boundaries has been reassessed and re-evaluated. The Baxter Design Group landscape report recognises that as earthworks have progressed over the site the boundaries of those Activity Areas have become less well defined. The landscape values of the northern part of the NSZ will not be adversely affected by adjusting these activity area boundaries.

3.2.1 Integrated Master Planning the NSZ

The development of the NIL land has logically progressed from the southern corner of the site, with a focus on initially creating residential lots within AA-A, B3 and D1.

More recently consents have been obtained for a range of commercial buildings adjoining Northlake Drive; including a health centre (including doctor's surgery, pharmacy, dentist, and health and fitness facility), a childcare centre (up to 80 children) and a café/restaurant.

Providing for urban development at Northlake has required some re-shaping of the land to provide affordable sections supported by a safe and efficient roading and infrastructure network. An important design factor has also been to align the roading network within the landform; minimising the need for excessive cut and fill.

Detailed design work and the layout of the residential neighbourhoods has been occurring for the past two years. These designs include the necessary cut and fill to create practical developable residential sections and neighbourhoods throughout the lower slopes of the NIL land. The land to the north of Northlake Drive, and to the west of Outlet Road will be developed in a series of north-facing elevated terraces with a high residential amenity. The remaining land to the west (B2 and B3) will be separated by a more significant high terrace – that will become the more defining landscape element and will more appropriately signal a change in character and density between the Activity Areas. The proposed amended boundary between Activity Areas D1 and B3 is based upon this new terrace feature.

The recent designs for Activity Areas B2, B3 and C1 ensure they form part of a well-connected urban environment (Objective 3). These neighbourhoods are located on those plateaus to the north and west of the D1 area. There is a need to slightly adjust the boundaries of those Activity Areas to better suit the updated master plan for these areas. These changes are very minor and are supported by the landscape analysis.

3.2.2 Developing a Cohesive Community

The NSZ provides the opportunity for approximately 1,520 residential units to be developed. The zone is structured around the central village area that is aligned either side of Northlake Drive within the D1 area.

The zoning in Activity Area D1 enables a wide range of activities including medium density residential, retirement living, commercial, community and retail activities.

As the Wanaka community continues to expand there is an opportunity to provide a local food retail offering within the NSZ. Such an offering significantly reduces travel distances for consumers and adds to the convenience of living at Northlake and north Wanaka.

Work on the establishing the NSZ commenced in 2011, when background reports were first prepared. Almost 7 years has passed, and during that time Wanaka has experienced significant growth. It will take approximately 2 years for this proposed plan change process to be complete and for any grocery offering to be constructed and trading for business. Those reports have been updated to reflect the current and future commercial retail floor space requirements.

Wanaka is currently served by a single supermarket located in the centre of the CBD. That location is highly inefficient from a consumer and traffic management perspective, as it requires all shopping to occur in the one location, and places strain on the local roading and parking networks.

The RCG Report assesses the existing retail and commercial floor space in Wanaka as well as future zoning for retail (including Large Format Retail) and concludes that Wanaka is "currently under-supplied with retail

space" and that it will "…be able to support substantial increases in its retail offering - indeed it could accommodate substantial increases already".

3.2.3 Ensuring Efficient and Predictable Consent Processes

The NSZ was made operative in December 2015. Since that time a series of land use and subdivision applications have been submitted and approved for development (refer 2.4).

These consents have given effect to the purpose and intent of the underlying zoning, and all of the applications have been processed on a non-notified basis.

Plan provisions are not always perfect, and as land development occurs it is appropriate to identify any issues in those provisions and rectify them where possible.

The subdivision chapter contains a particular rule that only applies to the NSZ, and requires the provision of 'Community Facilities' in connection with approval of the 51st residential lot. Non-complying activity status applies to all subdivision in the NSZ where these facilities are not all provided in that first instance.

Some of those facilities were provided at the first instance, whilst other alternative facilities were provided in connection with subsequent subdivision or land use applications. As a result of not providing all of those facilities in the first instance, all subsequent applications for subdivision anywhere in the NSZ inherit a non-complying consent status. In a residentially zoned neighbourhood that consent status carries an inappropriately high risk, and is administratively inefficient.

Given these facilities have now all been provided or are under construction, it is more efficient that this rule be removed from the Plan, for the benefit of NIL and other landowners in the zone.

In a similar context, the rules that manage signage on buildings is contained within Chapter 18 of the ODP. These rule categorise similar zones together and apply a standard set of rules. All of the Activity Areas of the NSZ are currently grouped together with the other residential zones.

The D1 area anticipates a wide range of commercial, retail and community activities and it is important that adequate and appropriate signage is available to the various business that will want to establish in this area.

3.3 Consideration of Options to Address the Issue

The Council notified a partial Proposed District Plan (PDP) in September 2015. That notification did not include any of the zones or issues that had been recently considered by the Council through plan change processes, including the Northlake Zone.

The available resource management options to address the issues identified above include:

1. Do nothing, and instead rely upon the operative zoning. This approach relies upon addressing the issues through separate resource consent applications.

2. Address these issues through the private plan change process.

3. Address these issues through a future stage of the Proposed District Plan

   Whether option (3) of addressing these issues through the Proposed District would be available is uncertain and, if available, the timing is unknown. The current inefficient and costly situation

would continue for an unknown period of time. This option is not considered further in this Report.

Each of the four components of this request have been assessed under options (1) and (2):

3.3.1 Adjusting Activity Area Boundaries

This option includes amending the Structure Plan for the NSZ to increase the size of the D1 area as described below:

3.3.1.1 Adjusting the boundaries of AA-B2, B3 and C1.

These adjustments are based upon efficient earthworks and subdivision plans being developed to a much higher level of detail. An actual street layout underpins the necessary boundary adjustments.

On the western boundary between Activity Areas B2 and E1, there are small areas of refinement.

The boundary between B2 and C1 (and E1) extends to the north by up to 20m (increasing the size of the B2 area by 2,460m^2), whilst the boundary between B3 and C1 extends to the north-west by 40-50m (increasing the size of the B3 area by 7,571m^2).

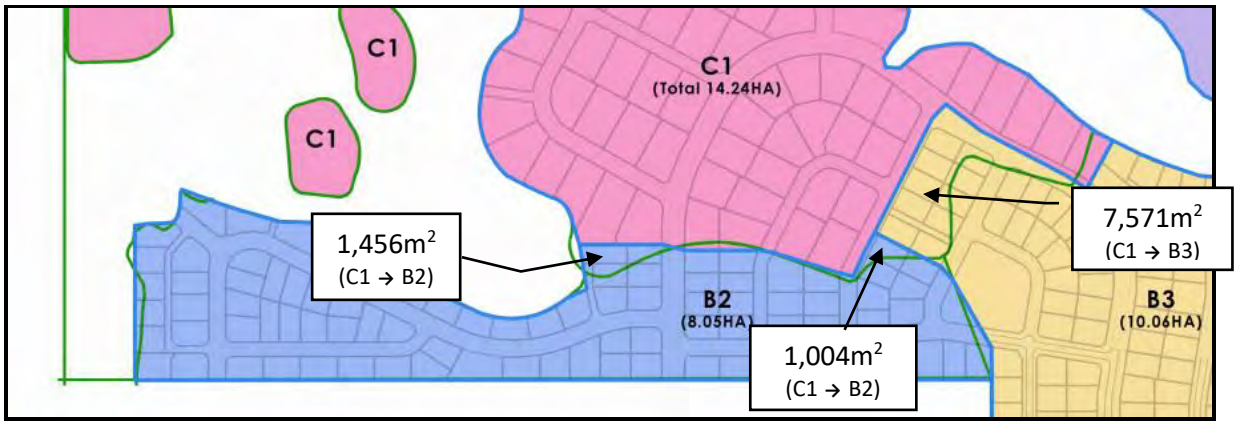


Figure 2: Activity Area Boundary Adjustments – C1

3.3.1.2 Adjusting the boundaries of AA-B3, E1, C2 and D1

Adjustments occur to expand the D1 area to the west and north by 4.2 hectares, incorporating parts of the western slopes of B3, a small area of E1, and that part of the C2 area that adjoins Outlet Road.

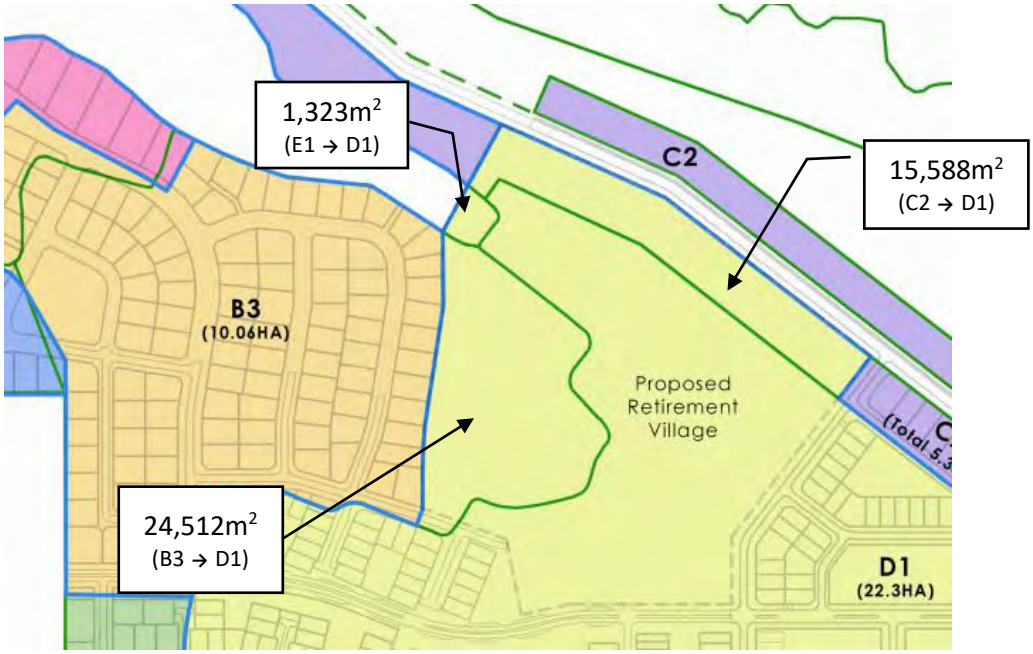


Figure 3: Activity Area Boundary Adjustments – D1

Option 1: Status Quo – Maintain current zoning and rely on resource consent processes	
Benefits	• Allows full details of application to be assessed. • Costs of process are met by the applicant.
Costs	• Inconsistent with the current planning framework; does not enable a retirement village (provided for in AA-D1, but listed non-complying activity in the operative Plan in Activity Areas B3, C2 and E1). • A resource consent (RC) application for a retirement village, in the location planned, will require an extensive set of very detailed plans of each structure to be prepared. • A resource consent is an approval for a specific set of plans that are required to be implemented. • Resource consent process is uncertain, costly and time consuming. • Inconsistent with the target densities for these areas – unlikely to gain Council support through RC process. • Lost opportunity to provide a retirement village at the appropriate scale in the northern part of Wanaka.
Efficiency & Effectiveness	• The RC process is inefficient because a retirement village requires significant investment to prepare necessary documentation – whilst there is a high level of risk/ uncertainty of outcome, after a long duration consent process. • Ineffective method due to the time and cost required to prepare and process an application, with the inherent uncertainty that involves.
Risk of acting (or not acting)	• Risk of consent applications being refused given operative rule framework of the ODP (refer to costs section above). • Land suitable for higher density housing would be used for low-density housing purposes which would be comparatively inefficient.

Option 2: Private Plan Change	
Benefits	• Clearly identify intended outcomes. • Provides certainty to Council and community on intended use of the land. • More efficient use of network infrastructure. • Simplicity for future District Plan administration. • Provides for variety and diversity within the residential community. • Specific detail on a supermarket proposal can still be assessed through a subsequent RC application. • Costs of process are met by the applicant.
Costs	• RC will still be required for specific retirement village development proposal after the re-zoning occurs.
Efficiency & Effectiveness	• Efficient use of existing infrastructure as zoning responds to growth. • Efficient pattern of development in terms of transport and pedestrian linkages. • Efficient use of land in enabling housing choice. • PC can be a very effective tool to respond to growth, allowing development to make efficient use of infrastructure and meet community needs.
Risk of acting (or not acting)	• Risk of Acting: site-specific zoning may be refused. • Risk of Not Acting: Risk of series of RC's for preferred development outcome, resulting in environmental and administrative costs and uncertain outcomes.

Table 2: Amending Activity Area Boundaries: RC v PC

3.3.2 Amending the Retail Rule

The ODP rule is Zone Standard 12.34.4.2 (viii) which states:

> *Retail*
> *(a) No retail activity shall occur within the Northlake Special Zone except in Activity Area D1.*
> *(b) No retail activity shall have a gross floor area exceeding 200m^2.*
> *(c) The total amount of retail floor area within the Northlake Special Zone shall not exceed 1000m^2.*

The operative zoning does not enable the development of a local supermarket facility due to the individual and cumulative floor area restrictions listed above.

This retail rule is associated with a (Restricted Discretionary) consent requirement for all commercial and community buildings – to ensure that they are appropriately designed as part of the local neighbourhood.

Site development will be subject to the bulk and location requirements of Activity Area D, which include:

- Road setback of 3m; and
- Internal boundary setbacks of 1.5m; and
- Building height of up to 10m; and
- Building coverage of up to 65%
- Modulated building forms (continuous building)

These bulk and location standards continue to be appropriate.

The adjusted retail rule provides:

Retail

(a) No retail activity shall occur within the Northlake Special Zone except in Activity Area D1.

(b) No retail activity shall have a gross floor area exceeding 200m^2, except for one activity with a maximum gross floor area of 1,250m^2.

(c) The total amount of retail floor area within the Northlake Special Zone shall not exceed 2,500m^2.

Option 1: Status Quo – Maintain current zoning and rely on resource consent processes	
Benefits	• Allows a full proposal/ application to be assessed.
Costs	• Inconsistent with the current rule framework. • Any application would be publicly notified. • Current rules impose a non-complying consent status to exceed the retail footprint. Section 104D threshold for approving a non-complying activity is a high risk. • Resource consent process under the current zoning is uncertain and time consuming, and the outcome is uncertain. • Potential lost opportunity to provide local community with an improved range of necessary retail and community services. • If consent is refused, then potential for increased use of roading network/ travel times and associated network impacts and costs by local residents to access other supermarkets.
Efficiency & Effectiveness	• The RC process is an inefficient and ineffective process for assessing the suitability of an increased retail floor area in the NSZ.
Risk of acting (or not acting)	• High risk of consent applications being refused given current rule framework of the District Plan (refer to costs section above).

Option 2: Private Plan Change	
Benefits	• Clearly identify intended outcomes. • Provides certainty to Council and community on intended use of the land. • Simplicity for future District Plan administration. • Enables appropriate food retail offering to be centrally located within a residential area. • Ensures that specific details can still be assessed through subsequent RC applications for a supermarket.
Costs	• PC process takes to time/ cost to work through issues.
Efficiency & Effectiveness	• Efficient process to allow all issues to be assessed.
Risk of acting (or not acting)	• High risk of RC application being refused given policy framework of the District Plan and zoning requirements (refer to costs section above).

Table 3: Amending the Retail Rule: RC v PC

3.3.3 Amending the Signage Rule

In the case of Signage – the ODP was updated via Plan Change 48 in 2015, to provide a comprehensive set of district-wide rules. The rules affecting Northlake do not distinguish between activity areas, and as a result the D1 area has been included with the general sign rules for residential activity. The D1 zoning enables and anticipates a village centre area that includes a range of commercial, retail and community buildings.

The current signage restrictions are set out in *Activity Table 2 – Residential Areas*, at page 18-6 of the ODP. Those rules allow:

Activity	**Signage Area**
Residential	up to 0.5m^2.
Recreation grounds, churches, medical facilities, nursing homes, educational institutions and community buildings	2m^2.
Visitor accommodation	2m^2 + 0.15m^2 for vacancy signage.

Table 4: Existing Signage Rules

Any sign that exceeds these standards requires discretionary activity consent, and particular assessment matters apply (18.3.1 (iii)) that are limited to only considering the effects of additional signage from a residential context.

It is proposed to amend the *Activity Table 1 – Commercial Areas* rules as set out at page 18-4 in the ODP, by adding 'Activity Area D1' to the Corner Shopping Centre Zone column. Additional text is also included to *Activity Table 2 – Residential Areas* to clearly reference the exclusion of AA-D1.

Option 1: Status Quo – Maintain current zoning and rely on resource consent processes	
Benefits	• All commercial signage assessed by separate consents.
Costs	• Resource consent process is uncertain and time consuming. • Potential for ad hoc outcome. • Potential for tenancies to suffer from lack of reasonable commercial exposure – due to enforcement of residential sign rules.
Efficiency & Effectiveness	• Inefficient and ineffective method to managing signage within the village centre.
Risk of acting (or not acting)	• (risk of not acting) upcoming tenants faced with extra costs of RC, and uncertainty of obtaining adequate commercial exposure. • Potential for publicly notified resource consents for signage – whilst activities are permitted, and buildings are consented. • High risk of consent applications either being refused or minimal signage allowed given operative rule framework of the District Plan and zoning requirements (refer to costs section above).

Option 2: Private Plan Change	
Benefits	• Provides tenants with certainty that commercial premises can be appropriately signed/ advertised. • Consistent approach to the local shopping nodes across the district in the District Plan. • Existing set of rules – will be more likely to secure consistent outcomes.
Costs	• No apparent costs.

Efficiency & Effectiveness	• More efficient to adopt existing signage rules from other existing small commercial precincts.
Risk of acting (or not acting)	• No apparent risk of acting.

Table 5: Amending the Signage Rule: RC v PC

3.3.4 Deleting the Community Facilities Rule

The subdivision of land in the NSZ is generally a Restricted Discretionary consent process, with discretion restricted to ensuring that the subdivision plan is consistent with any previously approved Outline Development Plan. Such applications are listed as being 'non-notified' (rule 15.2.2.6 (i)), which provides landowners in the zone with a high level of certainty.

In respect of the Community Facilities requirements, subdivision rule 15.2.16.3 requires that particular 'community facilities' are provided by the subdivider. The requirement to provide these facilities occurs after consent has been granted for more than 50 residential lots within the zone (except for AA-A). These facilities include a 20 – 25m long indoor swimming pool, a fitness/ gym facility, a children's play area and at least one tennis court.

NIL has constructed a children's play area, a tennis court, and will provide a gym fitness facility within the new health centre building. The Council has recognised that the 25m indoor swimming pool requirement is appropriately substituted by the provision of the health centre, and in particular the medical centre that will provide for up to six doctors and specialists and support staff.

This rule applies across all land zoned NSZ (including Allenby Farms Limited and Excusive Developments Limited). The plan stipulates a non-complying consent status if this rule is breached.

NIL has been the first landowner within the NSZ to undertake subdivision. Through the course of subdivision approvals RM160509 and RM161292, NIL has built/ is building over 250 residential lots. Both consents have been assessed as non-complying, because not all of the facilities were provided in the first subdivision application. However, Council has accepted the provision of a health centre as an alternative to the pool.

Council consent staff now maintain that, even though the community facilities issue has now been addressed by compliance or consent, every subsequent application for subdivision will also be assessed as non-complying. That interpretation affects NIL and the other land-owners in the zone into the future.

Non-complying subdivision consent status is highly inefficient for urban zoned land and places unnecessary costs and risks on landowners. It is not in the Council's interests to maintain this consent status. It is proposed to delete this rule to avoid this administrative uncertainty and associated process costs.

Option 1: Status Quo – Maintain current zoning and rely on resource consent processes	
Benefits	• No apparent benefits.
Costs	• Non-Complying resource consent required for every subdivision in the NSZ. • Complicated, costly and time-consuming process.
Efficiency & Effectiveness	• Inefficient and ineffective method of responding to the issue.
Risk of acting (or not acting)	• Risk of consent applications being refused. • Deferred development of urban zoned land for housing purposes; increasing land costs for consumers.

Option 2: Private Plan Change	
Benefits	• Removes uncertainty. • Costs of process are met by the applicant.
Costs	• No apparent costs.
Efficiency & Effectiveness	• Most efficient and effective method – as the removed rule is no longer required.
Risk of acting (or not acting)	• Risk of not acting: Retains inappropriate rule (refer 'costs' above).

Table 6: Deleting the Community Facilities Rule: RC v PC

3.4 Appropriateness of Options

In each of the four issues identified above; Option 1 (Resource Consent) is considered inappropriate because the operative NSZ rules do not anticipate these outcomes and subsequent resource consent processes would involve a high level of risk and cost and a lack of certainty. Option 1 would result in unpredictable outcomes.

Option 2 (Plan Change) is considered the most appropriate, and enables the issues to be properly assessed and scrutinized at a strategic level. The plan change still ensures that specific development proposals are assessed through a consent process, whilst removing the uncertainties such as unnecessarily complicated consent processes for activities that are generally anticipated to occur.

4.0 Section 32 Assessment

4.1 Introduction to Section 32

The format of this part of the report is guided by section 32 of the Resource Management Act 1991, as amended by the Resource Legislation Amendments Act 2017. Section 32(1) requires an evaluation report to:

(a) examine the extent to which the objectives of the proposal being evaluated are the most appropriate way to achieve the purpose of this Act; and

(b) examine whether the provisions in the proposal are the most appropriate way to achieve the objectives by—
(i) identifying other reasonably practicable options for achieving the objectives; and
(ii) assessing the efficiency and effectiveness of the provisions in achieving the objectives; and
(iii) summarising the reasons for deciding on the provisions; and

(c) contain a level of detail that corresponds to the scale and significance of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the proposal.

When assessing the 'efficiency' and 'effectiveness' of the provisions in achieving the objectives the report must:

(a) identify and assess the benefits and costs of the environmental, economic, social, and cultural effects that are anticipated from the implementation of the provisions, including the opportunities for—
(i) economic growth that are anticipated to be provided or reduced; and
(ii) employment that are anticipated to be provided or reduced; and

(b) if practicable, quantify the benefits and costs referred to in paragraph (a); and

(c) assess the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the provisions.

This plan change request is defined as an 'Amending Proposal' for the purposes of section 32(3), and therefore any examination under section 32(1)(b) must relate to:

(a) the provisions and objectives of the amending proposal; and

(b) the objectives of the existing proposal to the extent that those objectives—
(i) are relevant to the objectives of the amending proposal; and
(ii) would remain if the amending proposal were to take effect.

The following sections sets out the relevant operative objectives, and provides a corresponding assessment under section 32(1)(a).

The four elements to this plan change request are then assessed under section 32(1)(b), taking into account those matters referred to above.

4.2 Examining the Appropriateness of the Objectives

This section of the Evaluation Report addresses section 32(1)(a), and assesses the four components of the Plan Change Request against the operative NSZ objectives, and other relevant operative plan objectives.

Given that this is an amending proposal, it is also necessary to provide an assessment of the NSZ operative policies, as they provide clarification on the scope of the objective.

Objective – Northlake Special Zone	**Relevant Component of the Plan Change Request**	**Is the objective the most appropriate way to achieve the purpose of the Act?**
Objective 1 – Residential Development *A range of medium to low density and larger lot residential development in close proximity to the wider Wanaka amenities.* *1.1 To establish a mix of residential densities that will provide a residential environment appealing to a range of people.* *1.2 To enable medium density living within the less sensitive parts of the zone in order to give Northlake a sense of place and to support a neighbourhood commercial and retail precinct.* *1.7 To provide for small scale neighbourhood retail activities to serve the needs of the local community within Activity Area D1 and to avoid visitor accommodation, commercial, retail and community activities and retirement villages within Activity Areas other than within Activity Area D1.*	The first objective is an enabling objective that facilitates the creation of a residential zone, which meets the expectations of the community for the site. A range of housing choice is promoted to enable future residents to meet their social and economic needs. This objective is the most appropriate way to achieve the purpose of the Act.	
	Amend the Structure Plan	The proposed amendments to the Structure Plan do not constrain or undermine the objective. There will remain a mix of residential densities across the zone. The expansion of the D1 area enables a necessary and adequate area of land to be made available for the purpose of a retirement village at an appropriate location. A retirement village is an important component to establishing an integrated community that provides a range of densities and typologies.
	Amend Retail Rule	The provision of a small supermarket and additional retail floor space (Policy 1.7) remains consistent with the relevant policy. The 1,250m^2 supermarket and the remainder of the 1,250m^2 of other retail floorspace (at no more than 200m^2 tenancies) remains as "small scale" to serve local community needs. The objective and policy can remain unchanged and still be relevant and consistent.
	Amend Sign Rule	N/A

1.8 To provide for community activities, including educational facilities, to serve the needs of the Northlake community and to be available for use by the wider Wanaka community. *1.9 To enable affordable housing by providing for cost effective development and by requiring a range of lot sizes and housing typologies, including 20 affordable lots (as defined in Rule 15.2.20.1).*	Delete Community Activity Rule	The community activities required by the operative plan have been provided through previous resource consent approval processes. The objective and Policy 1.8 can remain unchanged. Construction is about to commence on a childcare facility.
Summary	Objective 1 (and the associated policies) can remain without change – and is the most appropriate way of achieving the purpose of the Act.	

Objective 2 – Urban Design *Development demonstrates best practice in urban design and results in a range of high quality residential environments.*	The objective provides for well-designed residential development that enables future residents to meet their social, economic and culture needs through good urban design practice.	
	Amend the Structure Plan	An appropriate urban design outcome can be achieved through methods that remain a priority
	Amend Retail Rule	Enabling additional retail floor space will ensure that residents within the Northlake community can improve access and convenience for daily shopping needs; avoiding unnecessary vehicle trips.
	Amend Sign Rule	Commercial signage within AA-D1 will contribute to a focal point for this community, allowing commercial tenants to successfully advertise their premises
	Delete Community Activity Rule	N/A
Summary	Objective 2 can remain without change – and is the most appropriate way of achieving the purpose of the Act.	

Objective 3 – Connectivity	The zone will be connected to the rest of Wanaka, and internal connections will enhance the amenities of future residents.	
	Amend the Structure Plan	The adjustment to the boundaries will not alter existing pedestrian, cycling and road

Development that is well-connected internally and to networks outside the zone.		connectivity routes that are shown in the Structure Plan.
	Amend Retail Rule	Additional retail floorspace is proposed to be located in AA-D1 – which is centrally located within the NSZ.
	Amend Sign Rule	N/A
	Delete Community Activity Rule	Community facilities have been provided within AA-D1 where they are accessible to the community.
Summary	Objective 3 can remain without change – and is the most appropriate way of achieving the purpose of the Act.	

Objective 4 – Landscape and Ecology *Development takes into account the landscape, visual amenity, and conservation values of the zone.*	The more visually prominent areas within the zone will be protected from development, and remnants of native flora will be protected.	
	Amend the Structure Plan	The adjusted Activity Area boundaries have no impact upon the areas of vegetation identified on the Structure Plan and only minor impacts on the areas of landscape protection.
	Amend Retail Rule	N/A
	Amend Sign Rule	N/A
	Delete Community Activity Rule	N/A
<u>Summary</u>	Objective 4 can remain without change – and is the most appropriate way of achieving the purpose of the Act.	

Objective 5 – Recreation *The establishment of areas for passive and active recreation.*	The Structure Plan identifies areas that are to be retained in open space. Outline Development Plans will ensure that trails and connections are established.	
	Amend the Structure Plan	The amendments to the Structure Plan do not compromise the ability to establish suitable areas of passive and active recreation.
	Amend Retail Rule	N/A
	Amend Sign Rule	N/A
	Delete Community Activity Rule	The required Community facilities have already been provided or alternative facilities approved by consent.

Summary	Objective 5 can remain without change – and is the most appropriate way of achieving the purpose of the Act.

Objective 6 – Infrastructure *Provision of servicing infrastructure to cater for demands of development within and outside the zone in an environmentally sustainable manner and to enhance wider utility network systems where appropriate.*	The objective ensures infrastructure within the zone connects to existing networks and responds to requirements for upgrades.	
	Amend the Structure Plan	The net increase of residential units can be adequately serviced by existing and proposed infrastructure. Existing roading can accommodate supermarket traffic.
	Amend Retail Rule	Enabling a grocery store in AA-D1 can be adequately serviced by existing and proposed infrastructure. Existing roading can accommodate additional residential units or retirement village.
	Amend Sign Rule	N/A
	Delete Community Activity Rule	N/A
Summary	Objective 6 can remain without change – and is the most appropriate way of achieving the purpose of the Act.	

Table 7 – Assessing the Appropriateness of the Operative Northlake Zone Objectives

The operative Northlake zone objectives remain the most appropriate way to achieve the purpose of the Act, and do not require change.

Objective – Subdivision Chapter	**In what way is the objective the most appropriate way to achieve the purpose of the Act?**
Objective 1 – Servicing *The provision of necessary services to subdivided lots and developments in anticipation of the likely effects of land use activities on those lots and within the developments.*	The PPG report confirms that all infrastructure can adequately service the plan change area.
Objective 2 - Cost of Services to be Met by Subdividers *The costs of the provision of services to and within subdivisions and developments, or the upgrading of services made necessary by that subdivision and development, to the extent that any of those things are necessitated by the subdivision or development to be met by subdividers.*	The objective provides for well-designed residential development that enables future residents to meet their social, economic and culture needs through good urban design practice.

Objective 5 - Amenity Protection *The maintenance or enhancement of the amenities of the built environment through the subdivision and development process.*	The amenity of the NSZ and the amenity within the Outlet Road environment will remain largely unchanged as a result of the change. The objective does not require change.
Summary	The relevant Subdivision objectives can remain without change – and is the most appropriate way of achieving the purpose of the Act.

Table 8 – Assessing the Appropriateness of the Operative Signage Objectives

Objective – Signs Chapter	**In what way is the objective the most appropriate way to achieve the purpose of the Act?**
Objective 1 – Signs *Signs which convey necessary information and assist in creating a sustainable and vibrant community, while avoiding or mitigating any adverse effects on public safety, convenience and access and on the District's important landscape, streetscape, cultural heritage and water area visual amenity values.*	Amending the Signs chapter to enable the D1 area to utilise commercial signage provisions is the most appropriate way to achieve the purpose of the Act. Amending the signs rule provides a consistent approach to local scale commercial nodes in the District Plan, across the district.
Summary	Objective 1- Signs can remain without change – and is the most appropriate way of achieving the purpose of the Act.

Table 9: Assessing the Appropriateness of the Operative Subdivision Objectives

4.3 Examining the Appropriateness of the Provisions

Section 32 (1)(b)(ii) requires an examination of whether the proposed provisions are the most appropriate way to achieve the objectives.

Amend the Structure Plan		
	Benefits	Costs
Environmental	An efficient use of land and infrastructure	
Economic (incl. growth & employment)	Appropriate land available for a retirement village at an attractive location in a currently under-supplied market.	
Social	As above	
Cultural	-	

Amend Prohibited Activity Rule		
	Benefits	Costs
Environmental	Clarifies that food retail premises can 'process' fish and meat	
Economic (incl. growth & employment)	Ensure that supermarket can establish within the Northlake Zone – providing a full range of food offerings to the community	
Social	-	
Cultural	-	

Amend Building Setback Rule		
	Benefits	Costs
Environmental	Ensures that increase of building height within that part of the AA-C2 area is offset by greater building setbacks; retaining a balance of open space	
Economic (incl. growth & employment)	-	
Social	-	
Cultural	-	

Amend Access Rule		
	Benefits	Costs
Environmental	Ensures that traffic safety on Outlet Road is maintained by reducing potential points so conflict	
Economic (incl. growth & employment)	-	
Social	-	
Cultural	-	

Amend Landscaping and Planting Rule		
	Benefits	Costs
Environmental	Ensures that traffic safety on Outlet Road is maintained by reducing potential points so conflict	
Economic (incl. growth & employment)	-	
Social	-	
Cultural	-	

Amend Building Height Rule		
	Benefits	Costs
Environmental	Ensures that appropriate offset occurs between increased building density, within the that part of AA-C2 that is proposed to change to D1 remains, with building scale	
Economic (incl. growth & employment)	-	
Social	-	
Cultural	-	

Amend Retail Rule		
	Benefits	Costs
Environmental	Reduced travel on the roading network for essential services	
Economic (incl. growth & employment)	Increased retail provides for additional employment for a range of staff	
Social	Enhances opportunity for D1 area to become a focus of the Northlake community, encouraging complementary activities that benefit local residents	
Cultural	-	

Amend Sign Rule		
	Benefits	Costs
Environmental		Increased visual presence of signs in the D1 area
Economic (incl. growth & employment)	Enables business to properly advertise their presence and helps make the Northlake D1 area a viable commercial precinct	
Social	Relevant commercial signage will clearly identify the form and function of this D1 area – and	

	helps it develop as the focal point of the community	
Cultural	-	-

Delete Community Activity Rule		
	Benefits	Costs
Environmental	N/A	N/A
Economic (incl. growth & employment)	Ensures that consent processes and provision of residential housing is not unnecessarily delayed by complicated consent processes	
Social	The Northlake residential community can establish without consent delays	
Cultural	-	-

Table 10: Examining the Appropriateness of the Provisions

In summary, this Request are considered to be the most appropriate method of achieving the objectives of the NSZ.

5.0 Assessment of Effects on the Environment

5.1 Overview

This part of the report provides an assessment of effects on the environment in accordance with Clause 22 (2) of the First Schedule of the Act. This assessment relates to the effects anticipated from the implementation of the proposed plan change.

5.2 Landscape and Urban Design

The landscape and urban design aspects of this plan change request are interrelated, and primarily involve the adjustment of the Activity Area boundaries and to a lesser degree the change to the retail rule.

The landscape assessment has been prepared by Baxter Design Group Limited, and identifies that the key consideration is the expansion of the D1 area.

The other changes to the boundaries of the C1/ B2, B3 areas are considered to be of minor consequence from both a landscape and urban design perspective.

Urban design is the key consideration in expanding the D1, particularly towards Outlet Road into the AA-C2 area.

The report recognises that the operative rules provide NIL with some flexibility on the layout of development within the C2, provided it achieves a maximum density of 4.5 dwellings per hectare (including the 15% float).

This could result in NIL increasing density within the southern part of the C2 area. The plan change area) resulting in a medium density development (10 – 12 dwellings per hectare), whilst still enabling the northern part of the C2 to be developed

The report recognises the change that will occur to the land form as a result of earthworks necessary to create functional residential sections, that will result in activity area boundaries becoming blurred over time.

The report recommends that sensitive edge treatment occurs for land adjoining Outlet Road, including a consistent depth and pattern of planting and fencing. It is also recommended that cladding materials and colour palette maintain a degree of consistency. It recommends that buildings be limited to 2 levels within that C2 strip, to retain a generally consistent appearance of built form.

The retirement village concept for the expanded D1 area is acknowledged as being an appropriate land use within this part of the zone, and likely to positively contribute towards residential and community coherence that results from a mixed environment.

The urban design aspect of increasing the retail footprint and overall retail cap is to ensure that buildings alongside Northlake Drive are designed to address the street as the principal pedestrian place. This might include additional tenancies being supported alongside Northlake Drive. The actual detailed design response to this type of matter will be addressed appropriately at the resource consent stage.

Both the supermarket and the retirement village will be subject to a Restricted Discretionary resource consent for the buildings within the D1 area. The matters over which the Council has restricted its discretion (12.34.2.3 (iv)(a), (f) and (h)) and the associated Assessment Matters (12.34.5.2 (v)(b), (c) and

(d)) – ensure that consideration will be given to all of those building design, appearance and streetscape issues.

5.3 Transport

Carriageway Consulting Limited has been engaged to provide an assessment of the request in respect of the amendments to the Structure Plan to increase the area of AA-D1, and to assess the implications of increasing the amount of retail floor area.

The Carriageway report first assessed the existing zoning of the plan change area, and the traffic impacts that are likely to occur. In that case the report identifies the existing D1 land (relying upon that part of the Outline Development Plan that would result in 105 residential units), and the permitted yield of the C2 and B3 land – that would result in 141 residential units, and generate about 127 vehicle movements (2 way) in the peak hours.

The alteration to the Structure Plan provides an additional 4.2 hectares of AA-D1 land (The C2 + B3 land), which results in a net increase (taking into account the residential yield under the operative C2 and B3 zoning) of 36 residential units. This would result in an additional 32 vehicle movements in the peak hours or an equivalent of 1 additional vehicle movement every 1.9 minutes. Carriageway Consulting describe this effect as being "imperceptible", and on that basis, they were not asked to report on the other less significant changes to the Structure Plan in the AA-C1 and AA-B2/3 areas.

Carriageway were also asked to assess the traffic effects that might occur if a retirement village is developed within that same expanded D1 area, occupying a cumulative area of approximately 9.4 hectares. Comparisons with other similarly sized and located retirement villages confirms a conservative assessment of 12.1 vehicle movements per hectare during peak hours; resulting in around 114 vehicle movements (2 way) in those peak hours.

In summary, the operative zoning would result in 127 vehicle movements per hour, medium density residential over that same area would result in up to 159 vehicle movements per hour, or alternatively a retirement village would generate about 114 vehicle movements per hour. The Carriageway report concludes that "the traffic generated by the proposed plan change is relatively small" and that "there is very little difference in the traffic generation between the proposed rezoned land towards the north of Northlake and that which can already occur as of right…".

The change to the retail provisions include increasing the retail cap to 2,500m^2, and within that increased cap, providing for a grocery store of up to 1,250m^2.

The standard traffic generation for a retail food outlet of this size is 15 vehicle movements (2 way) per 100m2 in the evening peak hour, which in this case equates to 180 vehicle movements (2 way). The assessment relies upon recognised survey data, that supermarkets trips are generally divided on a 33% basis to' primary trips' that are newly generated as a result of the supermarket, 'pass-by trips' where the route of the driver does not change, and 'diverted trips'.

The location of the supermarket within a growing residential area will ensure that most 'trips' are generated from within an existing local catchment of 3,395 residences[1] where this will be the closest grocery store.

The Carriageway report concludes that a 1,250m^2 supermarket will generate an additional 36 vehicle movements on Aubrey Road during the peak hour, at that movements through that Aubrey/ Outlet Road

[1] RCG Limited, Assessment of Economic Effects – Northlake, September 2017, page 34

intersection will be evenly split to the east (Albert Town) and west (Wanaka). This traffic volume represents one vehicle movement every 1.7 minutes which carriageway describe as "imperceptible".

5.4 Retail

RCG Limited have prepared an assessment of the effects of increasing the retail cap to enable a 1,250m2 supermarket, whilst also increasing the retail cap to 2,500m^2.

This report confirms that:

- Growth projections for the Wanaka area have previously underestimated actual growth rates.
- Recent growth projections (2017) indicate that Wanaka will grow from a resident population of 10,910 (2016) to 16,700 (2028) – an increase of over 53%.
- Building consent records indicate there are 350 – 400 new homes in Wanaka per annum
- House prices in Wanaka continue to increase, with an average house price of $800,000 (June 2017)
- Tourism growth is projected to continue.
- Total passenger arrivals through Queenstown airport have grown 81% in the past 5 years
- Wanaka Airport is likely to also expand and be used for domestic flight routes
- Guest nights in Wanaka have grown to 840,000 per annum (521,000 international / 319,000 domestic)
- Tourism spending in Wanaka is at record levels of $313,000,000.00, up 71% from two years ago
- There is currently 20,000m^2 of retail floor space in Wanaka, and a further 10,000m^2 possible at Three Parks, plus 1,000m^2 at Northlake.
- There is one supermarket (New World) and two smaller grocery stores (Four Square and Mediterranean Market)
- Wanaka is currently "seriously undersupplied with retail space", and can support substantial increases in its retail offering"
- The existing New World supermarket trades very strongly and that tourist spending alone is sufficient to support a supermarket of this size
- The 'northern Wanaka' area could support 10,484m2 of retail floor space, including 3.069m^2 food retail floor space, by 2028 if that area is fully developed.
- The proposed 1,250m^2 supermarket and total retail cap of 2,500m^2 will not undermine the Wanaka CBD or Three Parks.

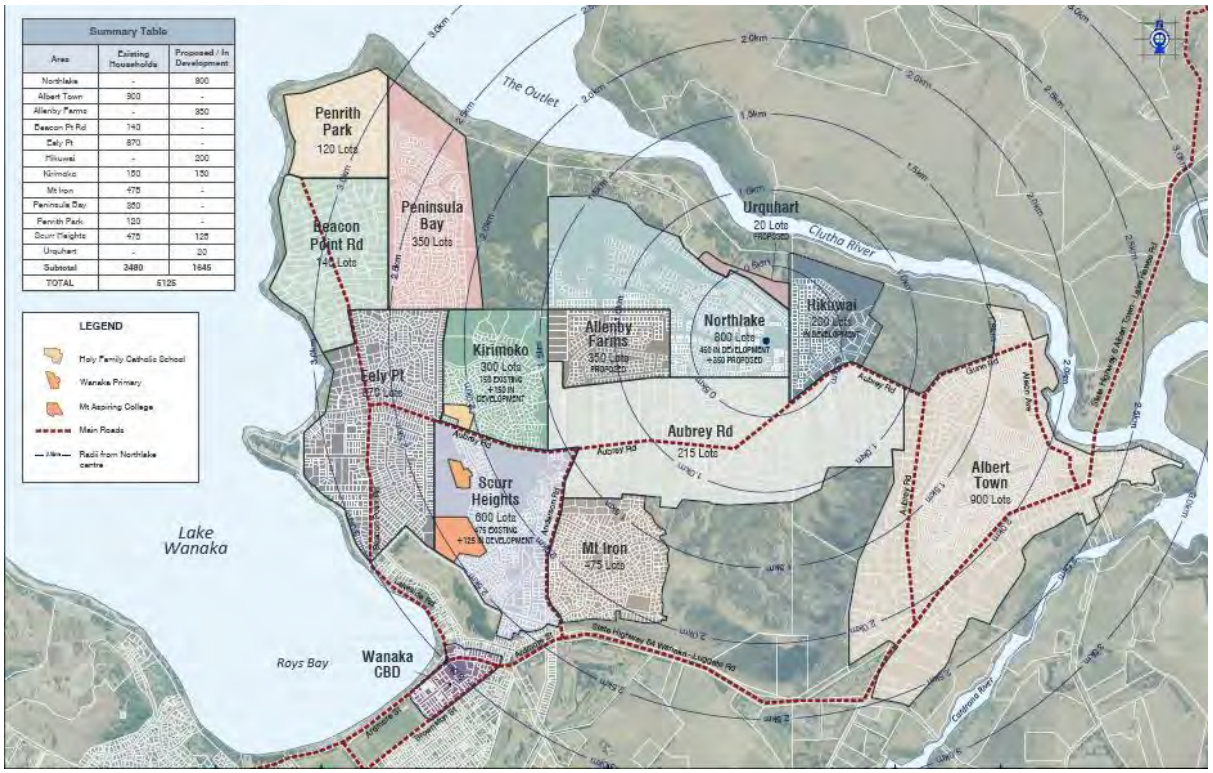


Figure 4: Northern Wanaka Catchment

5.5 Services and Infrastructure

Paterson Pitts Group have undertaken an assessment of the 3-waters infrastructure, and provided confirmation on the adequacy of the telephone and electrical supplies in the vicinity.

5.5.1 Stormwater

The report confirms that stormwater will continue to be collected, treated and disposed via the Low Impact Design that has been constructed to ensure there is no increase from pre-to post development flows leaving the site and to ensure that stormwater quality is maintained prior to ultimate discharge into the Clutha River.

5.5.2 Water Supply

Water demands have been assessed, and consultation undertaken with the Council engineers contracted for modelling water supply requirements within Wanaka. It is acknowledged that under both the density of the operative district plan and the proposed plan change that a water upgrades will be required (and are programmed to be undertaken by Council). As a result the amendment to the Structure Plan boundaries will have no effect upon water supply.

Current modelling indicates that 682 residential lots can be serviced by the current reservoir (located on the western boundary of the zone) after which the 250mm trunk main will need to be linked back to that reservoir. It is estimated that there is at least 5 years capacity before that demands are fully realised and upgrades are required.

Water supply hourly peak flow will increase slightly as a result of the proposed changes to the activity areas. However, it is anticipated with planned upgrades that the site can be appropriately serviced.

5.5.3 Wastewater

PPG confirm that the 300mm main that was recently extend from the intersection of Aubrey and Outlet Roads as far as Northlake Drive will have adequate capacity for the increase in density proposed by the plan change.

Internal pipe reticulation extends west along Northlake Drive (150mm) as far as the intersection with Mt. Linton Avenue. This infrastructure is currently being extended to also service the lots in Stages 4 – 6.

The land north of Mt Creighton crescent (in the vicinity of the C2) is at a lower elevation and a pump station of low pressure reticulation will be required to convey wastewater up to the existing network.

5.6 Summary

The reports prepared in relation to specific aspects of the proposed plan change have confirmed that:

a) The alteration to the Structure Plan boundaries will not result in any adverse effects upon the landscape qualities of the area;

b) The alteration to the Structure Plan boundaries will result in a slightly different character and urban form. However, that change is appropriate and particular methods have been introduced that ensure consistency with the relevant objectives and policies of the zone;

c) The existing infrastructure network and planned upgrades have capacity to appropriately service the increased density;

d) There is currently a significant under-supply of retail floorspace in Wanaka built and projected; and that the alteration of the retail rule to enable a supermarket, and to increase the overall allowable retail gross floor area, will not result in any adverse effect on Wanaka CBD and Three Parks.

6.0 Statutory Framework

6.1 Resource Management Act 1991

This private plan change request has been made under Clause 21, Part 2 of the 1st Schedule of the Resource Management Act 1991.

The request has been prepared in accordance with Clause 22 and includes an evaluation report prepared in accordance with section 32 and a description of the environmental effects, taking into account clauses 6 and 7 of Schedule 4.

6.2 National Policy Statements and Standards

The following National Policy Statements (NPS) and National Environmental Standards (NES) have been examined:

- National Policy Statement on Electricity Transmission 2008
- Coastal Policy Statement 2010
- National Policy Statement on Renewable Electricity Generation 2011
- National Policy Statement on Freshwater Management 2014
- National Policy Statement on Urban Development Capacity 2016

National policy statements guide subsequent decision-making under the Resource Management Act at the national, regional and district levels and can therefore significantly affect resource management practices in New Zealand.

Regional policy statements, regional plans and district plans are all required to give effect to all national policy statements. The phrase "give effect to" means "implement". It is a strong directive that creates a firm obligation on the part of those subject to it.

The national policy statement is about recognising the national significance of:

a) urban environments and the need to enable such environments to develop and change; and
b) providing sufficient development capacity to meet the needs of people and communities and future generations in urban environments.

The National Policy Statement on Urban Development Capacity is relevant to this plan change request. It contains objectives and policies that local authorities must give effect to in their resource management decisions that provide direction on:

- the outcomes that urban planning decisions should achieve
- the evidence underpinning those decisions
- responsive planning approaches
- coordination between local authorities and providers of infrastructure.

Within these four, the NPS-UDC targets the more challenging requirements for urban areas experiencing the most significant growth. Of particular relevance to this plan change are the first group of Objectives that occur under the heading 'Outcomes for planning decisions':

> *OA1: Effective and efficient urban environments that enable people and communities and future generations to provide for their social, economic, cultural and environmental wellbeing.*

OA2: Urban environments that have sufficient opportunities for the development of housing and business land to meet demand, and which provide choices that will meet the needs of people and communities and future generations for a range of dwelling types and locations, working environments and places to locate businesses.

OA3: Urban environments that, over time, develop and change in response to the changing needs of people and communities and future generations.

The associated policies (PA1 to PA4) apply to "any urban environment that is expected to experience growth". These policies require that:

PA1: Local authorities shall ensure that at any one time there is sufficient housing and business land development capacity….that must be feasible, zoned and serviced with development infrastructure in the short, medium and long term.

PA2: Local authorities shall satisfy themselves that other infrastructure required to support urban development are likely to be available.

PA3: When making planning decisions that affect the way and the rate at which development capacity is provided, decision-makers shall provide for the social, economic, cultural and environmental wellbeing of people and communities and future generations, whilst having particular regard to:

a) Providing for choices that will meet the needs of people and communities and future generations for a range of dwelling types and locations, working environments and places to locate businesses;
b) Promoting the efficient use of urban land and development infrastructure and other infrastructure; and
c) Limiting as much as possible adverse impacts on the competitive operation of land and development markets.

PA4: When considering the effects of urban development, decision-makers shall take into account:

a) The benefits that urban development will provide with respect to the ability for people and communities and future generations to provide for their social, economic, cultural and environmental wellbeing; and
b) The benefits and costs of urban development at a national, inter-regional, regional and district scale, as well as the local effects.

In addition, the Wanaka area is a "high growth urban area" as it will be likely to experience significantly more than the 10% growth threshold between 2013 and 2023 (more likely 50%). As a result, Policies PB1 to PB7 also apply to the Council. This includes research, monitoring and publication of demand and capacity studies.

The 'Responsive Planning' policies (PC1 to PC11) include a requirement to ensure that the 'feasible development capacity' requirements of PA1 also include an 'additional margin of feasible development capacity over and above projected demands of at least '20% in the short-medium term and 15% in the long term.

This proposed plan change acknowledges that there is demand for additional medium density zoned land (including provision for a retirement village), and that there is a significant undersupply of retail zoned land in the Wanaka urban area. The Request is consistent with these policy expectations

Whilst the NPS places the responsibility for its implementation on local authorities, it is relevant to note that this plan change request assists the Council to ensure that the wellbeing of future generations is appropriately provided for. Supplementary reports prepared for this plan change confirm that there are

no adverse impacts upon landscape, urban design, or the amenity of the existing zoned retail areas (Wanaka town centre, Three Parks or other areas), that there is adequate provision of infrastructure,

The other Environmental Standards and National Policy Statements include:

- National Environmental Standard for Air Quality 2004
- National Environmental Standard for Sources of Human Drinking Water 2008
- National Environmental Standard for Telecommunications Facilities 2008
- National Environmental Standard for Electricity Transmission 2010
- National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2012

None of the National Environmental Standards are relevant to this plan change request.

6.3 Otago Regional Policy Statement - Operative

The purpose of a Regional Policy Statement is to promote the sustainable management of natural and physical resources. The Otago Regional Policy Statement ("RPS") became operative on 1 October 1998, and establishes the framework for planning documents and plans such as Air, Waste, Water and Coast.

The RMA Section 75(3)(c) states that a District Plan must give effect to a Regional Policy Statement. Accordingly, it is important to consider the relevant provisions of the Regional Policy Statement to ensure they are being given effect to. The relevant provisions are from Chapter 9 – Built Environment.

> ***Objective 9.4.1***
> *To promote the sustainable management of Otago's built environment to:*
> *(a) Meet the present and reasonably foreseeable needs of Otago's people and communities; and*
> *(b) Provide for amenity values; and*
> *(c) Conserve and enhance environmental and landscape quality; and*
> *(d) Recognise and protect heritage values.*

The provision of additional land for either medium density housing or for the development of a retirement village is consistent with the Objective, in meeting the reasonably foreseeable needs of the Otago community.

The amenity values of the NSZ area will be enhanced by the opportunity to provide a grocery store within the zone minimising vehicle trips to the town centre and other localities

Attention to urban design principles and the provision of recreational areas and trails are provided for by the plan change.

> ***Policy 9.5.2***
> *To promote and encourage the sustainable management of Otago's transport network through:*
> *(a) Promoting the use of fuel efficient modes of transport…*
> *(b) Encouraging a reduction in the use of fuels which produce emissions harmful to the environment; and*

> ***Policy 9.5.3***
> *To promote and encourage the sustainable management of Otago's transport network through:*
> *(a) Promoting the use of fuel efficient modes of transport; and*
> *(b) Encouraging a reduction in the use of fuels which produce emissions harmful to the environment; and*
> *(c) Promoting a safer transport system; and*

(d) Promoting the protection of transport infrastructure from the adverse effects of land use activities and natural hazards.

Policy 12.5.3
To improved energy efficiency within Otago through:
(d) Encouraging energy efficient transport modes in Otago

The plan change request is consistent with these policies, in particular by altering the Structure Plan to more readily facilitate the development of a retirement village in this zone. The complementary development of a grocery store also contributes towards a more self-sustaining community that is less reliant upon traffic movements across already stressed arterial routes across town, and to and from the Wanaka town centre.

Policy 9.5.4
To minimise the adverse effects of urban development and settlement, including structures, on Otago's environment through avoiding, remedying or mitigating:
(a) Discharges of contaminants to Otago's air, water or land; and
(b) The creation of noise, vibration and dust; and
(c) Visual intrusion and reduction in landscape qualities; and
(d) Significant irreversible effects on:
- *(i) Otago community values; or*
- *(ii) The creation of noise, vibration and dust; and*
- *(iii) The natural character of water bodies and the coastal environment; or*
- *(iv) Habitats of indigenous fauna; or*
- *(v) Heritage values; or*
- *(vi) Amenity values' or*
- *(vii) Intrinsic values of ecosystems; or*
- *(viii) Salmon or trout habitat.*

Existing reticulated network infrastructure has capacity for the changes proposed by this plan change.

Overall, the plan change request is consistent with the operative Regional Policy Statement.

6.4 Otago Regional Policy Statement - Proposed

The Regional Council released decisions on the Proposed RPS on 1 October 2016. The appeal period closed on 9 December 2016, and 26 appeals were lodged.

Of relevant to this plan change are the objectives and policies relating to the built environment, which occur at 3.7 and 3.8 of the notified RPS:

Objective 3.7
Urban areas are well designed, sustainable and reflect local character.

Policy 3.7.1
Encourage the use of good urban design principles in subdivision and development in urban areas, as detailed in Schedule 6, to:
f) Create areas where people can live, work and play, including by:
- *i. Enabling a diverse range of housing, commercial, industrial and service activities; and*
- *ii. Enabling a diverse range of social and cultural opportunities.*

Objective 3.8
Urban growth is well designed and integrates effectively with adjoining urban and rural environments.

Policy 3.8.1

Manage urban growth and creation of new urban land in a strategic and co-ordinated way, by:

a) Ensuring there is sufficient residential, commercial and industrial land capacity, to cater for demand for such land, projected over at least the next 10 years; and

b) Co-ordinating urban growth and extension of urban areas with relevant infrastructure development programmes, to:
   i. Provide infrastructure in an efficient and effective way; and
   ii. Avoid additional costs that arise from unplanned infrastructure expansion; and

c) Identifying future growth areas that:
   i. Minimise adverse effects on rural productivity, including loss of highly valued soils or creating competing urban demand for water and other resources; and
   ii. Maintain or enhance significant biodiversity, landscape or natural character values; and
   iii. Maintain important cultural or heritage values; and
   iv. Avoid land with significant risk from natural hazards; and

e) Ensuring efficient use of land; and

The Proposed RPS was altered as a result of decision on submissions, and these quoted objectives and policies remain subject to further potential change as a result of appeals.

The Plan change request is not inconsistent with any of the above-mentioned objectives and policies, because that plan also seeks to ensure that there is urban consolidation and promotes the efficient use of existing urban infrastructure.

However, for the purpose of this evaluation minimal weight should be applied to the Proposed RPS.

6.5 Otago Regional Land Transport Strategy

The Otago Regional Land Transport Strategy ("RLTS") 2011-2041 describes a series of key result areas for achieving the goal of "*a safe transport system that provides connections between communities, leading to regional prosperity, the creation of wealth and employment, social inclusion and the minimisation of adverse environmental effects a sustainable quality of life for current and future generations*".

The transport network has been assessed, and the plan change is consistent with the Regional Land Transport Strategy.

6.6 Regional Plans

6.6.1 Regional Plan: Air (2009)

The Air Plan contains objectives, policies and rules that allow the Regional Council to independently manage the air quality of settlements throughout the region. Part of the plan change site is within Air Zone 2 (Wanaka).

6.6.2 Regional Plan: Waste (2007)

The purpose of the Waste Plan is to provide an integrated approach to waste issues. The Waste Plan is also relevant in respect of the disposal of commercial and domestic waste and collection of recycling. Waste and recycling in Wanaka is collected by Queenstown Lakes District Council on a user pays system. The zone is covered by this managed waste collection.

6.6.3 Regional Plan: Water (2004)

The utility services and infrastructure report concludes that the land is not subject to any significant constraints in relation to water supply reticulation, wastewater reticulation, stormwater control.

The plan change is consistent with all three of the Regional Plans.

6.7 Kai Tahu ki Otago Natural Resource Management Plan (2005)

The Act requires that when preparing a change to a District Plan a local authority must take into account any relevant planning document recognised by an iwi authority, to the extent that its content has a bearing on resource management issues of the district.

The Kai Tahu ki Otago Natural Resource Management Plan ("NRMP") was adopted in 2005 and contains a series of objectives and policies which are relevant to this Plan Change. The Clutha/ Mata-au catchments include the territorial boundaries of the Queenstown-Lakes District.

There are no objectives or policies in the NRMP that are relevant to the resource management issues raised by this plan change request.

6.8 Queenstown Lakes District Plan - Operative (2002) - ODP

The ODP was made operative in 2002, and subsequently amended by Plan Change 45 in December 2015. It contains both district-wide (Chapter 4) and zone-specific (Chapter 12-33) objectives and policies, the relevant matters of which, are reproduced below and an assessment provided.

6.8.1 Chapter 4 – District-Wide

Objective 1 - Natural Environment and Landscape Values
Growth and development consistent with the maintenance of the quality of the natural environment and landscape values.

Policies

1.1 To ensure new growth occurs in a form which protects the visual amenity, avoids urbanisation of land which is of outstanding landscape quality, ecologically significant, or which does not detract from the values of margins of rivers and lakes.

The assessment prepared by Baxter Design Group Limited (Attachment B) confirms that the land affected by the proposed Plan Change does not contain landscape values that require protection. The NSZ already identifies those areas of ecological significance and provides for their protection (TPA 1 and TPA 2). In addition, the NSZ also provides for the protection of landscape values by inclusion of AA E1 which classifies those more elevated slopes in the northern part of the zone. Similarly, the NSZ also provides for the protection of the values of margins of the Clutha River by classifying those areas as the 'Tree Protection and Building Restriction Area'. The Request is therefore consistent with these matters.

Objective 2 - Existing Urban Areas and Communities
Urban growth which has regard for the built character and amenity values of the existing urban areas and enables people and communities to provide for their social, cultural and economic well-being.

Policies:

2.1 To ensure new growth and development in existing urban areas takes place in a manner, form and location which protects or enhances the built character and amenity of the existing residential areas and small townships.

2.3 To protect the living environments of existing low-density residential areas by limiting higher density development opportunities within these areas.

The Request provides for intensification of part of the AA B3 and C2 (and other minor Activity Area boundary adjustments).

These changes are all part of a planned residential community, that include an integrated street and (off-road) pedestrian network.

The requestor has obtained an Outline Development Plan resource consent (RM160152) that demonstrates the future built character of this environment.

In regard to Policy 2.3, NIL is the owner of the land that immediately adjoins the plan change area. The proposed medium density outcomes of AA D1 are contained within and surrounded by NIL owned land.

The proposed changes will maintain that same general character and anticipated residential amenity.

Objective 3 - Residential Growth
Provision for residential growth sufficient to meet the District's needs.

Policies

3.1 To enable urban consolidation to occur where appropriate.

3.2 To encourage new urban development, particularly residential and commercial development, in a form, character and scale which provides for higher density living environments and is imaginative in terms of urban design and provides for an integration of different activities, e.g. residential, schools, shopping.

3.3 To provide for high density residential development in appropriate areas.

3.4 To provide for lower density residential development in appropriate areas and to ensure that controls generally maintain and enhance existing residential character in those areas.

The Request provides for urban consolidation to occur, and that may also enable a retirement village to be established (under a separate resource consent). Policy 3.2 encourages integration of different complementary activities to occur that enable residential communities to develop.

The change to the Activity Area boundaries and the provision of r a supermarket within the D1 area are both consistent with this objective and policies.

Objective 4 - Business Activity and Growth
A pattern of land use which promotes a close relationship and good access between living, working and leisure environments.

Policies:

4.1 To promote town centres, existing and proposed, as the principal foci for commercial, visitor and cultural activities.

4.2 To promote and enhance a network of compact commercial centres which are easily accessible to, and meet the regular needs of, the surrounding residential environments.

Wanaka town centre is the principal focus for commercial, visitor and cultural activities in the Upper Clutha, and the Plan Change request does not impact upon that hierarchy. The RCG report confirms that the provision for additional retail floor space in the NSZ will not result in any adverse effects upon the vibrancy of either the Wanaka or Three Parks commercial areas.

Wanaka contains two commercial areas; the existing town centre and the future development at Three Parks. These areas contain the existing and future supermarkets for the Upper Clutha that provide, amongst other things, for the regular needs of the community. Neither area is 'easily accessible' from parts of the North Wanaka neighbourhoods, and require independent vehicle trips.

The Request is consistent with Objective 4 and both of Policies 4.1 and 4.2.

6.8.2 Chapter 15 – Northlake Special Zone

The operative Northlake Special Zone is based upon six objectives and associated policies. The relevant matters are reproduced and assessed below:

Objective 1 – Residential Development
A range of medium to low density and larger lot residential development in close proximity to the wider Wanaka amenities.

Policies

1.1 To establish a mix of residential densities that will provide a residential environment appealing to a range of people.

1.2 To enable medium density living within the less sensitive parts of the zone in order to give Northlake a sense of place and to support a neighbourhood commercial and retail precinct.

1.7 To provide for small scale neighbourhood retail activities to serve the needs of the local community within Activity Area D1 and to avoid visitor accommodation, commercial, retail and community activities and retirement villages within Activity Areas other than within Activity Area D1.

1.8 To provide for community activities, including educational facilities, to serve the needs of the Northlake community and to be available for use by the wider Wanaka community.

The Request remains consistent with this objective and associated policies, by continuing to provide that range of housing densities.

Policy 1.7 refers to the provision of "small scale neighbourhood retail activities to serve the needs of the local community". The RCG report confirms that the 'North Wanaka' community will be the primary catchment. The comparatively small size of the supermarket will provide a much smaller retail offering that will be focused upon the needs and convenience of the local neighbourhood.

Policy 1.8 provides the framework for the provision of 'community facilities'. These facilities have now either been provided or like facilities consented and construction of those facilities about to commence.

> ***Objective 2 – Urban Design***
> *Development demonstrates best practice in urban design and results in a range of high quality residential environments.*
>
> ***Policies***
> *2.5 To ensure that development recognises and relates to the wider Wanaka character and is a logical extension of the urban form of Wanaka.*
>
> *2.6 To enable visitor accommodation, commercial, retail and community activities and retirement villages within Activity Area D1 including limited areas of small scale neighbourhood retail to service some daily needs of the local community, while maintaining compatibility with residential amenity and avoiding retail development of a scale that would undermine the Wanaka Town Centre and the commercial core of the Three Parks Special Zone.*

Objective 2 is concerned with achieving high quality urban design outcomes., which includes providing for a range of complementary activities and necessary facilities that ensure that the Northlake neighbourhood can develop as an integrated community; with convenience retail and supporting commercial, community and retirement facilities.

The Request remains consistent with these matters.

> ***Objective 4 – Landscape and Ecology***
> *Development that takes into account the landscape, visual amenity, and conservation values of the zone.*
>
> ***Policies***
> *4.1 To identify areas where buildings are inappropriate, including ridgelines, hilltops and other visually prominent landforms, and to avoid buildings within those areas*

The Landscape and Ecology objective is identified because a small area of AA-E1 is proposed to change to AA-D1. The Baxter design report recognises the purpose of the E1 area, but concludes that this particular part of the E1 (1,323m^2) at the southern-most end of the Activity Area, and that including that area within d1 will not result in any adverse landscape effects.

6.9 Queenstown Lakes District Plan - Proposed (2015) - PDP

The first stage of the PDP was notified in October 2015, and hearings on that first stage are almost completed. Decisions on submissions are anticipated in early 2018.

The NSZ was not included in the notified PDP.

The relevant parts of the PDP are those district-wide matters, which have been reproduced and assessed below.

Objective 3.2.1.1
Recognise, develop and sustain the Queenstown and Wanaka central business areas as the hubs of New Zealand's premier alpine resorts and the District's economy.

Policies

3.2.1.1.1. Provide a planning framework for the Queenstown and Wanaka central business areas that enables quality development and enhancement of the centres as the key commercial hubs of the District, building on their existing functions and strengths.

3.2.1.1.2 Avoid commercial rezoning that could fundamentally undermine the role of the Queenstown and Wanaka central business areas as the primary focus for the District's economic activity.

Objective 3.2.1.2
Recognise, develop and sustain the key local service and employment functions served by commercial centres and industrial areas outside of the Queenstown and Wanaka central business areas in the District.

Policies

3.2.1.2.1 Avoid commercial rezoning that would fundamentally undermine the key local service and employment function role that the larger urban centres outside of the Queenstown and Wanaka central business areas fulfil.

3.2.1.2.2 Reinforce and support the role that township commercial precincts and local shopping centres fulfil in serving local needs.

Objective 4.2.1
Urban development is coordinated with infrastructure and services and is undertaken in a manner that protects the environment, rural amenity and outstanding natural landscapes and features.

Policies

4.2.1.3 Encourage a higher density of residential development in locations that have convenient access to public transport routes, cycleways or are in close proximity to community and education facilities.

The PDP policies maintain and strengthen the primacy of the Wanaka town centre

Essentially, these two objectives outline a hierarchy for centres in the Queenstown- Lakes District, with the Queenstown and Wanaka central business areas at the top, followed by other large urban centres. The objective and policy framework support the top-tier and second-tier centres. Lower in the hierarchy are "township commercial precincts and local shopping centres".

7.0 THE PLAN CHANGE

7.1 The Amended Provisions

This plan change proposes amendments to Chapters 12.34 The Northlake Special Zone), chapter 15 (subdivision) and Chapter 18 (Signs).

7.1.1 Amendment to Part 12 – Rule 12.34.2.6 (i) – page 12-365

i. Panelbeating, spray painting, motor vehicle repair or dismantling, fibreglassing, sheet metal work, bottle or scrap storage, motorbody building, fish or meat processing (except if ancillary to any retail activity or restaurant*), or any activity requiring an Offensive Trade Licence under the Health Act 1956.*

7.1.2 Amendment to Part 12 – Rule 12.34.4.1 (ii) – page 12-366

ii Setbacks from Roads

(a) The minimum setback from road boundaries of any building shall be 4.5m except within activity Area D1;

(b) The minimum setback from road boundaries of any building within Activity Area D1 shall be 3m, except for that part of Activity Area D1 that adjoins Outlet Road, north of Mt. Burke Street, where the minimum setback from Outlet Road shall be 7m.

7.1.3 Amendment to Part 12 – Rule 12.34.4.1 (viii) – page 12-368

viii Access

(a) Each residential unit shall have legal access to a formed road;

(b) Within Activity Area D1 no residential unit shall have direct access to Outlet Road.

7.1.4 Amendment to Part 12 – Rule 12.34.4.1 (x) – page 12-369

x Landscaping and Planting

(d) On residential sites adjoining Outlet Road, tree planting within a 3.5 m setback from that road shall achieve 100% coverage.

Note: For the purposes of rule (d) above:

(i) 'tree planting' shall consist of species that will be higher than 1.5 at maturity spaced at a maximum of 5m between centres of trees.

(ii) planting shall be completed within 12 months of Code of Compliance certification of a building on the site in accordance with the Building Act 2004.

(iii) this rule shall not apply to Activity Area A or the land referred to in (e) below.

(vi) This rule shall not apply to Activity Area D1 to the west of Outlet Road where roadside landscaping within 3.5m of Outlet Road shall consist of:

1. *Post and (2) rail timber fence located on the property boundary*
2. *Grisilinea hedge located immediately behind the post and rail fence, maintained to minimum height of 1.5m.*

7.1.5 Amendment to Part 12 – Rule 12.34.4.2 (iv) – page 12-372

iv Building Height

Ground slope in relation to building height shall be determined by measurement over the extremities of each building elevation.

(a) Flat sites

Where all elevations indicate a ground slope of less than 6 degrees (approximately 1:9.5), then the maximum height for buildings shall be:

- 8.0m for residential activities within Activity Areas A, B1 – B5, and C2 – C4;

- 5.5m in Activity Area C1;

- 10.0m for activities within Activity Area D1 (provided that buildings within 40m of Outlet Road north of Mt. Burke Street shall be no more than 2 levels),

and in addition no part of any building shall protrude through a recession line inclined towards the site at an angle of 40° and commencing at 2.5m above ground level at any given point on the site boundary: except:

(i) Gable, hip, dormer and other similar projections may encroach beyond the recession lines provided they are contained within a calculated area(s) no greater than 6m² with the apex no higher than a point 1m below the maximum height for the zone and the base of the area(s) at the level of recession line protrusion.

(ii) The recession line shall not apply to buildings that share a common wall on an internal boundary and shall not apply to Activity Area D1.

7.1.6 Amendment to Part 12 - Rule 12.23.4.2 (viii) – page 12-373

viii. Retail

(a) No retail activity shall occur within the Northlake Special Zone except in Activity Area D1.

(b) No retail activity shall have a gross floor area exceeding 200m², except for one activity with a maximum gross floor area of 1,250m².

(c) The total amount of retail floor area within the Northlake Special Zone shall not exceed ~~1000m²~~ 2,500m².

7.1.7 Amended Part 12 Northlake Structure Plan

A full copy of the amended Structure Plan is included as Attachment F to this Request.

7.1.8 Deletion of Part 15 - Rule 15.2.16.3 – pages 15-56 and 15-57

~~*15.2.16.3 Zone Subdivision Standard – Northlake Special Zone - Community Facilities*~~

~~*(i) This rule applies to subdivision of land situated north of Aubrey Road, Wanaka, which is zoned Northlake Special Zone ("Northlake") (excluding Activity Area A) as shown on Planning Maps 18, 19 and 20 in addition to any other applicable subdivision rules.*~~

~~*(ii) There shall be no restriction under this rule on the first stage(s) of subdivision which create a total of up to 50 individual residential lots within Northlake (excluding Activity Area A). This rule only applies to any subsequent subdivision that creates a total of more than 50 residential lots within Northlake.*~~

~~*(iii) No resource consent shall be granted for any subdivision that will result in the cumulative total creation of more than 50 residential lots within Northlake unless the community facilities detailed in subclause (iv) below have been constructed and are operational and available to the public, or any such resource consent includes a condition requiring that the community facilities detailed in subclause (iv) below must be completed, operational and available to the public prior to the issuing of any s224c certificate in respect of such subdivision (excluding Activity Area A).*~~

~~*(iv) For the purposes of this rule:*~~

~~*(a) Community facilities' means an indoor 20m – 25m lap pool, a fitness/gym facility, a children's play area, and at least one tennis court.*~~

~~*(b) Operational' includes operating on a commercial basis requiring payment of commercial user charges as determined by the commercial operator.*~~

~~*(c) Available to the public' means open and available for use by any member of the public willing to pay the relevant user charges for such facilities (excluding the play area which is likely to be free).*~~

~~*(d) The Council shall impose a condition on any resource consent enabling the construction and operation of the community facilities requiring them to be available to the public as detailed in this rule.*~~

7.1.9 Amendment to Part 18 - Activity Table 1 (Commercial Areas) and Activity Table 2 (Residential Areas) – pages 18-4 to 18-6

Activity Table 1 (Commercial Areas):	*Corner Shopping Centre Zone <u>and Northlake Special Zone – Activity Area D1</u>*
Activity Table 2 (Residential Areas):	*Quail Rise, Meadow Park, Northlake <u>(except Activity Area D1)</u> & Shotover Country Special Zones*

COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **781044**
Land Registration District **Otago**
Date Issued 27 July 2017

Prior References
290932

Estate	Fee Simple
Area	104.6499 hectares more or less
Legal Description	Lot 90, 2000 Deposited Plan 510104 and Lot 66 Deposited Plan 371470

Proprietors
Northlake Investments Limited

Interests

Subject to Section 59 Land Act 1948

Land Covenant in Transfer 7034398.3 - 19.9.2006 at 9:00 am (Affects Lot 66 DP 371470)

9705858.3 Mortgage to Bank of New Zealand - 9.5.2014 at 1:16 pm

10234636.5 Variation of Mortgage 9705858.3 - 30.10.2015 at 3:49 pm

Subject to Section 241(2) Resource Management Act 1991 (affects DP 510104)

Appurtenant to Lot 90 DP 510104 is a right to drain sewage and water created by Easement Instrument 10760313.4 - 27.7.2017 at 4:50 pm

The easements created by Easement Instrument 10760313.4 are subject to Section 243 (a) Resource Management Act 1991

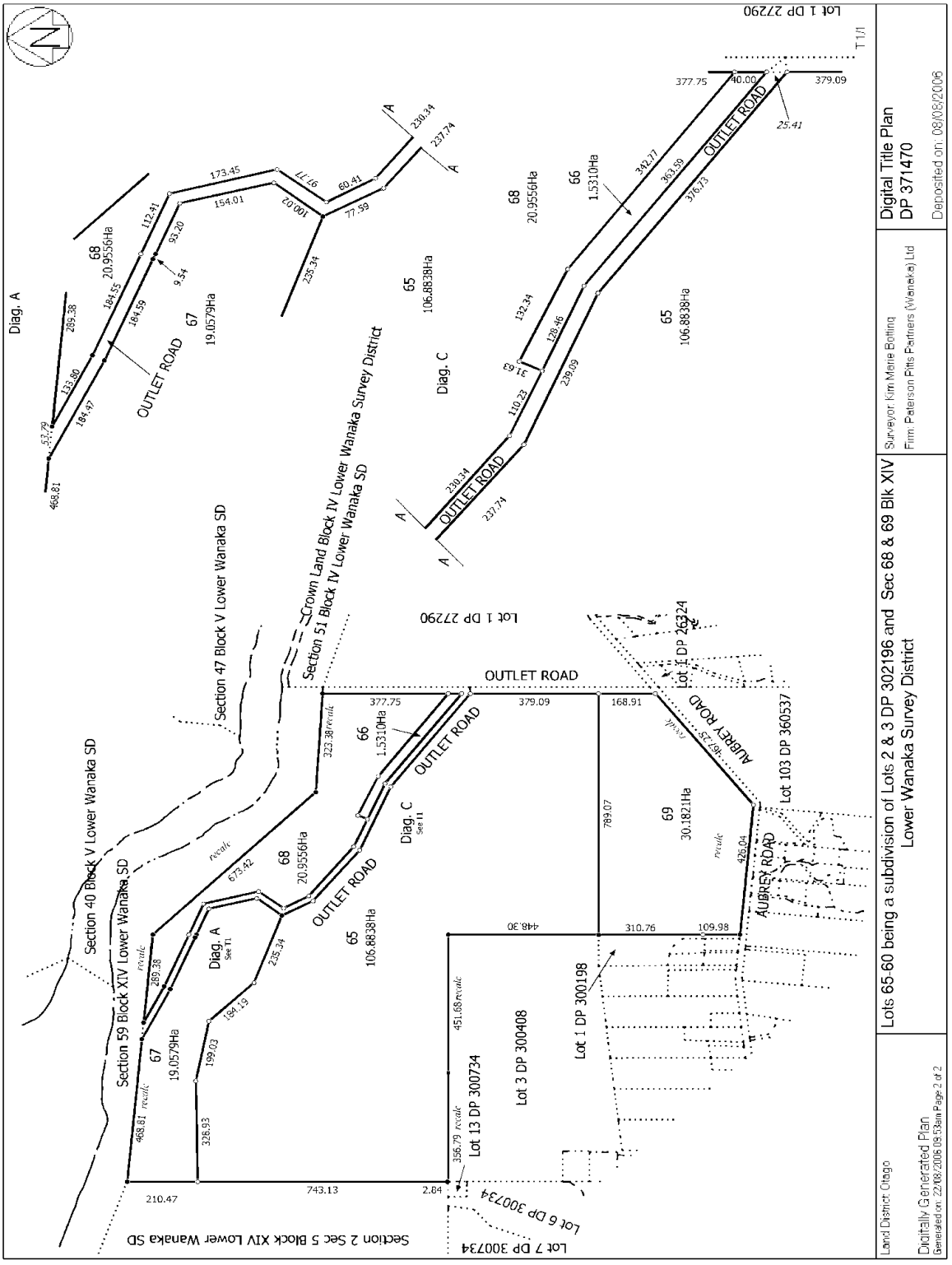
10760313.9 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 27.7.2017 at 4:50 pm (Affects Lot 90 DP 510104)

Land Covenant in Easement Instrument 10760313.10 - 27.7.2017 at 4:50 pm

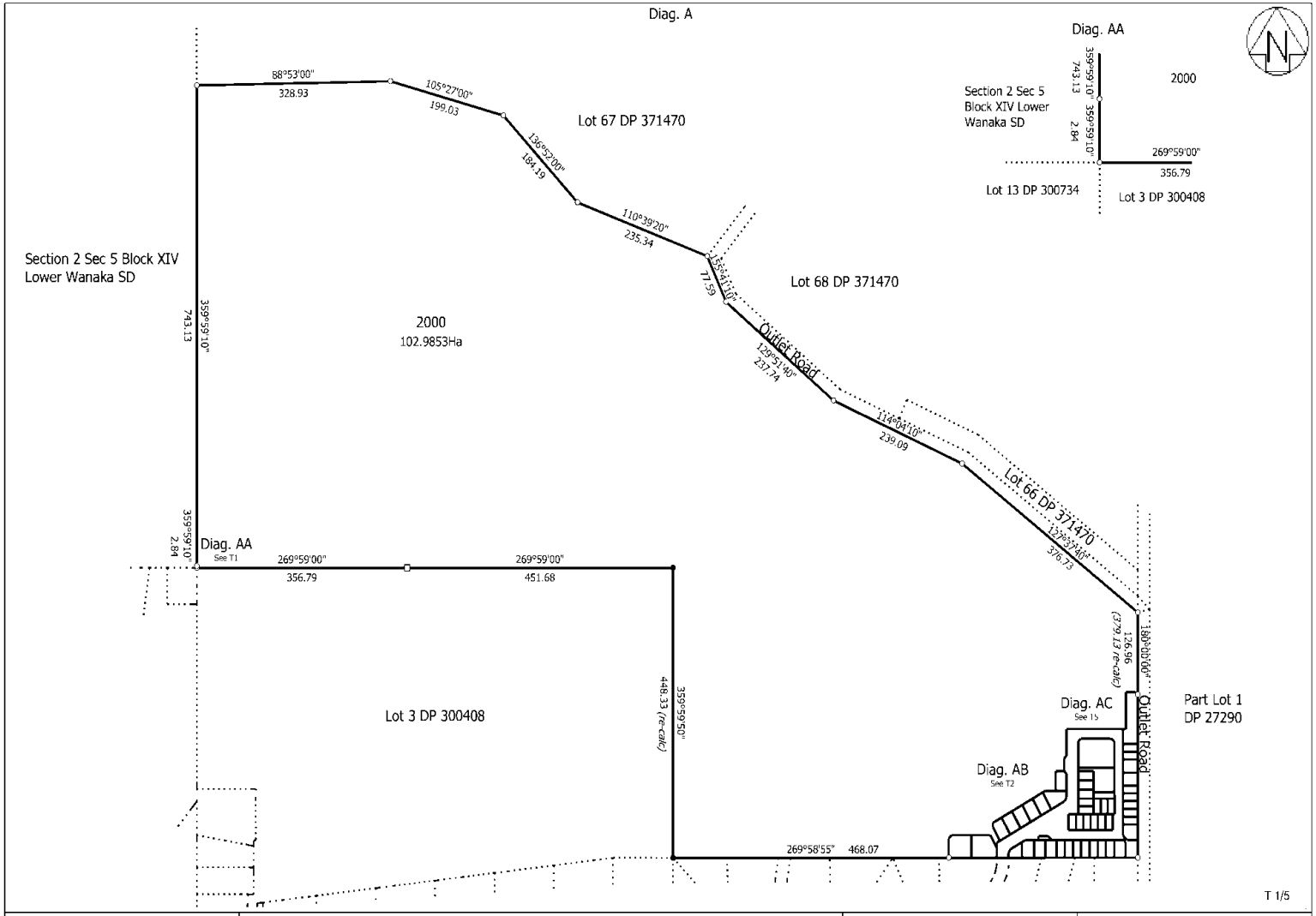
10874847.1 Variation of the conditions of the easement specified in Easement Instrument 10760313.10 - 14.8.2017 at 11:43 am

10878988.1 Variation of the conditions of the easement specified in Easement Instrument 10760313.10 - 18.8.2017 at 10:25 am

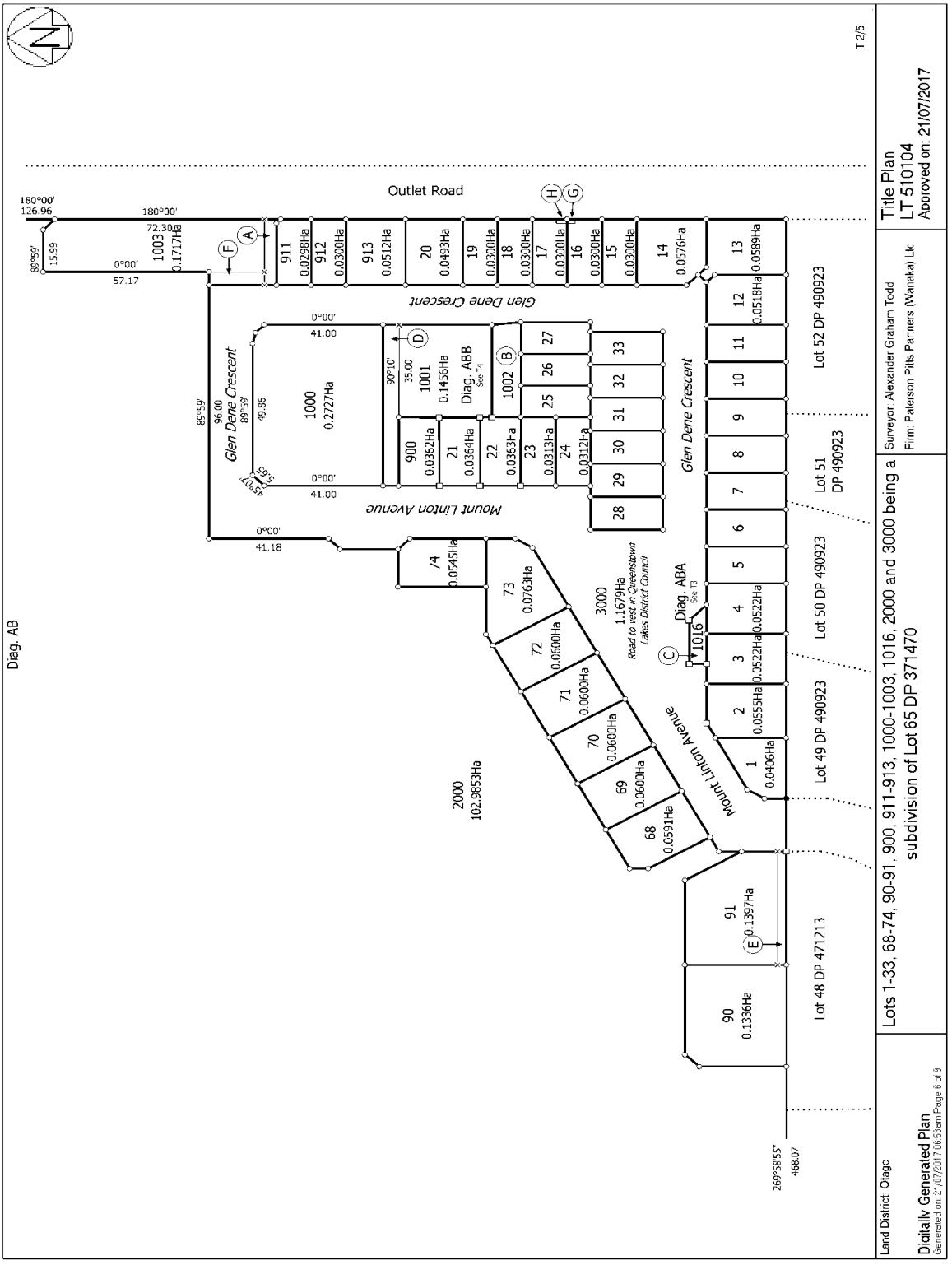
Identifier **781044**



Notified Application & Submissions & Further Submissions 59



Land District: Otago Digitally Generated Plan Generated on: 21/07/2017 06:53am Page 5 of 9	Lots 1-33, 68-74, 90-91, 900, 911-913, 1000-1003, 1016, 2000 and 3000 being a subdivision of Lot 65 DP 371470	Surveyor: Alexander Graham Todd Firm: Paterson Pitts Partners (Wanaka) Ltd	Title Plan LT 510104 Approved on: 21/07/2017



B

Northlake Investments Ltd
Private Plan Change Request

Baxter Design Group Ltd

Landscape and Urban Design Assessment

October 2017

CONTENTS

1.0 BACKGROUND

1.1 Since 2011 Baxter Design Group have worked closely with Northlake Investments Ltd (NIL) and their consultant team, providing master-planning and landscape architecture input to the project as it has developed and evolved.

1.2 The land subject to this report sits within the Northlake Special Zone (NSZ), and is located within the eastern portion of existing Activity Area B3, E1 and part of Activity Area C2 adjoining the north-western arm of Outlet Road.

1.4 This report addresses specifically the landscape and urban design effects arising from amending the Structure Plan within a portion of the existing NZS. The Plan Change Request seeks to amend the existing Activity Areas (referred to as AA's in this report from hereon) D1, B3, E1 and C2 from the original Structure Plan. Other smaller amendments include adjusting the boundaries between Activity Areas B2/ B3 and C1, and also between B2 and E1. This will result in an increase in size of AA-D1 from 18.1 ha to 22.3 ha, a reduction in B3 by 2.4512 ha, a reduction in size of the AA-C2 on the south side of Outlet Road from 5.5 ha to 3.08 ha, and a reduction of AA-E1 by 0.1323 ha.

1.5 Since the NSZ was confirmed, the development has progressed apace with a significant portion of the NIL land consented and developed (or is in development). Development has occurred in AA's D1, B4 and part of C2 and has to date included the establishment of roading, reserve development, and residential and commercial lots. Additionally, Outlet Road and its margins has been upgraded.

1.6 The NSZ provides for residential development across the Activity Areas B, C and D at a range of densities (4.5 to 15 dwellings per hectare).

1.7 Works are also consented with construction of buildings imminent in the central village area in AA-D1, developing commercial and community facilities including a medical centre, a restaurant / bar complex and childcare centre, with associated playground, tennis court, car parking and landscaping. It is understood that other commercial facilities are being considered. These are located directly west of the principal entry to the development from Outlet Road accessing Northlake Drive.

2.0 PLAN CHANGE LANDFORM - DESCRIPTION

2.1 As described above, considerable development has been undertaken within the Northlake Special Zone (NSZ) land over the last 3 years and development continues. Substantially, that development has occurred in AA's B4 and D1, and part of C2. To date, that consented development will result in construction of over 250 residential lots. Outlet Road has been upgraded to a sealed road, extending from the intersection of Outlet Road with Aubrey Road, north and around to the intersection with Mt. Burke Street from the Northlake subdivision.

2.2 The resultant change to the landscape character, arising from residential development, was anticipated in the NSZ and has substantially changed that character, from a pastoral landscape toward a fully developed residential landscape. The first dwellings within Northlake are constructed, and over time, as more dwellings are developed on these lots, the character will mature into a full urban landscape.

Figure 1: Drone photograph westwards over Outlet Road 2017 showing ongoing construction March 2017

2.3 The portion of AA-D1, relevant to this report, extends from a long 'valley' running west east, within which NSZ is located, northwards to Outlet Road (the subject land is shown indicatively on the photograph above). The landform rises from the Northlake Drive valley up to a high point, approximately 30 metres above Northlake Drive then falls over a similar elevation to the north, over rolling land, down towards Outlet Road. At the south side of Outlet Road, the land is relatively flat, varying in width from 50-80 metres, and forming a visible flat base to the ridge that runs along the south side of Outlet Road.

2.4 That rising landform extends northwest, rising gradually on rolling land towards the north-western extremities of the Northlake Zone. The existing AA-C2 area extends along the visibly flat land that borders the south side of Outlet Road, with a typical depth of 45m. That same C2 area extends a further 800m to the north, adjacent to Outlet Road as it continues towards the camping ground by the Clutha River.

2.5 Within the existing Structure Plan, the residential density decreases as the land rises above and behind the ridge to the west, culminating in AA-E1, an area that was established to protect the steeper, more visible landscapes of the ridge that fronts Outlet Road and the land that adjoins Sticky Forest at the northwest corner of the NSZ.

2.6 A mature Pinus Radiata shelterbelt flanks the western edge of AA-D1 (at the eastern end of AA-E1). That shelterbelt will be removed during development as the land is reshaped for the purpose of developing residential lots. The inevitable process of earthworks in the existing D1, C2 and B3 AA's will result in a change to the existing landform that will modify the form but still retain the northern sloping land of the

existing landform, towards Outlet Road. That landform is still substantially grassland, with some earthworks having been undertaken as part of the wider development process to date.

2.7 The process of developing that land for the purpose of establishing roading, infrastructure and residential sites will more than likely result in benched terracing dropping towards Outlet Road, in some form or another. The existing landform will change substantially.

3.0 THE EXISTING ZONING FROM AN URBAN DESIGN AND LANDSCAPE PERSPECTIVE

AA-C2

3.1 AA-C2 extends parallel to Outlet Road at a depth of 45m, for a total distance of 925m. Development within this 5.5-hectare block can occur at an average density of 4.5 dwellings per hectare (+ or – 15%); resulting in a maximum of 28 dwellings. The NSZ does not contain a minimum lot size but rather a more flexible 'target density' with further flexibility to extend that range by 15%.

3.2 The target density applies over the whole of the activity area, so it is feasible for variable densities to occur within an activity area; to accumulate a higher density in one part of an activity area, while maintaining a lower density elsewhere. That has already occurred in the southern part of AA-C2 (an area of 7,884m^2), where 8 lots have already been developed at an average of 655m^2 per lot, which equates to a density within that part of the Activity Area at 12 dwellings per hectare.

3.3 The net effect is that the balance of the C2 area, which comprises 4.71 hectares, can be developed to provide a further 20 dwellings (including the 15% target density float). Those 20 dwellings could be located anywhere within the C2 area. The dwellings could be accumulated within the area subject to this plan change, although it is more likely to assume that a land owner would more likely disperse at least some of those lots over the residual C2 land further to the north. Based on that reasonable expectation, it remains feasible that up to 15 dwellings could be located within the area proposed to be rezoned from C2 to D1. In that case the environment would include buildings up to 8m high, with a treed roadside edge. Over time, views from Outlet Road through the C2 area would be constrained, and views of the B3 and C2 areas - through the D1 area would not be possible.

3.4 Development controls in AA-C2 include building coverage of 40%, with buildings located 4.5m from Outlet Road up to a height of 8m. A consistent landscape approach along Outlet Road is required, including planting trees within the first 3.5m. The ODP Assessment Matters include consideration of the number of direct vehicle accesses on to Outlet Road from AA-C2.

AA-D1

3.5 AA-D1 provides for medium density residential activity, with buildings anticipated up to 10m high, covering up to 65% of the site. Buildings can be located up to 3m from road boundaries and 1.5m from other internal boundaries. No recession planes apply.

3.6 The Council granted approval for an Outline Development Plan (RM160152) for a total of 421 lots within AA's B4, D1 and part of C2; of which 105 residential lots are located in the northern part of AA-D1 (being that part of AA-D1 adjoining the land subject to this plan change, intended to contain part of a proposed retirement village).

3.7 The effect of implementing the approved development will be to completely screen any views from Outlet Road of any of the land located to the west of D1 – such as areas B3 and C1.

AA-B2 and B3

3.8 AA-B2 and B3 are located further inland to the west of D1, and are equivalent to the Low Density Residential zone in the Operative District Plan. The AA-B Activity Areas provide for a density of 10 dwellings per hectare (+ or - 15%), building coverage of 40%, with buildings located 4.5m from roads and 4.5m and 2.0m from other internal boundaries. Building heights of up to 7 to 8m are anticipated depending upon ground slope. Lots sizes in earlier subdivisions of AA-B4 have typically resulted in section sizes of 400 – 700m^2.

AA-C1

3.9 AA-C1 contains 13.1 hectares of land and comprises the lower slopes adjoining AA-B2 and B3 along their northern and western boundaries respectively, and edges to the base of the more elevated AA-E1. Development within AA-C1 is managed by similar rules to AA-C2 described above.

3.10 Development within this area is anticipated at the density of 4.5 dwellings per hectare. Building heights are limited in this area to 5.5m, over 40% of the site. Typically, this neighbourhood will be developed with larger sections of land with a minimum site size of 700m2

3.11 The plan change proposes to change two small lower parts of AA-C1 into B2 and B3 and one small part of AA B3 into AA C1.

AA-E1

3.12 AA-E1 applies to the upper slopes of the NSZ land, and is generally the more visible open land that was identified as being unsuitable for development given its potential visibility from wider views outside the zone. Buildings are non-complying activities within this activity area. The south eastern 'tongue' of AA-E1 located between AA- C2, AA-B3 and AA –C2 is not visible from wider views, however it does provide for good green space and generally restricts dwellings from establishing on land that may have occupied visible skyline sites along the top of the escarpment.

3.13 The proposed change has identified one small pocket of AA E1 that is appropriate for inclusion within the urban area of the NSZ.

3.14 The boundary of the western edge of AA-B2 is proposed to be amended so that the boundary better aligns with the underlying landform. This part of the zone adjoins a physical and visual buffer; adjacent to the lower slopes of Sticky Forest. The minor adjustment along this western boundary will have no effect upon the landscape values of this area, nor upon visibility from outside of the zone.

3.15 A small area of E1 (1,323m^2) is located at the south-east end of that E1 buffer that extends to the west of and parallel to Outlet Road. This larger feature is an elevated terrace that provides physical and visual separation of much of the AA-B3 and AA-C1 land from Outlet Road level. This feature is linear and at a reasonably constant height of approximately 7 – 9 metres above the level of Outlet Road. As this feature terminates to the south – it progressively drops in height. It is proposed that the southern-most end of this feature will be re-classified as AA-D1. This minor amendment to E1 will have a negligible effect on the landscape outcome intended for E1.

4.0 RE-CONTOURING AND EARTHWORKS

4.1 The efficient delivery of affordable residential land that enables future owners to commence building with as few unforeseen costs as possible requires that almost all of the necessary earthworks are completed by the developer. This also ensures that the most efficient and appropriate roading alignments are developed at that same time, and other infrastructure and reserve areas are all developed together.

4.2 In Northlake the original pastoral landform provided a shallow valley that extended westwards from Outlet Road, with a series of terraces on either side. That overall landform has been maintained, with modifications as described above made to enable logical residential land development.

4.3 The land that is the subject of this plan change will be modified along the same principles of working with the existing levels, aspect and outlook that is provided by the original ground surface. In this case the land will be modified to provide a series of three terraces (each terrace approximately 100m deep) that step up from Outlet Road, and then drop back down to Northlake Drive.

4.4 These terraces will result in a new western edge to the proposed D1 area that will provide a reasonably obvious vertical transition to the B3 land that will be more elevated (6-10 metres above the D1 area). The new terrace face will be developed as a re-vegetated face.

4.5 The operative Structure Plan indicates the approximate position of a series of walkways and cycleways that extend throughout the zone. These routes are supported at an objective and policy level in the operative plan. This plan change request will retain that general route (indicated in yellow in Figure 2 below).

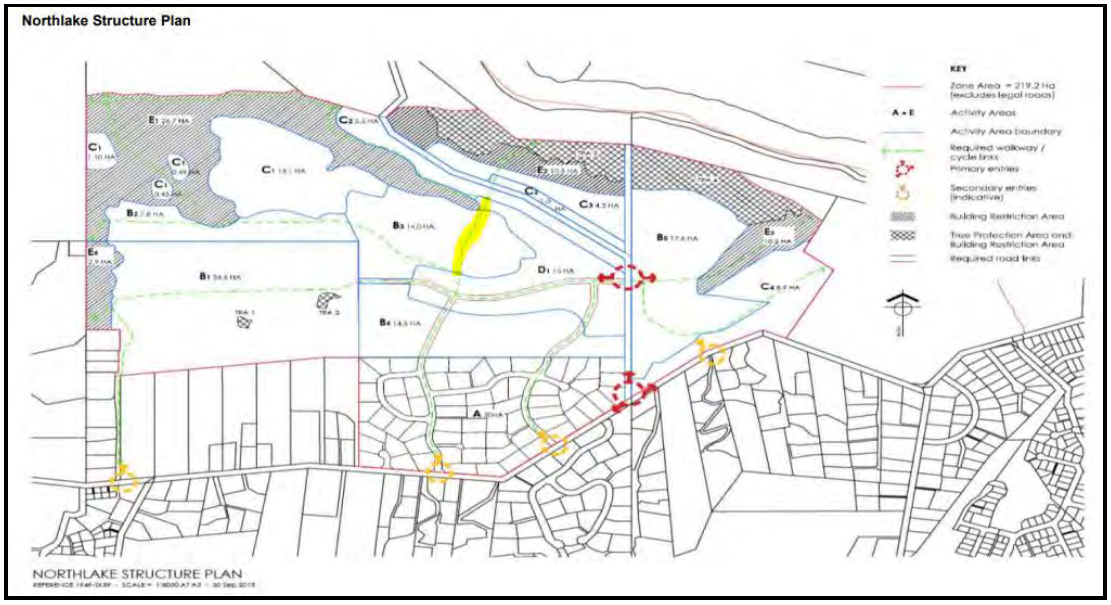


Figure 2: Operative Structure Plan – Walkway Linkages

5.0 ASSESSMENT OF EFFECTS

5.1 The key public space in respect of assessing this plan change request is Outlet Road, and so that has been the focus of this assessment and the relative change to the urban amenity outcome otherwise enabled by the operative Structure Plan and associated density rules.

AA-C2 to AA-D1

5.2 The change from AA-C2 to AA-D1 occurs over an area of 1.558 hectares. As noted above, the C2 zoning allows this Activity Area to be used for up to 20 additional residential units constructed up to 8m high, provided they are located 4.5m from Outlet Road. The re-zoning to AA-D1 would enable a potentially higher density of housing density to occur, with slightly higher buildings (up to 10m), closer to Outlet Road (3.0m). The amenity outcome will be slightly more intensified, but given the anticipated change in the wider neighbourhood context; such a change will not be adverse.

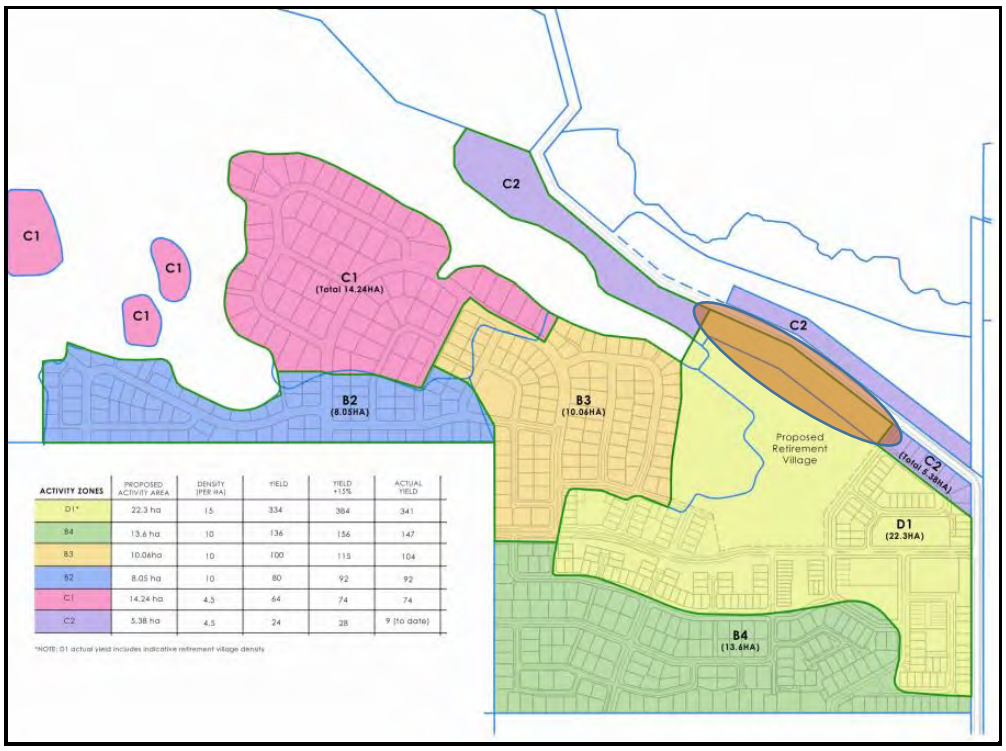


Figure3: C2 to D1

5.3 The key effect relates to the effect that development will have upon:

a. Members of the public passing along Outlet Road; and
b. Owners of land on the northern side of Outlet Road that is also included within the NSZ.

5.4 Outlet Road, north of Mount Burke Street, is currently unsealed and provides access to the Outlet Motor Park and for recreational users to gain access Lake Wanaka (boat launching ramp) and the Clutha River track. The NSZ confirms that urbanising this land is an appropriate outcome, and best serves the future needs of Wanaka. The key landscape issue in the NSZ is the protection of the upper slopes (AA-E1) from inappropriate development. The lower level land does not hold the same landscape qualities.

5.5 In respect of AA-C2, the primary design consideration is establishing a consistent edge treatment to Outlet Road, through Assessment Matter which encourages street intersections with Outlet Road in favour of individual street crossings. This also minimises the number of vehicle crossings, maintaining a consistent urban form, providing a planted edge and minimising the potential for a series of individual garages to be developed up to the Outlet Road boundary. These design considerations remain unchanged.

5.6 In terms of the impacts on people's experiences as they pass along Outlet Road, the change will be relatively minor. The change will result in some variety of building shape and density near Outlet Road, but will not materially affect the way in which people experience or enjoy their surroundings as that experience will be substantially changed by the scale and proximity of the approved NSZ.

5.7 Provided the edge controls are maintained within that strip of land, the effect of adopting AA-D1 for this area upon people moving along Outlet Road is relatively minor. Those controls include a consistent planted amenity 3 metres deep and an absence of driveway entries.

5.8 The land on the northern side of Outlet Road, opposite the land within this proposed plan change, is zoned AA-C2. That 1.5-hectare strip of land also runs parallel to Outlet Road, and is owned by NIL. NIL as landowner accepts any effects arising from this plan change. Further to the north of that land is a larger block (4.5 hectares) that is owned by Callum Urquhart. This land is separated from the plan change area by over 60m. When that land is developed the dwellings are likely to be oriented towards the north. Any effect upon the Urquhart land from amending the AA-C2 area to AA-D1 will be negligible, and will have no impact upon the way in which that land is developed or enjoyed in the future.

5.9 The existing 8 residential site development, already consented and built on the eastern end of the C2 area, complements the adjoining D1 neighbourhood to the south and west, albeit with larger lots than those in the adjacent D1 area, providing an appropriate scale of density in this urban context.

5.10 In retrospect, the 4.5 ha density of the C2 area is not a necessary method or treatment for the eastern and central areas of the C2 area. The southern portion of Outlet Road, between the Northlake development and the Hikuwai Development, is largely flanked on both sides by D1 density (15 dwellings / hectare). A continuation of that density, or similar, is appropriate for some way along the C2 area. The western half of the C2 area is flanked to the south by the visible escarpment (E1 land - Building Restriction Area) and Outlet Road, and a lower dwelling density is appropriate at that end of the C2 land.

5.11 The setbacks proposed in the central area of the C2 land, that area being proposed to change to D1, along with the continuous planting and other proposed controls, will promote an appropriate edge and will not compromise the wider experience of Outlet Road, being one of a decreased dwelling density at the western end of Outlet Road.

5.12 The key differences between AA-C2 and AA-D1 are density, additional building height (a difference of 2m), and reduced boundary setbacks. Proposed methods to mitigate these effects include:

a. Limiting buildings to 2 levels within the first 40m from Outlet Road
b. Preventing any direct access on to Outlet Road from individual properties
c. A building setback distance of 7.0m from Outlet Road.
d. Establishing and maintaining a consistent planted corridor along the first 3m of the setback from Outlet Road (and any fencing of that boundary to also provide a consistent edge).
e. Retaining a restrictive palette of colours and exterior buildings materials within 20m of Outlet Road

AA-B3 to AA-D1

5.14 The plan change proposes to re-zone 2.4512 hectares of AA-B3 land to AA-D1. This area is at least 100m from Outlet Road.

5.15 The proposed boundary between AA-D1 and AA-B3 will be much more defined and apparent in time due to the creation and definition of the terrace edge that will extend north to south between AA-B3 and AAD1. The face of this terrace will be planted to further enhance and define the transition. From wider viewpoints, including Outlet Road and the internal roads of the NSZ, this transition will not be readily discernible, given the scale and form of residential development proposed in the Zone.

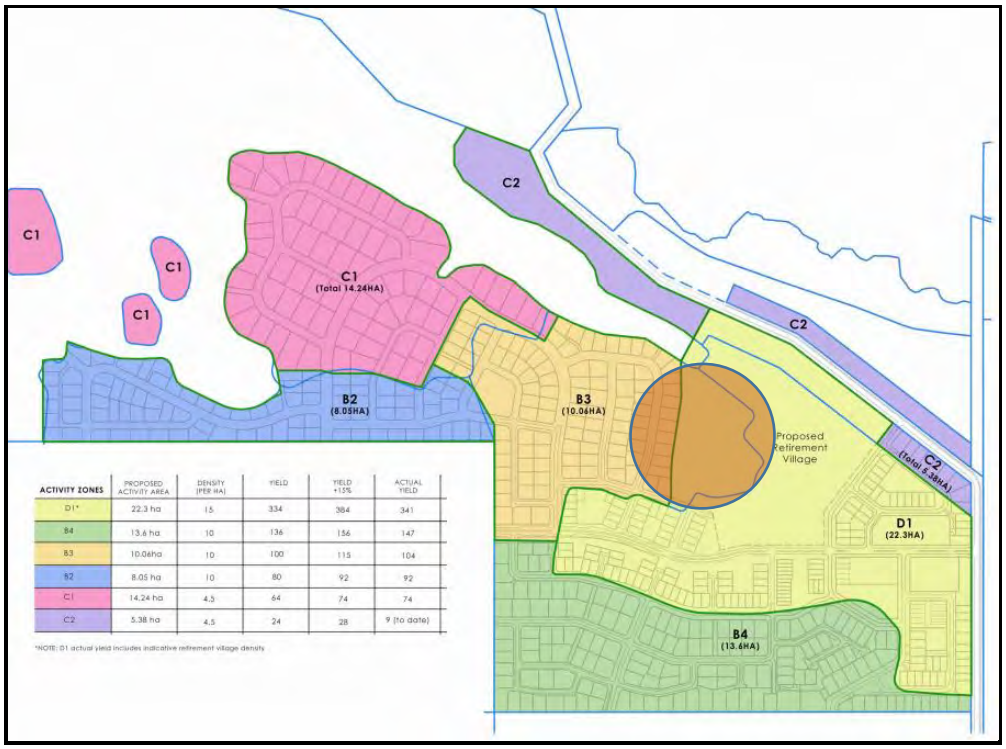


Figure 4: B3 to D1

5.16 Viewed from Outlet Road, the expansion of the existing AA-D1 area into the existing AA-B3 will be more logical and, as vegetation establishes, that terrace face will read as a natural boundary. The current activity area boundary line will not be discernible. From a landscape and urban design perspective the change in density that arises from changing to AA-D1 is appropriate.

AA-C1 to AA-B3

5.17 It is proposed to change the zoning of 7,571m^2 of the lower slopes of AA-C1 to AA-B3. This part of the land is located at the same elevation as the adjacent B3 land.

5.18 The AA-C1 land wraps around the AA-B3 land in the north-east corner, and so acts to create an AA-C1 buffer along part of that boundary nearest Outlet Road. In addition, the adjoining E1 area provides a continuous 50m wide (average) buffer strip along the northern side of AA-B3. This area is to be retained as open space, and ensures that there is no effect when viewed from Outlet Road.

5.19 This adjustment arises from more detailed site planning that has been undertaken by NIL over the previous 18 months. Such planning has involved designing an efficient roading and infrastructure network that correlates with the underlying landform as much as possible. In this case, any effects of altering from C1 to B3 will be fully internal to the NIL land and will promote improved urban design outcomes.

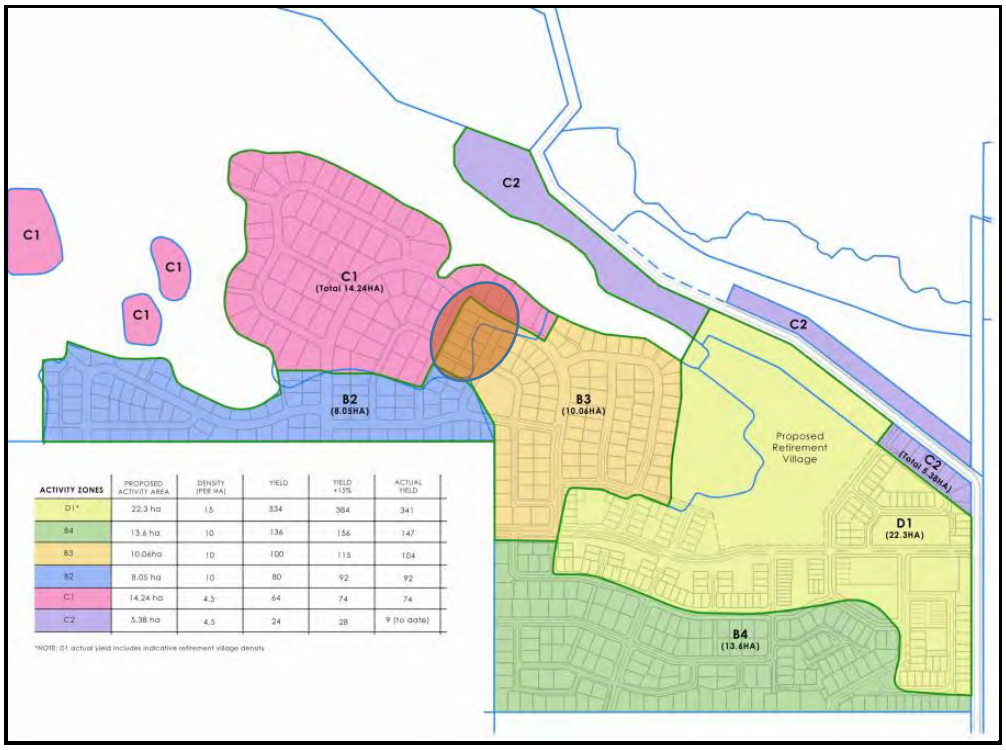


Figure 5: C1 to B3

AA-C1 to AA-B2

5.20 Two small pockets of AA-C1 land (1,456m^2 and 1,004m^2) are proposed to be re-zoned as AA-B2 and AA-B3 respectively, and one small area is proposed to be rezoned from AA-B2 to AA-C1. This is to better align with the proposed overall street layout plan. These changes will not have any adverse landscape or urban design effects on any other land owner.

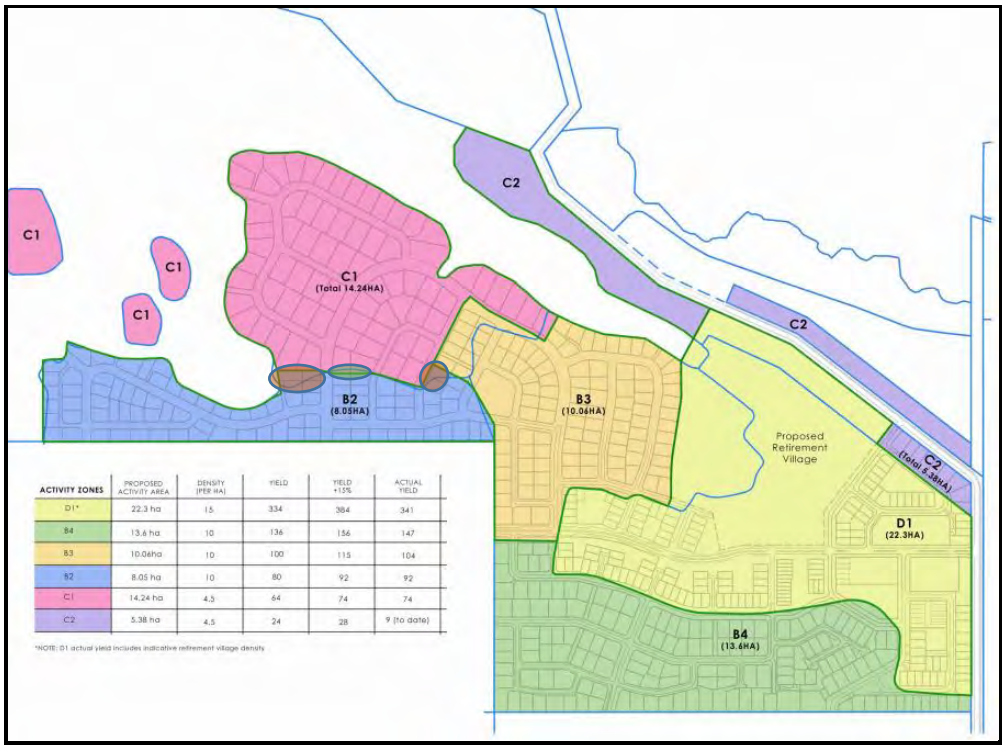


Figure 6: C1 to B2

E1 to D1 and E1 to B2

5.21 The expansion of AA-D1 into AA-E1 is a relatively minor adjustment. It involves an area of 1,323m^2 of E1 land at the south-east and lowest end of a ridge which rises towards the north-west. This area of land does not contain any Kanuka or any other features of natural or landscape significance. This land is currently slightly elevated above the existing D1 land to the south, however it would be modified to be congruous with the adjoining D1 area. The remainder of the tongue of E1 that lies between AA-C2 and AA-B3/ C1 will be retained as an unbuilt area of open space (refer Figure 3). The effect of this change is minimal and any adverse effects arising from that change will be less than minor and not discernible in the wider context of the Northlake development.

5.22 There are also several minor adjustments to the Activity Area boundaries at the western edge of AA-B2 to also better align with regular lot layouts. These adjustments are almost indiscernible and of no landscape or urban design effect.

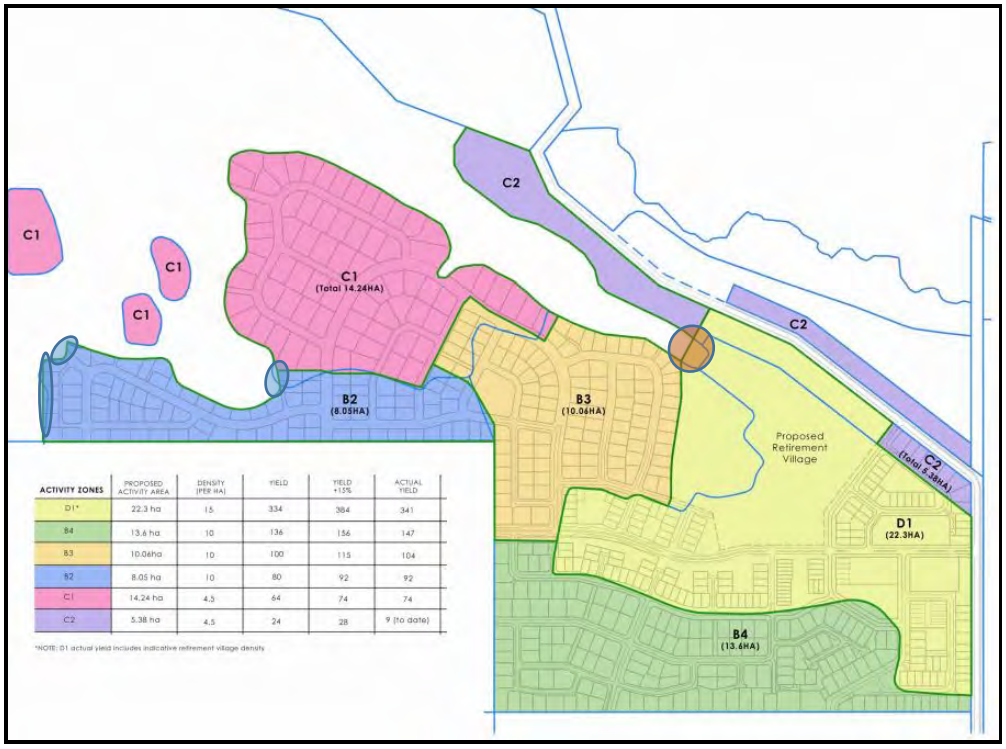


Figure 7: E1 to D1 & E1 to B2

6.0 URBAN DESIGN ASSESSMENT OF A RETIREMENT VILLAGE IN AN EXPANDED AA-D1

6.1 This plan change request seeks to expand the area of land classified as AA-D1, We are advised that a retirement village may be developed in this expanded D1 area. This assessment considers the urban design implications.

6.2 A retirement village in this location will typically be designed upon a duplex/ triplex villa layout that tends to be mostly compact (2 bedroom) single level buildings. A comprehensive design is used to plan local streets and clusters of buildings; which generally achieve a medium – high density. The building designs often follow a consistent palette of colours and materials. Detailed design matters would follow in a subsequent resource consent application which would ensure that the retirement village development complements its residential surrounds.

6.3 The operative rules for AA-D1 enable / anticipate the development of a retirement village. An appropriately designed retirement village is complementary to an established residential neighbourhood, and it is an appropriate land use where it is located amongst other residences with easy access to local shops, services and recreational facilities. A retirement village within this area is considered to be an appropriate use for this site for several reasons, primarily because of its location and proximity to the village centre. The village centre includes a consented Medical Centre currently under construction. This facility, and others consented and proposed within the village centre, would also be within easy walking distance from a retirement village on AA-D1.

6.4 In general, a retirement village in this part of AA-D1 would occupy a northern facing slope, a sunny site with good views and centrally located, compared to other locations within the NSZ. Walking links to the

village, and beyond to the Outlet area and Clutha tracks, would be easily accessible and the traditional gated community, often associated with retirement villages, would be avoided.

6.5 The ODP adopts the principles of the Urban Design Protocol's 'Seven C's of Urban Design'. These seven matters are included in the Residential Chapter of the ODP. Those seven matters have been included as part of this assessment below:

Context

A retirement village in this location will have a close relationship with the village centre of Northlake and is within an easy walking distance from the centre. There are 3 opportunities for connection to the existing street network, from the south and east of the retirement village centre. This avoids the more traditional single gated entry often found in retirement villages. This also ensures that residents of a retirement village are valued as an integral part of the wider community with easy access to facilities. In effect the retirement village, by way of its location, can be seen as a good neighbour and central to the wider character of the site. The surrounding residential development neighbourhood therefore provides the ideal context for a retirement village.

Character

This matter relates to the design of future buildings within the site. Whilst not relevant to this Plan Change nevertheless it is recommended that the overall design and appearance of the future structures within that part of retirement village close to Outlet Road should be subject to the residential design controls in order to maintain a consistent architectural amenity.

Choice

This mostly relates to the design of particular buildings – not applicable to this assessment

Connections

The retirement village site is well connected internally to the Northlake development by way of roading, to the village centre and wider built environment. An opportunity exists to have an internal walkway within the retirement village to the north, to Outlet Road. Connections to the wider natural environment are available through both the internal connection network within Northlake and to the north to the extensive walking and cycle trails that exist

The site has the potential for good visual connection to the north, west and east, given the slope across the site downwards towards the north. Those views will be exceptional

Creativity

This mostly relates to the design of particular buildings and, in the absence of developed design, is not applicable to this assessment. Comments made earlier in regards to character however are relevant and, given the underlying slope and landform of the site, future design has the opportunity for a well-crafted design above what may be available on a flat site.

Custodianship

This relates to the design of particular buildings and is not relevant to this assessment. It is understood that this will be dealt with through ODP/ Resource Consent process.

Collaboration

Where appropriate, the use of a multi-disciplinary design approach involving architects, landscape architects and urban planners early in the design process is recommended. This approach has been successful to date in the wider Northlake design process.

7.0 CONCLUSIONS

7.1 The proposed changes to the Structure Plan expand the AA-D1 (4.2 hectares) and AA-B2 and AA-B3 areas (1 hectare).

7.2 The expansion of AA-B2 and AA-B3 (into AA-C1) occurs well within the central part of zone, and will have no adverse landscape or urban design effects. The area of change is relatively small and will be imperceptible from any elevated viewpoints on Mt. Iron.

7.3 The expansion of AA-D1 occurs into the AA-C2 (to the north), and the lower hummocks of AA-B3 and AA-E1 to the west.

7.4 The adjusted boundary between AA-B3 and AA-D1 will become more clearly defined as a result of existing and intended earthworks. A planted terrace face will separate these activity areas, confirming their different character.

7.5 The C2 strip of land will be developed for residential purposes at a lower density than what is proposed. That difference in density and anticipated built form outcomes is not significantly different in an urban context.

7.6 The C2 strip does not contain any significant landscape values that necessitate any particular planning constraints on use or density.

7.7 However, from an urban design perspective, it is appropriate to ensure that the overall objectives and policies for this area that seek to encourage a consistent defined urban edge alongside Outlet Road are implemented. To that end the following controls are recommended:

a. Limiting buildings to 2 levels within the first 40m from Outlet Road
b. Preventing any direct access on to Outlet Road from individual properties
c. A building setback distance of 7.0m from Outlet Road.
d. Establishing and maintaining a consistent planted corridor along the first 3m of the setback from Outlet Road (and any fencing of that boundary to also provide a consistent edge).
e. Retaining a restrictive palette of colours and exterior building materials within 20m of Outlet Road

7.8 Expanding AA-D1 to better enable development of a retirement village in this location is appropriate from an urban design perspective.

C

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NORTHLAKE INESTMENTS LIMITED
PRIVATE PLAN CHANGE REQUEST
INFRASTRUCTURE REPORT

PROJECT:	Northlake Wanaka, Private Plan Change Request
PRINCIPAL:	Northlake Investments Limited
OUR REF:	W4481-07
DATE:	September 2017

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REVISION / APPROVAL PANEL

Rev:	Date:	Prepared By:	Reviewed By:	Comments:
0	11/08/17	PGS	MJB	Issued for client review
1	22/09/17	PGS	AGT	Issued for client review
2	25/09/17	AGT	MJB	Issued for Plan Change

CONTENTS

1. Scope

This report has been prepared to support a private plan change request to adjust the activity area boundaries at Northlake, Wanaka. The private plan change request seeks the adjustment of the activity area boundaries to allow for increased higher density living and the possibility for the development of a retirement village within the Northlake Special Zone while also rationalizing the internal activity area boundaries to more appropriately match the proposed lot and road layout.

This report is to be read in conjunction with the following previous reports;

Report:	Appendix Reference:
Hadley Consultants Ltd: Feasibility of Utility Services and Infrastructure (submitted as part of Plan Change 45)	A
Paterson Pitts Group: Subdivision Stages 1-3 Infrastructure Report	B
Paterson Pitts Group: Subdivision Stages 4-6 Infrastructure Report	C
Paterson Pitts Group: Subdivision Stages 8-9 Infrastructure Report	D
Tonkin & Taylor: Water Modelling 50553.324 (dated 10 February 2016)	E
Watershed Limited – Water Modelling Stages 1-7 (dated 3 June 2017)	F
Watershed Limited – Water Modelling Stages 1-4 (dated 31 August 2017)	G
Rationale: Wastewater Modelling (dated 14 January 2016)	H
Rationale: Wastewater Modelling (dated 1 February 2016)	I

This report covers the availability of the following infrastructure elements and how the amended activity area boundaries and resulting dwelling yields will be suitably serviced within the greater Northlake Special Zone.

- Stormwater
- Wastewater
- Water Supply – Potable and Firefighting
- Network Utility Services (electricity and telecommunications)

2. Resulting Dwelling Yield

Table 2.1 below identifies and compares the residential yield (du's) of that part of the operative Northlake Zone that is owned by Northlake Investments Limited with the proposed plan change alternative yields. It is these yield numbers which have been used to assess the infrastructure needs for the proposed plan change.

Activity Area	Density (Per ha)	Existing Residential Yield +15% (du's) [1]	Proposed Residential Yield +15% (du's) [2]	Difference in Residential Yield (du's)
D1	15	282	366	84
B4 [3] [4]	10	157	157	0
B3	10	134	113	-21
B2	10	88	93	5
C1	4.5	79	74	-5
C2	4.5	37	29	-8
	Total	**777**	**832**	**55**

Table 2.1: Northlake Activity Area Dwelling yields

[1] Existing Residential Yield has been calculated using the Northlake Special Zone Structure Plan as modified by RM160152 (Outline Development Plan decision)

[2] Proposed Residential Yield has been calculated using the areas shown on Baxter Design Group plan 2754-SK02 25 September 2017.

[3] D1 area was adjusted by minus 1.8ha to calculate the Existing Residential Yield for this activity area as per the requirements of District Plan Rule 12.34.6.2 (iii).

[4] D1 area was adjusted by minus 1.416ha to calculate the Proposed Residential Yield in this activity area as per the requirements of District Plan Rule 12.34.6.2 (iii). The adjustment area was reduced as the non-residential area of the Village Centre is now better defined compared to at the time of RM160152

3. Stormwater

The Northlake development proposes to maintain the runoff characteristics of the existing catchment and the proposed adjustments to the activity areas are not going to result in a change to the stormwater catchments. The development will result in an alteration to the existing runoff flow paths and will result in an increase in peak flow runoff once the development is completed and all dwellings are built due to a slight increase in proposed density.

It is proposed to continue to utilise the low impact design approach i.e. swales, detention ponds, soakage along with traditional piped reticulation where required to ensure there is no increase from pre to post development flows leaving the site and to ensure that stormwater quality is maintained prior to subsequent discharge into the Clutha River.

The Northlake site can be split into two catchments. It is proposed to discharge both catchments to the current discharge locations at the site boundary i.e. post development flow paths will closely align with the pre-

development flow paths. To successfully undertake this, a stormwater system that aims to minimise the environmental impact by reducing peak flow through attenuation, reducing discharge by infiltration and soakage, improving water quality by filtration and the use of detention devices has been adopted.

4. Wastewater

4.1 Wastewater Demand

Table 4.1 below shows the theoretical wastewater generation flow rates (l/day) for the Northlake Development using the existing and proposed residential lot yields.

Scenario	Wastewater Demand (litres/day/du) [1]	Dwelling No.	Total (litres/day)
Existing Residential Yield	750	777	582,750
Proposed Residential Yield	750	832	624,000

Table 4.1: Wastewater Total Litres Per Day

[1] *The wastewater demand calculation in Table 4.1 above is based on QLDC LDSCoP Section 5.3.5.1(a) parameters i.e. average dry weather flow (ADWF) of 250 litres per person per day and 3 people per dwelling. No peaking factor has been applied to this number.*

The QLDC LDSCoP Section 5.3.5.1(a) identifies the following peaking factors to be applied to the wastewater daily demands indicated in Table 4.1

- Dry weather diurnal peaking factor of 2.5
- Dilution/infiltration factor of 2 for wet weather

Applying these peaking factors results in the peak flow estimation as shown in Table 4.2 below.

Scenario	Peak Hour Flow (litres per second)
Existing 777 dwelling equivalents	33.72
Proposed 832 dwelling equivalents	36.11

Table 4.2: Wastewater Peak Hour Flow

4.2 Council Reticulation

As part of the construction of Stages 1-3 of the Northlake development a Ø300mm main was extended up Outlet Road to the entrance to the Northlake development at Northlake Drive. This main was installed with the capacity to reticulate the entire Northlake development west of Outlet Road including other areas of the Northlake Special Zone located upstream of this main (Allenby Farms Limited).

The proposed adjustment to the activity areas within the Northlake development result in an increase in potential dwelling yield of 55 units, however as shown in the Table 4.3 below the existing 300mm main still has the capacity to service the catchment.

Outlet Road Foul Sewer Main Ø300mm Peak Flow	
	Theoretical Peak Hour Flow (l/s)
Northlake Investments Limited (proposed 832 dwellings)	36.11 l/s
Upstream Catchment 420 additional dwellings [1]	18.23 l/s
Total	**54.34 l/s**
300mm Outlet Road main capacity (litres per second)	58.5 l/s
Residual Capacity	**4.16l/s**

Table 4.3: Outlet Road 300mmØ main capacity.

[1] *Upstream catchment numbers based on density yields +15% for neighbouring B1 (Allenby Farms Limited) and C3 (Urquhart)*

4.3 Internal Reticulation

The site has a general slope to the east from its high point at the western boundary bordering Sticky Forest. The majority of the site will be able to be drained using standard trunk and lateral gravity pipes to connect into the existing 300mm main in Outlet Road.

A small area of the proposed D1 and C2 on the north-eastern boundary of the site will require the construction of a pump station or a low-pressure reticulation to convey waste water up to the existing reticulation. That pump station will be necessary regardless of the proposed plan change.

5. Water Supply

5.1 Water Demand

Table 5.1 below shows the theoretical water supply demand (l/day) for the Northlake Development using the existing and proposed residential lot yields.

Scenario	Potable Demand (litres/day/du) [1]	Dwelling No.	Total (litres/day)
Existing Yield	2100	777	1,631,700
Proposed Yield	2100	832	1,747,200

Table 5.1: Water Supply Total Litres Per Day.

[1] *Potable Demand based on 700 litres/person/day and 3 persons per residential unit.*

The QLDC LDSCoP Section 6.3.5.6 identifies a peaking factor for the 'Rest of District' as being 6.6 however recent modelling by Watershed suggests a peaking factor of 4.6 (peak day factor of 2 and peak hour factor of 2.3) is more appropriate (refer to **Appendix G and Appendix J**)p

The report contained in Appendix G summaries the water supply modelling results indicate that Stages 1-14 (see plan attached the Appendix G report to location of these stages) can be supplied through the proposed reticulation and that this supply will meet the level of service required by QLDC.

Further refinement of the design layout will be required at the time that detailed design is undertaken and Engineering Acceptance is applied for however the attached report confirms there are no fundamental issues with the design.

5.2 Firefighting Supply

In accordance with SNZ PAS 4509:2008 New Zealand Fire Service Firefighting Water Supplies Code of practice, will require a firefighting water supply classification of FW2 for all residential lots. An FW2 classification requires 12.5l/s of water flow available within a distance of 135 metres and an additional 12.5l/s of water flow available within a distance of 270 metres. Council modelling will be required to ensure FW2 flows can be maintained during Peak hour flows.

We attach for Council's information the recent results provided by the New Zealand Fire Service after flow testing of the fire hydrants in Northlake Stage 1 (refer to Appendix K). Further testing has been completed in Northlake Stages 2 & 3 however the results of this testing has not yet been issued by the NZFS.

6. Network Utility Services (electricity and telecommunications)

The existing network design for electricity and telecommunications has sufficient capacity to service the proposed adjustments to the activity areas and the resulting increase in dwelling yields.

7. Conclusion

The capacity of the existing and proposed three waters infrastructure has been assessed in terms of the amended Structure Plan. No infrastructure constraints have been identified that would result from the proposed changes to the activity areas and therefore the proposal is considered appropriate from an infrastructure point of view.

Stormwater runoff can be satisfactorily reticulated and disposed of using a continuation of the range of low impact design solutions i.e. swales, detention ponds, soakage along with traditional piped reticulation where required to ensure there is no increase from pre to post development flows leaving the site and that discharged stormwater quality is maintained prior to ultimate discharge to the Clutha River.

The proposed change will result in an increase to the expected peak hour flow for wastewater however the existing infrastructure has the capacity to absorb this increase. The majority of the site will be able to be drained via gravity reticulation while a small portion along the low lying north eastern boundary of the site will likely require the construction of a pump station or low-pressure reticulation system to connect back into council reticulation.

Water supply hourly Peak flow will increase slightly as a result of the proposed changes to the activity areas, however, it is anticipated that with planned upgrades that the site can be appropriately serviced.

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CONSULTING CIVIL & STRUCTURAL ENGINEERS

Michaela Ward Meehan

Northlake Plan Change

Feasibility of Utility Services & Infrastructure Report

Michaela Ward Meehan

Northlake Plan Change

Feasibility of Utility Services & Infrastructure Report

March 2013

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Revision	Author:		Reviewer:		
	Name	Signature	Name	Signature	Date
Final	J McCartney		J McCartney		13/3/2007

Contents

1. Introduction

This report has been prepared to support a private plan change request to re-zone approximately 256 of land in Wanaka from Rural Residential and Rural General to a new zone ("the site"). The site is referred to as "Northlake". The private plan change requestor is Michaela Ward Meehan.

The site is located on the north side of Aubrey Road, Wanaka, with Outlet Road running through the site. The site is contained in five parcels held by four land owners and is currently zoned Rural General and Rural Residential under the Queenstown Lakes District Plan.

The private plan change request seeks the re-zoning of the site to give effect to the community's long term intentions for the land, as described in the Wanaka Structure Plan (2007), by enabling residential development of approximately 1,707 new dwellings.

Michaela Ward Meehan (MWM) has engaged Hadley Consultants Limited (HCL) to investigate and report on the feasibility of providing utility services and the necessary development infrastructure for the development of the subject site at Outlet Road, Wanaka.

This report considers the nature of the proposed development, the site conditions affecting the implementation of the necessary utility services and development infrastructure and describes the proposed implementation of the following elements:

- Water supply reticulation
- Wastewater reticulation
- Stormwater control
- Gas supply

2. Nature of Proposed Development

MWM proposes to develop the existing site adjacent to Outlet Road in Wanaka. The site, located to the north-east of Wanaka and covering around 256 hectares will cover land legally described as Lot 1 DP 27290, Lot 3 DP 300408 and Lots 65, 66, 67, 68 & 69 DP 371470.

The structure plan for the development is yet to be finalised. However, it is expected that the structure plan will indicate areas of open space and varying density of housing development. The maximum proposed number of new house sites is estimated at 1,707.

We note that the assessment of the necessary development infrastructure provided below is limited to consideration of the scale of the development as it is currently proposed and excludes consideration of specific stages and the specific locations of future dwellings and infrastructure within the site.

3. Site Description

The area of the plan change request is located on 256 ha of land to the north of Aubrey Road and on both sides of Outlet Road in Wanaka. The current access to the site is from Aubrey Road, Outlet Road and from Peak View Ridge. There is existing infrastructure for water supply and wastewater located along Aubrey Road and the Beacon Point rising main and reservoir are sited along the western boundary of the site.

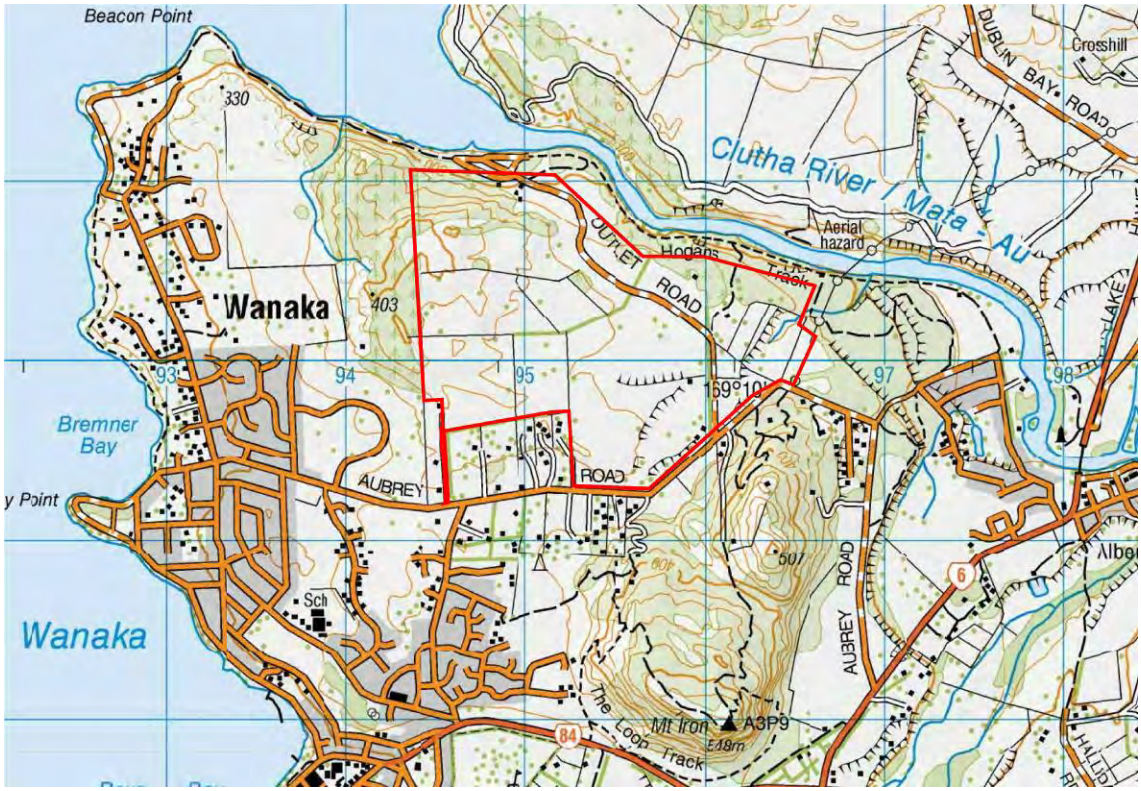


Figure 1 - Topographical map excerpt showing subject site

The site comprises gently sloping land in the central and southern areas with more moderate to steep gradients along the northern boundary where the land falls to the Clutha River. The overall topography of the site is gently falling to the north east.

Based upon the published geological information (Institute of Geological and Nuclear Sciences (IGNS), 1:250,000 Geological Map 18, Geology of the Wakatipu) and geological examination carried out by others the underlying geological materials within the central and western areas is glacial till, whilst the eastern areas are likely covered by outwash gravels. These soils overlie schist bedrock that can be seen as an outcropping a short distance to the south of the site on the slopes of Mount Iron and on the northern bank of the Clutha River.

The existing land use at the site comprises mainly farmland with some forestry and scrub covered areas. Vegetation covering the area is mainly that associated with highly modified farmland and consists of rough pasture, woodlots, shelter belts of mature pines and infestations of broom. However, there are small areas of native vegetation such as kanuka and matagouri. These native plants tend to occupy areas of the site characterised by steeper terrain.

There are no areas of naturally occurring standing water such as streams or saturated, swampy soils. However, it is possible that ephemeral watercourses may be formed in some of the topographic depressions on site during periods of high precipitation.

The proposed development site and surrounding Wanaka area experience generally cold winters with severe frosts at times and hot dry summers. Strong north-westerly winds are also a climatic characteristic of the area. The land receives approximately 700mm of rainfall per annum and may be subject to drought conditions during the summer months.

4. Water Supply

4.1 General

The Beacon Point reservoir is located in an allotment on the western boundary of the subject site. In addition, the rising main from the Lake Wanaka water intake and the falling main from the reservoir run in easements adjacent to the western boundary of the site.

4.2 Water Demand Assessment

Peak water demand would be expected during the summer months when seasonal populations are at their peak and irrigation usage will be at its highest. The following design figures have been adopted.

Demand Item	Potable Demand (litres/day)	No.	Total (litres/day)
Dwelling (average day)	2,100	1,707	3,584,700

The additional average daily water supply demand of 3,585 m^3 per day equates to 41.5 litres per second average flow over twenty four hours.

From the QLDC amendments to *NZS4404:2004 Land Development and Subdivision Engineering*, the peaking factors for the Wanaka water supply are as follows:

Item	Peaking Factor
Average daily flow to peak daily flow	3.3
Average daily flow to peak hourly flow	6.6

Using the QLDC peaking factor, the peak hour flow is estimated at 273.8 litres per second.

4.3 Fire Fighting Demand

In accordance with *SNZ PAS 4509:2008 New Zealand Fire Service Firefighting Water Supplies Code of Practice,* the usage for the developed site is expected to fall into the *"Housing: includes single family dwellings, multi-unit dwellings but excludes multi storey apartment blocks"* category. This will result in a fire fighting water supply classification of FW2. An FW2 classification requires 12.5 l/s of water flow available within a distance of 135 metres and an additional 12.5 l/s of water flow available within a distance of 270 metres.

4.4 T&T Modelling Results

Water supply modelling was undertaken for a previous development proposal on the site. This modelling was undertaken by Tonkin and Taylor Ltd (T & T) who operate and maintain the water reticulation model for QLDC and involved modelling for a new demand across the site of 800 residential dwellings. The results of this concept level modelling for the proposed development are set out below. T&T have used an assumed future reticulation layout and trunk mains network.

Key findings from the modelling work are:

- The higher elevations of the site will require boosting to ensure adequate pressures and fire flows. Dependent upon the final reticulation layout, boosting will be required for all allotments above 348 metres.
- Connection to the falling main from the Beacon Point reservoir may be problematic (as there is no isolation valve) requiring a complete emptying of the Beacon Point Reservoir. Alternatively, connection could be made to the water main in Aubrey Road at the intersection with Peak View Ridge. Due to head losses, this point of connection would result in more of the development site requiring boosting.
- T & T have commented that the reservoir storage volume would need to be considered at the time of development. The suitability of the capacity of the existing reservoir will depend upon the timing of the construction of the planned Hawthenden Reservoir and the construction of the subdivision.

T & T have indicated that there are no problems with the capacity of the existing raw water intake, rising main and treatment plant. The two main restrictions on the water supply for the development highlighted by the modelling report are the capacity of the Beacon Point reservoir and the requirement for boosting of flows in order to achieve the required water pressures in higher areas of the proposed site.

A copy of the report from T & T is included in Appendix 1.

4.5 QLDC Liaison

Discussions with Mr Gerry Essenberg (the Queenstown Lakes District Council Infrastructure Services Three Waters Manager) have been held regarding the current 1,707 residential dwelling proposal.

He has confirmed that water supply will be available from Queenstown Lakes District Council (QLDC) reticulation at Beacon Point. He has also confirmed that there is no need for additional modelling at this time as the likely existing demand on the reticulation will change prior to the

development actually occurring and QLDC is currently working hard on reducing demand through the implementation of the Water Demand Strategy.

The timing of any necessary upgrades to the reservoir and associated facilities will be dependent upon the uptake of sections across a number of growth areas within Wanaka including Three Parks, North Three Parks and West Meadows amongst others. These all draw water from the same pressure zone and the speed of dwelling construction across the entire Wanaka water supply area will determine the timing of any future infrastructure upgrade.

QLDC have indicated that the significant capital expenditure items such as reservoirs would be funded by Developer Contributions. In order to give QLDC as much time to plan for future infrastructure upgrades, they have requested indicative staging information for the development be supplied as soon as it is available.

Mr Essenberg has confirmed that QLDC are interested in talking with the developer about the specific reticulation connections and design at the detailed design stage so that the most cost effective solutions are developed. He anticipates that all new water supply infrastructure will be required to be constructed to applicable QLDC standards.

4.6 Reservoir Capacity

In order to better understand the reservoir capacity restriction we have undertaken further analysis of the existing and future storage requirements.

The storage in the existing Beacon Point reservoir is 3,500 m^3. The most recent report prepared for Council relating to reservoir capacity is the report by MWH New Zealand Ltd titled “Queenstown Lakes District Council – Strategic Water Review” and dated February 2006. This indicated that in 2005, the storage capacity needed at Beacon Point for the population at that time was 3,200 m^3.

Based on the expected number of allotments, an additional 3,166 m^3 of storage is required for the subject site alone.

Since 2005, the zone of Wanaka that is serviced by the Beacon Point Reservoir has experienced significant growth with the establishment of Peninsula Bay subdivision, further stages at the Penrith Park subdivision, development of further stages of the Riverside Park subdivisions, establishment of initial stages of the West Meadows subdivision and other developments on Cardrona Valley Road and Golf Course Road. In addition, it is anticipated that there are other growth areas that will also increase the demand from the Beacon Point reservoir; these include the Three Parks development and the increases to the Ballantyne Road industrial zone.

We estimate that the Beacon Point reservoir is approaching capacity now with regards to storage. This will mean that the development of the subject land will require additional reservoir storage to be built prior to the first stages of the development. In the previous Long Term Council Community Plan (LTCCP), QLDC had programmed the Beacon Point reservoir upgrade to occur during the 2018-19 financial year. In the most recent LTCCP (2012-22), QLDC has not programmed the Beacon Point reservoir upgrade within the 10 year timeframe of the plan.

The upgrading of this reservoir will need to be discussed with QLDC once a site concept has been finalised and the timing for development evaluated. A cost sharing arrangement may need to be achieved to ensure a suitable outcome for all parties.

4.7 Water Supply - Option 1

The first option to address the water supply issues highlighted by the T&T modelling report would be to upgrade the water storage available within the existing Wanaka mains system by construction of an additional storage reservoir. The sizing of such a reservoir would be up to 3,166 m^3 as set out in Section 4.6 above.

We have viewed the as-built drawings for the existing reservoir (copy attached in Appendix 2) and it appears that there is sufficient area on the reservoir site to allow for the construction of a second reservoir. Should this area be insufficient for the size of reservoir required, we can confirm that there is land within the development's boundaries and adjacent to the Beacon Point reservoir that may be able to be utilised for the needed storage.

However, in order to achieve the required minimum residual pressure of 300kPa an elevation difference between supply point and consumer of approximately 30m is needed. The Beacon Point reservoir is located at approximately 380m which means that boosting of flows will be required for elevations of the site above approximately 348m in order to meet the minimum residual pressure. The area requiring boosting is shown in Figure 2 below.

If a new storage reservoir is to be constructed then the problem of low pressures could be addressed to a certain degree by locating the reservoir at a higher elevation (approximately 410m) on the western boundary of the site as shown in Figure 2 below. The increased hydraulic head achieved by locating a reservoir at this higher point would mean that boosting would be required for elevations above approximately 378m only. This would equate to a much larger area of the total site being fed by gravity flows than that possible from the lower elevation Beacon Point reservoir.

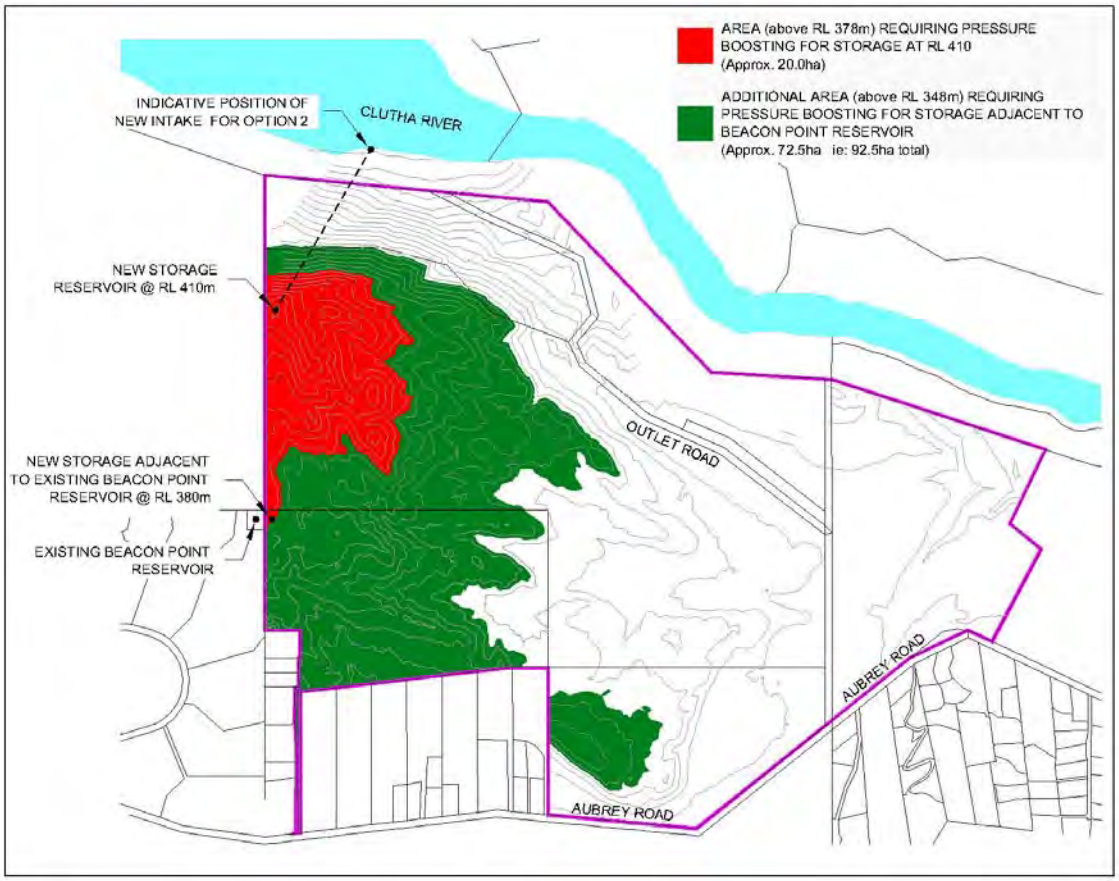


Figure 2 Map showing areas requiring boosting of water supply and indicative layout for Option 2.

It should be noted however that a pump station would be required to feed the new reservoir from the main supply if it was located at this high point. This would be in addition to the boosting pump station required for areas above 378m.

Another solution may be to construct a relatively small reservoir at the high point of RL 410m that just services the land above RL 348m and additional storage at the same level as the existing reservoir (RL 380m) is constructed to supply the remainder of the zone.

4.8 Water Supply - Option 2

The second option for providing a water supply for the development would be to construct a completely new water intake in the indicative location shown in Figure 2. In reality the intake could be at any number of locations along the river frontage of the subject site. This would mean that the North Wanaka development site would have a standalone water supply that was separate from the Wanaka area mains supply.

The basic components of such a system would include the water intake and pumps, rising main and storage reservoir as well as a water treatment system sufficient to bring the supply in line with Drinking Standards for New Zealand 2005 (Revised 2008) (DWSNZ).

The water supply storage reservoir for the development, based upon the reservoir capacity set out in Section 4.5, would be up to 3,166 m^3. The reservoir would just below located at the highest point within the development area at 410m near the site's western boundary and the water treatment facilities would either be adjoining to the reservoir site or would be sited adjacent to the intake itself. Locating the reservoir at this high point would enable much of the development to be serviced without the need of additional booster pumps. However, water supply flows for areas above 380m would still require to be boosted as shown in Figure 2 above.

As well as the physical construction issues involved with this option a number of consenting and maintenance matters would also need to be addressed. A resource consent will be required to construct the intake structure and it is likely that a further consent will be required for the water take itself as both the calculated total daily demand and the peak hourly flow exceed the permitted water take rates set out in the Otago Regional Council's Regional Plan for Water. Land use and building consents may also be required for the reservoir and water treatment facilities.

The main issue to be considered with regards to this option would be the on-going maintenance and management of the water supply and treatment system. One option would see the system vested with Council. Council may resist this because of the additional on-going costs a further intake, treatment plant and associated infrastructure would entail. Alternatively, the water supply could be owned by a lot owners association (or similar) responsible for the on-going management and maintenance of the infrastructure. A similar system to this has been used at Jacks Point near Queenstown.

4.9 Conclusions and Recommendations

Both of the two options outlined above to supply water to the subject site are feasible. Further investigation, consultation with Council and cost analysis will be necessary to establish the final methodology used.

Due to the site topography, elevated areas of the site will require boosting to provide the required pressure and flows. For Option 1 this would equate to an area up to 92.5 ha depending on reservoir location and for Option 2, 20 ha. Boosting flows in this manner is feasible and has been undertaken in other parts of Wanaka and across the QLDC district.

5. Wastewater Disposal

5.1 General

A Council reticulated sewerage scheme exists along Aubrey Road from near the Outlet Road intersection.

5.2 Demand Assessment

Peak wastewater generation is expected to coincide with peak water demand. The following design figures have been adopted:

Wastewater Generation Item	Potable Demand (litres/day)	No.	Total (litres/day)
Dwelling (average day)	1,050	1,707	1,792,350

The additional average daily wastewater generation of 1,792 m^3 per day equates to 20.74 litres per second average flow over twenty four hours.

From the QLDC amendments to *NZS4404:2004 Land Development and Subdivision Engineering*, the peaking factors for the wastewater network are as follows:

Item	Peaking Factor
Dry weather diurnal peak flow	2.5
Wet weather dilution/infiltration factor	2

Using the QLDC peaking factors, during the wet weather peak flow is estimated at 103.7 litres per second.

5.3 Council Reticulated Scheme

Hadley Consultants Ltd have previously been engaged by QLDC to carry out design and construction review for wastewater upgrades in the Aubrey Road area of Wanaka. We are fully aware of what has been allowed for in the design of the existing infrastructure and what upgrades will be required.

The Council reticulation on Aubrey Road comprises a 450mm diameter wastewater gravity main draining from near the Outlet Road intersection through to the Gunn Road intersection. From the

Aubrey Road Gunn Road intersection, there is temporary 150mm diameter pipe connecting into the Albert Town reticulation on Gunn Road.

The section of 450mm diameter main in Aubrey Road was constructed in 2008/09 and this size pipe is ultimately anticipated to be constructed all the way to the recently commissioned Project Pure Pump Station near the intersection of Aubrey Road and State Highway 6 and the connection into the Gunn Road reticulation will be removed (thereby effectively bypassing the Albert Town reticulation). This upgrade has been programmed in the most recent QLDC LTCCP (2012/22) for construction in the 2018/19 financial year. The development of the subject site will trigger the need for the extension of the 450mm diameter pipe along Aubrey Road.

Previous work has not identified how much residual capacity is available in the Albert Town reticulation. It is anticipated that the Northlake land will be developed in stages and that the Aubrey Road upgrade will not be triggered by the initial stage(s). This will need to be confirmed at the design phase for each stage of the development.

There are further measures open to the development of the Northlake land that could delay the need for the Aubrey Road upgrade. These include storing some or all of the wastewater flows and then draining these to the network in off peak times.

The Northlake development will require the proposed Aubrey Road wastewater upgrade project listed on the current LTCCP to be completed. This wastewater upgrade has been included in the contributions calculations for the Wanaka wastewater scheme and it is anticipated that Council will fund and construct this upgrade when required.

A sketch showing the existing and proposed wastewater pipe layout is below:

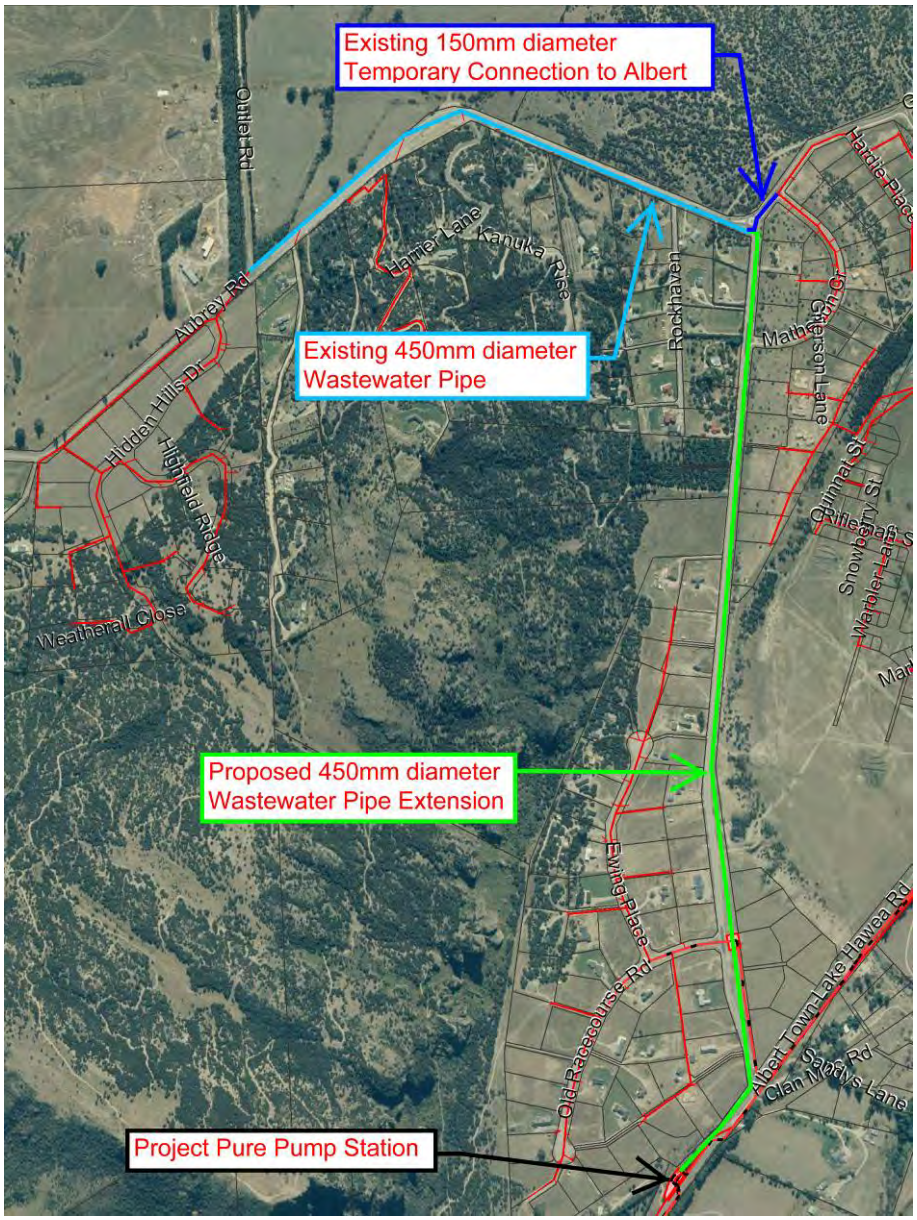


Figure 3 Existing and Proposed Wastewater Reticulation in Aubrey Road

5.4 QLDC Liaison

Discussions with Mr Gerry Essenberg (the QLDC Infrastructure Services Three Waters Manager) have been held regarding the current 1,707 residential dwelling proposal.

He has confirmed that a connection to the wastewater drainage network will be available from QLDC. He has also confirmed that there is no need for additional modelling at this time as the likely existing demand on the reticulation will change prior to the development actually occurring. The scale of the proposed development may require upgrades to Council wastewater pump stations and treatment facilities. The timing and scale of any upgrades will be dependent upon the rate of

growth across the entire Wanaka wastewater catchment and would need to be evaluated as development progressed.

QLDC have indicated that the significant capital expenditure items such as pump stations and treatment plant upgrades would be funded by Developer Contributions. In order to give QLDC as much time to plan for future infrastructure upgrades, they have requested indicative staging information for the development be supplied as soon as it is available.

Mr Essenberg has confirmed that QLDC are interested in talking with the developer about the specific reticulation connections and design at the detailed design stage so that the most cost effective solutions are developed. He anticipates that all new wastewater infrastructure will be required to be constructed to applicable QLDC standards.

5.5 Internal Reticulation

As previously stated, the site slopes generally to the east. The existing Council reticulation on Aubrey Road is on the southern side of the site. It is anticipated that much of the site will be able to be drained using standard trunk and lateral gravity pipelines.

Some areas on the northern and eastern side of the site will likely require the construction of pump stations at suitable low points to convey the wastewater flows into the existing reticulation. Provided appropriate infrastructure master planning for the site is carried out at the detailed design stage, the location of any pump stations will be able to be optimised in order to ensure least cost lifetime options are adopted.

5.6 Conclusions and Recommendations

It is recommended that the wastewater generated from the proposed development be disposed by way of connection to the QLDC reticulated scheme. The feasibility of this has been confirmed by work previously undertaken by QLDC. A significant upgrade will be required along Aubrey Road once a certain threshold of wastewater flows from the site has been reached. The Council has programmed to undertake this work, but the timing of the upgrade will depend upon the pace of development and the possible buffering of flows to off peak periods.

6. Stormwater Disposal

6.1 General

Generally, it is proposed to maintain the runoff characteristics of the existing catchment. However the proposed development on the site will alter the existing stormwater run off patterns and will serve to increase the peak flow runoff. We propose to collect and control the stormwater runoff and dispose via connection to the Clutha River or to dispose of on site using stormwater infiltration and soakage features.

Figure 4 - Stormwater runoff paths (see Appendix 3)

6.2 Planning Rules and Regulations

Rule 12.5.1.1 of the Regional Plan: Water for Otago states that the discharge of drainage water to water (or onto land where it might enter water) from any drain is a permitted activity so long as certain conditions are met. The conditions of particular relevance to the discharge of stormwater from the proposed new roads and domestic allotments are as follows:

12.5.1.1 (b) The discharge, after reasonable mixing, does not give rise to all or any of the following effects in the receiving water:

(i) The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials; or

(ii) Any conspicuous change in the colour or visual clarity; or

…

(v) Any significant adverse effects on aquatic life.

It is further stated that:

The discharge of drainage water under Rule 12.5.1.1 will have no more than minor adverse effects on the natural and human use values supported by water bodies, or on any other person. This rule is adopted to enable drainage water to be discharged while providing protection for those values and the interests of those people. Any other activity involving the discharge of drainage water is a restricted discretionary activity in order that any adverse effects can be assessed.

Contaminants associated with vehicular traffic can include oils, rubber, heavy metals and sediments. In large amounts these contaminants can greatly decrease the natural and human use values of bodies of water. As the stormwater from the site will likely be discharging either directly into the Clutha River or to ground, appropriate protections will need to be installed in the on-site drainage system in order to remove such contaminants from the stormwater. The aim of stormwater quality treatment used at the site would be to ensure that the runoff from the new development is in a similar condition to that being achieved before the development. Of particular concern are the “first flush” flows that carry the highest pollutant loadings.

Appropriate technologies to separate contaminants from the stormwater flows might include the use of mud-tanks located in the on-site drainage sumps and a vortex separator mechanism such as a Hynds Downstream Defender which provide high removal efficiencies of suspended solids and floatables over a wide range of flow rates.

Careful design of the stormwater reticulation for the site will ensure that the requirements set out in the Regional Plan: Water for Otago are met.

6.3 Stormwater Quantities

At this early stage in the development of the proposed zone, it is difficult to determine the increase in storm water runoff from the site. Initial calculations have been undertaken and these indicate that for a 10 minute rain event with an average reoccurrence interval (ARI) of 10 years the development is expected to increase the storm water flow rate by approximately 10 m^3 per

second. This will vary depending upon the density of the development and the permeability of the site.

This level of increase in runoff would result in very large infrastructure if the traditional approach of reticulating all the flows from the site was adopted. If a single point of discharge was developed, the required outlet pipe would be approximately 2.4 metres in diameter. This level of infrastructure would be expensive and can be mitigated using a Low Impact Design (LID) approach.

From NZS4404:2010 Land Development and Infrastructure:

> *Low impact design aims to use natural processes such as vegetation and soil media to provide stormwater management solutions as well as adding value to urban environments. The main principles of low impact design are reducing stormwater generation by reducing impervious areas, minimising site disturbance, and avoiding discharge of contaminants. Stormwater should be managed as close to the point of origin as possible to minimise collection and conveyance. Benefits include limiting discharges of silt, suspended solids, and other pollutants into receiving waters, and protecting and enhancing natural waterways.*

And:

> *Low impact design is a type of storm water system that aims to minimise environmental impacts by:*
> *(a) Reducing peak flow discharges by attenuation;*
> *(b) Eliminating or reducing discharges by infiltration or soakage;*
> *(c) Improving water quality by filtration;*
> *(d) Installing detention devices for beneficial reuse.*

The types of low impact devices and practices that could be included in the zone include the following:

(a) Detention Ponds;
(b) Vegetated swales;
(c) Rain gardens;
(d) Rainwater tanks;
(e) Soakage pits and soak holes;
(f) Filter strips; and
(g) Infiltration trenches/basins.

Subdivision urban design principles may also assist in mitigating runoff from the site. These include clustering development to increase open area around developed areas and decreasing road setbacks in order to decrease the likely impervious areas.

In addition to reducing the peak discharge from the site, LID approaches may also improve the quality of the runoff from the site.

It is noted that due to the local topography, the area in the southwest corner of the site drains off site and through private land. The storm water runoff solutions in this area will need to ensure that the post development runoff is no greater than the pre-existing development runoff. It is expected that the use of specific soakage and attenuation devices will be used to meet this requirement.

6.4 QLDC Liaison

Discussions with Mr Gerry Essenberg (the QLDC Infrastructure Services Three Waters Manager) have been held regarding the current 1,707 residential dwelling proposal.

He has confirmed that a combination of reticulation and low impact design approaches would be generally acceptable to QLDC.

Mr Essenberg has confirmed that QLDC are interested in talking with the developer about the specific reticulation connections and design at the detailed design stage so that the most cost effective solutions are developed. He anticipates that all new stormwater infrastructure will be required to be constructed to applicable QLDC standards.

6.5 Conclusions and Recommendations

We consider that the collection and subsequent disposal of stormwater from the proposed development is entirely feasible via collecting and controlling the stormwater runoff and disposing by draining to the Clutha River passing the site.

Dependent upon the overall design approach for the subdivision, the storm water runoff leaving the site could be greatly reduced by the introduction of low impact design approaches including the use of attenuation and filtration devices.

7. Gas Supply

Discussions have been undertaken with Rockgas. Rockgas own and operate a reticulated gas supply network in Wanaka. They have indicated that they are interested in supplying reticulated gas to the proposed development site. This would need to be progressed by negotiations between Rockgas and the developer in order to ensure suitable terms for both parties.

Supply confirmation for the gas reticulation has been provided from Rockgas and is included in Appendix 4.

8. Conclusions and Recommendations

The subject site and the proposed development have been assessed to determine the suitability for development in relation to infrastructure services. No significant constraints have been identified and the site is suitable for the proposed development from an infrastructure servicing viewpoint.

There are two options for supplying water to the site. The first option would be to utilise the QLDC reticulated water supply. This would require the construction of additional water storage which could be achieved either in conjunction with the QLDC (subject to agreement) or as a standalone reservoir on the subject land. In addition, the necessity for reticulation to the higher elevations of the site would require the construction of a water supply boosting pump station. The second option would be to install a new, private water intake with the reservoir located at the highest point on the subject land. As with Option 1, sections of the subject site would still require a water supply boosting pump station but they overall area would be smaller than that required for Option 1. The final decision on which methodology to use will be decided at a later point following further investigation, consultation and cost analysis.

Wastewater drainage reticulation from the site will be able to be initially catered for with the existing QLDC reticulation. Later stages will require construction of a planned Council upgrade along Aubrey Road (between Gunn Road and the Project Pure Pump Station). The majority of the site will be able to be reticulated by the construction of gravity sewer pipes. However, it is anticipated that parts of the development site will require pump stations in order to convey flows to the existing QLDC infrastructure.

Stormwater runoff from the site can be satisfactorily disposed of by the construction of necessary reticulation with disposal to Clutha River. It is recommended that in order to reduce the peak runoff and to improve runoff quality, low impact design approaches are adopted.

The gas supply company Rockgas has confirmed that they are interested in reticulating the proposed development with an underground gas supply connected to their existing Wanaka reticulation network.

Overall, we confirm that there are no significant impediments to development of the site with respect to Infrastructure Services. The need for off-site upgrades of existing QLDC infrastructure will be required for later stages of the development and it is anticipated that these upgrades are able to be constructed without any major impediment.

We recommend that the timing and scale of the proposed infrastructure upgrades be further assessed once the layout of the proposed zone has been further progressed and staging of development has been confirmed.

9. Limitations

This report has been written for the particular brief to HCL and no responsibility is accepted for the use of the report for any other purpose, or in any other context or by any third party without prior review and agreement.

Appendix 1

Tonkin and Taylor Ltd

Water Modelling Report

Tonkin & Taylor

T&T Ref: 51556.013
02 August 2010

Hadley Consultants Ltd
PO Box 1356
Queenstown 9348

Attention: John McCartney

Dear John

Results of water modelling for proposed East Wanaka development rezoning, Aubrey Road, Wanaka

Following your email received 3:59 pm 19 July 2010, and in accordance with your request and our conditions of engagement, we have run our Wanaka water supply model to check the levels of service for the proposed East Wanaka development, between Aubrey Rd and the Clutha River, Wanaka. This work was performed for Hadley Consultants Ltd as our client.

Modelling proceeded at a concept level on the basis of 800 residential lots, as per the drawings provided by you (Darby Partners Ltd drawings RS-00 & 03, titled "*East Wanaka Resource Study*", dated 22 & 28 June 2010, attached).

Development setting

The proposed development is in the Beacon Point pressure zone, supplied from the Beacon Point Reservoir via the 575 mm NB PVC falling main. The Wanaka water supply network near the proposed development is shown in Figure 1 below.

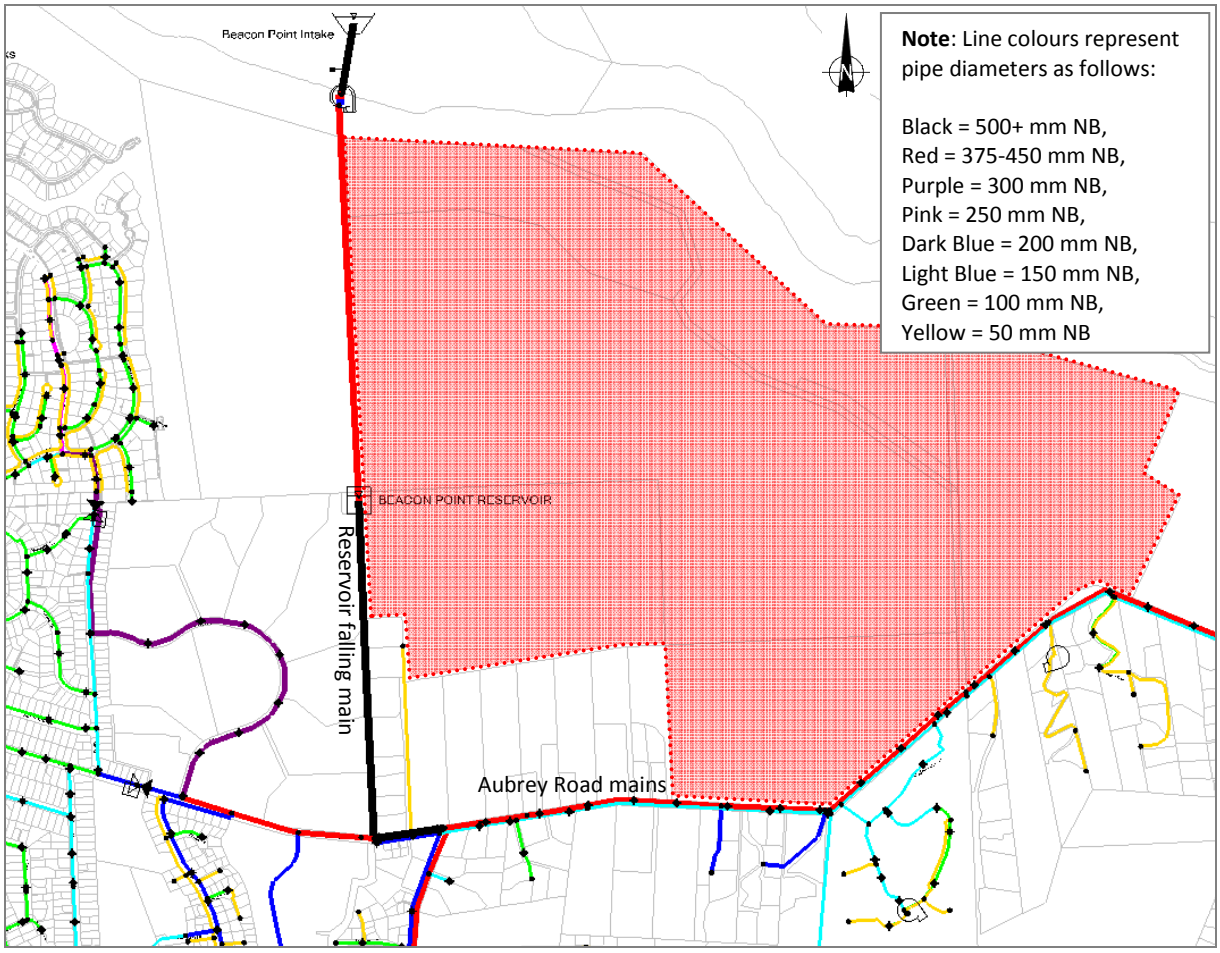


Figure 1 *Wanaka water supply network near the proposed rezoning (site outlined/shaded in red) [Not to scale]*

We understand that only that land south of the "outer growth boundary" is to be developed (see attached drawings).

Modelling methodology

The modelled demand scenarios used to determine levels of service for the Wanaka water supply network were

- **Peak day demand** - To determine whether available fire flows meet fire fighting requirements [1], and
- **Peak hour demand** - To determine whether minimum residual pressures at each connection are ≥ 300 kPa [2]

[1] Fire flow requirements are in accordance with SNZ PAS 4509:2008, "*New Zealand Fire Service Fire Fighting Water Supplies Code of Practice*".

[2] The minimum residual pressure requirement is as set out in Queenstown Lakes District Council Amendments and Modifications (2005) to NZS 4404:2004 , *"Land Development and Subdivision Engineering".*

We assumed an approximate layout of the pipe reticulation to cover most of the development area, with 150 mm and 300 mm NB PVC pipes as appropriate, as per Figure 2 below. We have also assumed hydrants at several locations throughout the development in order to gauge available fire flow.

The final proposed development, if constructed, would need to have more extensive reticulation, and more hydrants would be required. The modelling undertaken for this report is at a high-level proof of concept only.

This reticulation includes a connection to the Beacon Point Reservoir falling main at node J-98. We are uncertain at this stage whether such a connection would be practical. Alternative reticulation options are discussed in the Additional Modelling Comments section below.

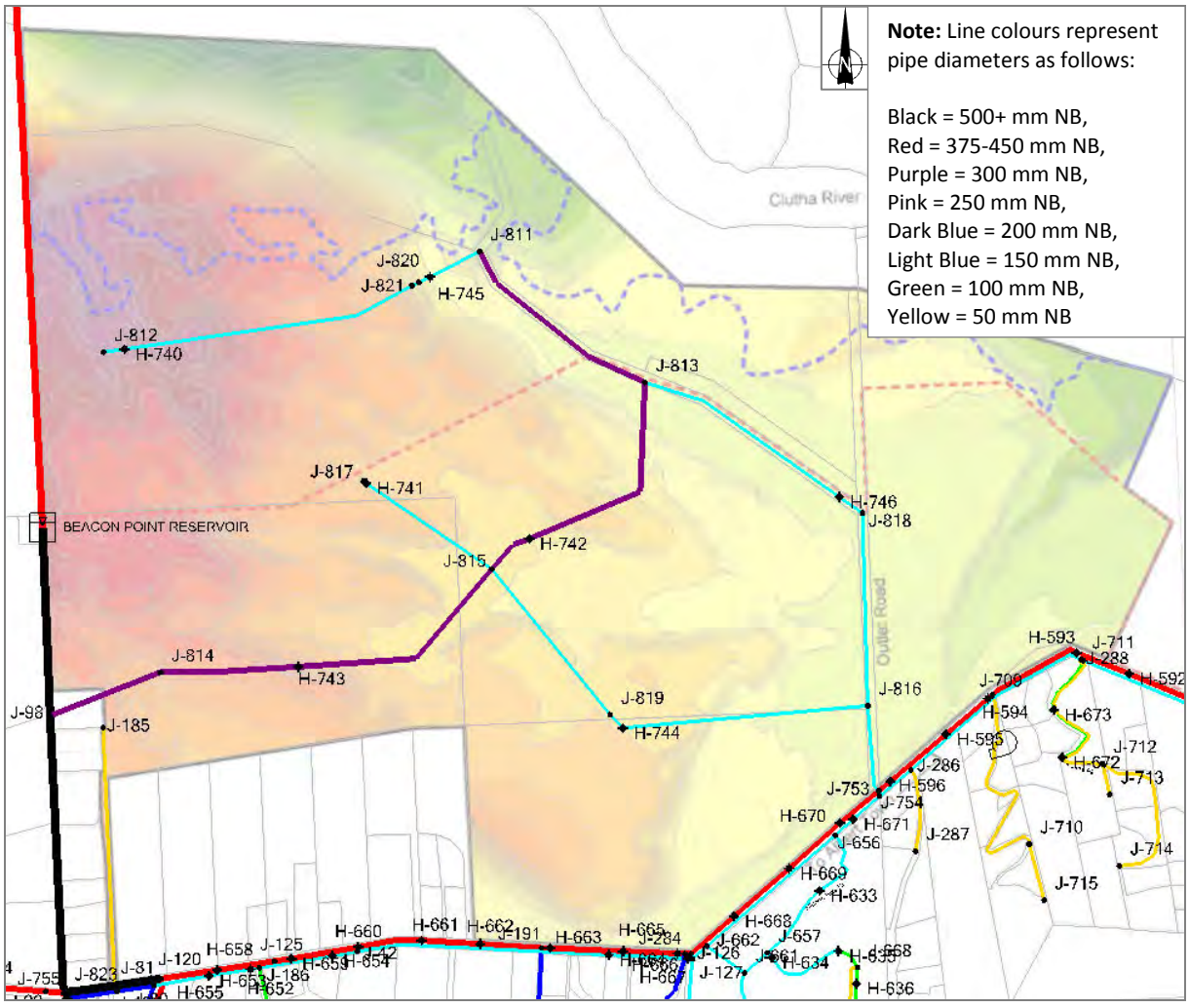


Figure 2 *Modelled reticulation layout for development [Not to scale]. The development area is shown by coloured shading: green = low elevation, red = high elevation.*

Demands

The average daily flow (ADF) demand was calculated assuming an average population of 3 people per residential dwelling and an average daily water consumption of 700 l/person.day, as per QLDC requirements. Development demands during the peak day and peak hour demand scenarios were calculated as follows:

- Peak day flow (PDF) = **3.3** x ADF
- Peak hour flow (PHF) = **6.6** x ADF

The total average daily flow (ADF) demand from the proposed 800 residential units is 1680 m^3/day, or 19.4 l/sec. This corresponds to a peak day flow (PDF) demand of 64.2 l/sec and a peak hour flow (PHF) demand of 128.3 l/sec.

We have added the above demand into our WaterGEMS dynamic network analysis model for Wanaka, last updated February 2010. Demands were entered into the model at nodes J-811 to J-819, (shown in Figure 2 above) as per the distribution in Table 1 below.

Table 1 Demand distribution throughout proposed East Wanaka development

Demand node	Proportion of demand
J-811	5%
J-812	10%
J-813	10%
J-814	10%
J-815	15%
J-816	10%
J-817	10%
J-818	15%
J-819	15%
Total	100%

Modelling results

Modelling results are presented in Table 2 below. Note that these results relate to the East Wanaka rezoning development alone with 2009 design demands, and do not include demands from other proposed developments recently modelled by Tonkin & Taylor.

Table 2 Minimum pressures and fire flow availability

Nodes assessed	Elevation (m RL amsl)	Residual pressure (kPa) (1)	Fire flow available (l/sec) (2)(3)
J-811	325	540 ≥ 300 **OK**	-
J-812	395	< 0 **Not OK**	-
J-813	328	520 ≥ 300 **OK**	-
J-814	354	300 ≥ 300 **OK**	-
J-815	341	390 ≥ 300 **OK**	-
J-816	329	500 ≥ 300 **OK**	-
J-817	350	300 ≥ 300 **OK**	-
J-818	329	490 ≥ 300 **OK**	-
J-819	344	350 ≥ 300 **OK**	-
H-740	395	-	0 ≤ 25 **Not OK**
H-741	356	-	58 ≥ 25 **OK**
H-742	340	-	200 ≥ 25 **OK**
H-743	355	-	200 ≥ 25 **OK**
H-744	345	-	99 ≥ 25 **OK**
H-745	335	-	113 ≥ 25 **OK**
H-746	329	-	127 ≥ 25 **OK**

(1) A minimum residual peak hour pressure of 300 kPa is required as per QLDC amendments to NZS 4404:2004.

(2) A total of 25 l/sec is required from within 270 m of each non-sprinklered, residential dwelling for Class FW2 fire fighting as per SNZ PAS 4509:2008.

(3) A minimum of 12.5 l/sec is required from each hydrant as per SNZ PAS 4509:2008.

Modelling shows that, during the 2009 design peak hour demand scenario, the residual pressures in the development will be less than 0 kPa (without pressure boosting). Hence, the Queenstown Lakes District Council (QLDC) requirement for minimum pressures being ≥ 300 kPa is **not met** within the proposed development. The low pressures are mainly due to high elevations within the development, and partially due to headlosses within the development.

As an approximate guide, pressure boosting would be needed at the following locations:

- Above **348 m** RL above mean sea level (amsl) in the **northwest** of the development
- Above **354 m** RL amsl in the **southwest** of the development, and
- Above **349 m** RL amsl in the **southeast** of the development.

In total, approximately **30%** of the development area would require pressure boosting.

Modelling also shows that, for approximately **80%** of the development area, a minimum of Class FW 2 fire flow **can** be achieved during the 2009 design peak day demand scenario, as required for a non-sprinklered, residential development.

The remainder of the development (near H-740) will require pressure boosting to achieve the required fire flow. Note that this area is covered by the previous requirement for pressure boosting above 348 m RL amsl in the northwest of the development.

Additional Modelling Comments

Wider network effects

Modelling indicates that the effect on fire fighting and residual pressure levels of service in the rest of the network is negligible.

Pressure boosting

A booster pump near H-745 with a design flow of 12.8 l/sec and design head of 58 m would enable land up to 405 m RL amsl in the northwest of the development (near J-812) to achieve 300 kPa. Note that the design head is quite sensitive to the demand flow through the booster station.

The area to the southeast of the development that does not meet residual pressure requirements is only a small area. It is possible that it could be supplied via a separate boosted connection to the Aubrey Road 375 mm NB PVC main. We have not modelled such a connection.

Alternative connection reticulation

Should connection directly to the Beacon Point falling main not be possible, we recommend a connection to the Aubrey Road main at J-823, running up Peak View Ridge to connect at node J-814. This reticulation would result in additional headlosses, for which modelling indicates that residual pressures would reduce by approximately 30 to 40 kPa throughout the development. Approximately 40% of the development area would require pressure boosting.

We have also considered connection at Outlet Road only (using 300 mm and 150 mm sizes in different locations to those assumed previously). Modelling indicates that the additional headlosses along Aubrey Road under this reticulation would reduce minimum residual pressures by 60 to 90 kPa, meaning approximately 50 to 60% of the development area would require pressure boosting.

Where FW2 fire flow is available in the connection scenario of Table 2, FW2 fire flow is still available under the two different connection scenarios mentioned above.

Reservoir storage

We have also checked the reservoir storage capability of the Beacon Point Reservoir. The existing storage capacity under the 2009 design demands is already below recommended storage guidelines set out in a report by MWH[3]. Connection of this development would mean that reservoir storage issues at Beacon Point should be carefully considered by QLDC. Parts of the Beacon Point pressure zone may be supplied from a new reservoir (namely the Hawthenden Reservoir) in the future, which would also affect the storage requirements at Beacon Point.

[3] MWH New Zealand Ltd, *"Queenstown Lakes District Council – Strategic Water Review",* February 2006.

Applicability and Closure

The model is a numerical representation of the physical reality, and subsequently bears some uncertainty. The demands and peaking factors used are based on assumptions regarding the patterns of water use in the township, and are an approximation of the physical reality. Hence, actual demands within the network may differ from those modelled.

This report has been prepared for the benefit of Hadley Consultants Ltd with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose without our prior review and agreement.

In addition, the modelling results presented in this report show the available levels of service for the **current** Wanaka network, based on the **2009 design demands**, and are not a guarantee of available levels of service in the future.

Finally, this modelling report has considered the development at a high level only. Once development layout is confirmed, additional modelling with more detailed reticulation will be required to confirm levels of service and pumping demands.

We trust this modelling report meets your requirements. Please contact Dominic Fletcher (dfletcher@tonkin.co.nz) on 03 363 2472 if you wish to discuss these results or any other aspect of this modelling report.

Yours sincerely,

TONKIN & TAYLOR LTD

Grant Lovell
CHRISTCURCH GROUP MANAGER

Report prepared by:
Pieter Vanderpoel
CIVIL ENGINEER

Technical review by:
Dominic Fletcher
T&T PROJECT MANAGER

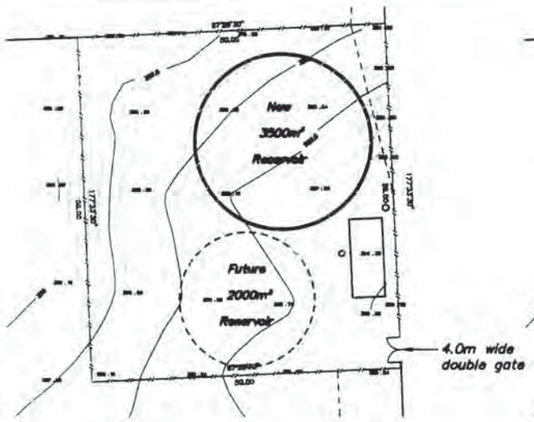
Attachments:

- Darby Partners Ltd drawings RS-00 & 03, titled "*East Wanaka Resource Study*", dated 22 & 28 June 2010.

2-Aug-10
p:\51556\51556.013\workingmaterial\2010-07-30.pav.ltr.water modelling results.doc

Appendix 2

Beacon Point Reservoir Site Plan



FENCING LAYOUT PLAN
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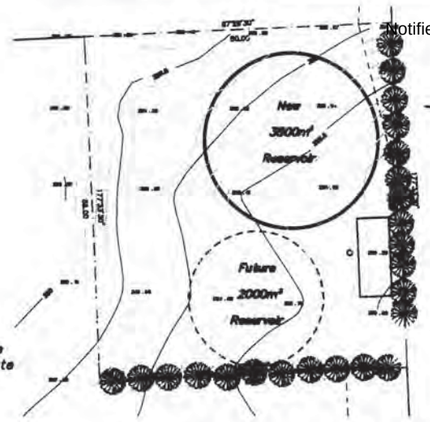
1:1000 at A3



PLANTING LAYOUT PLAN
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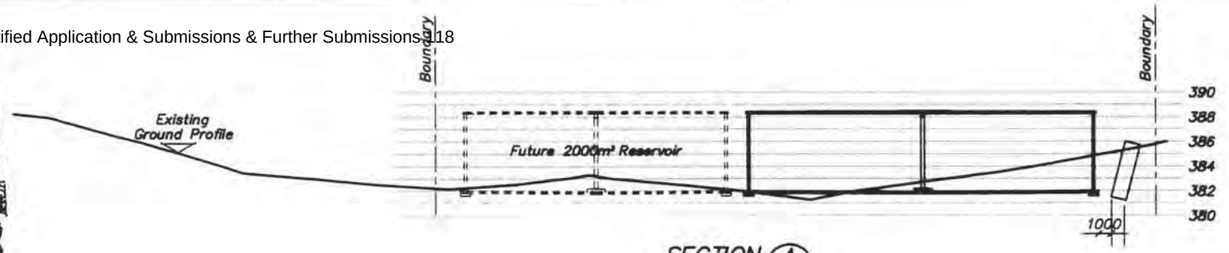
1:1000 at A3



SECTION A
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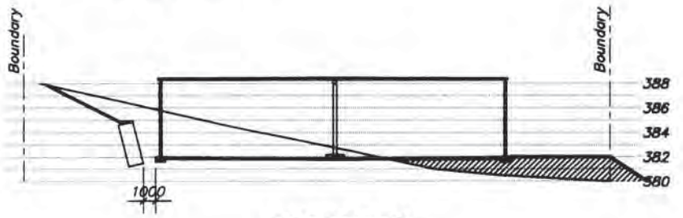
1:500 at A3



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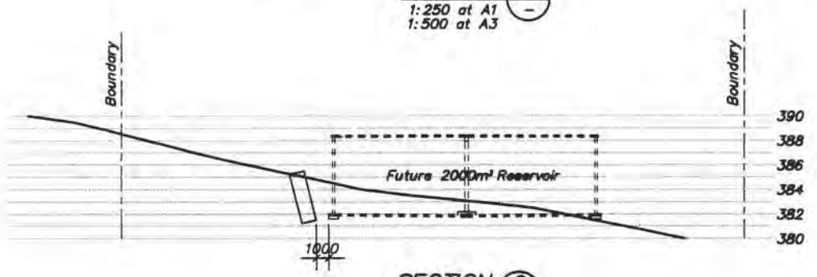

SECTION C
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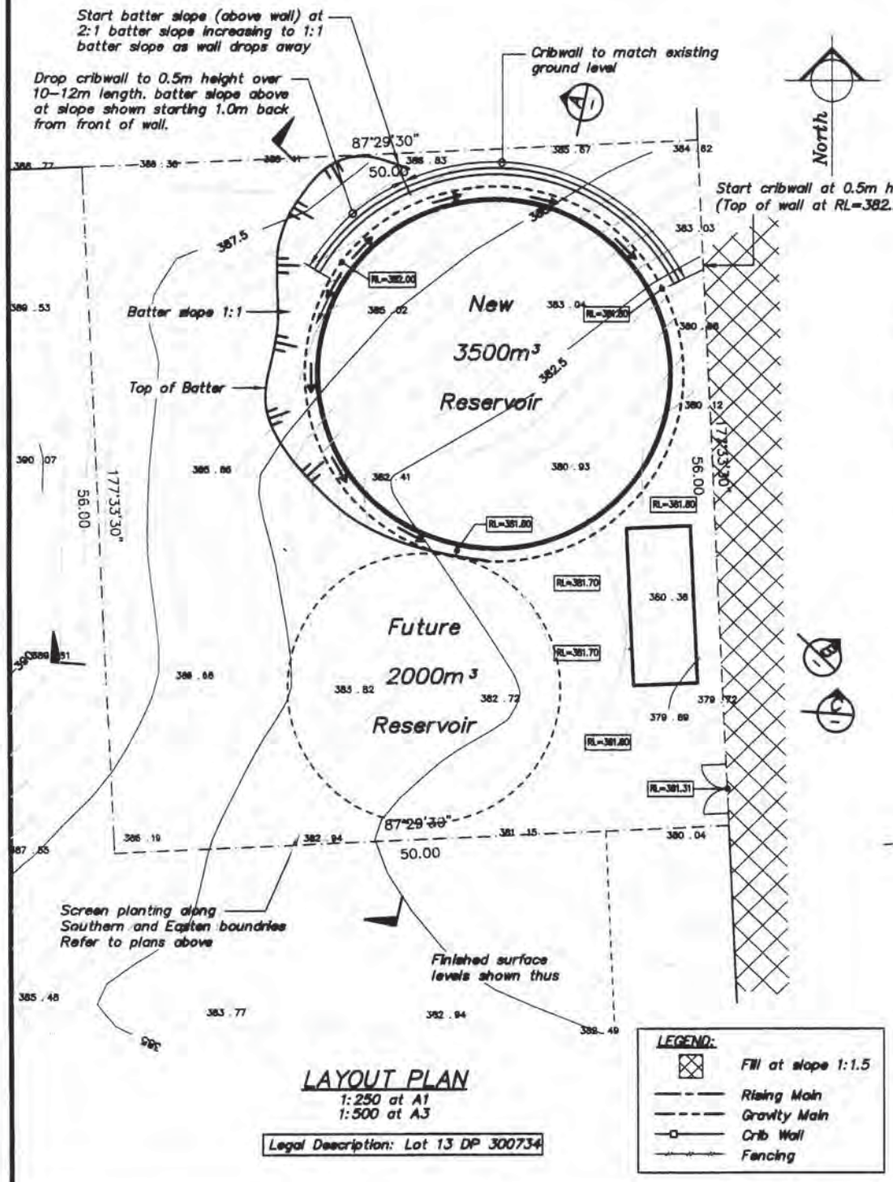
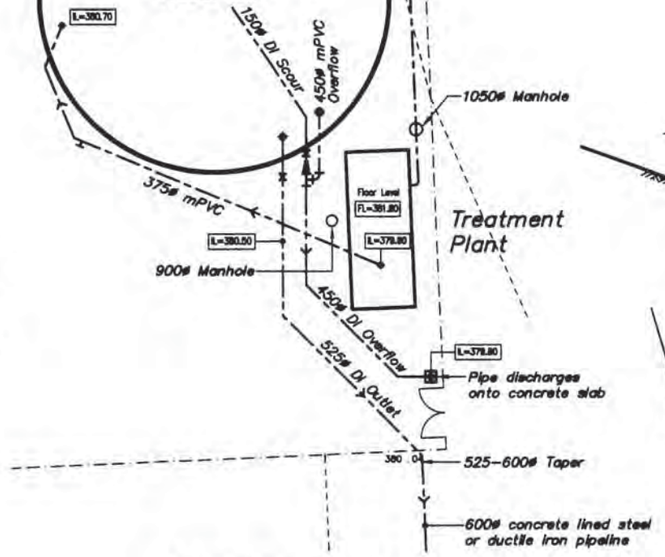


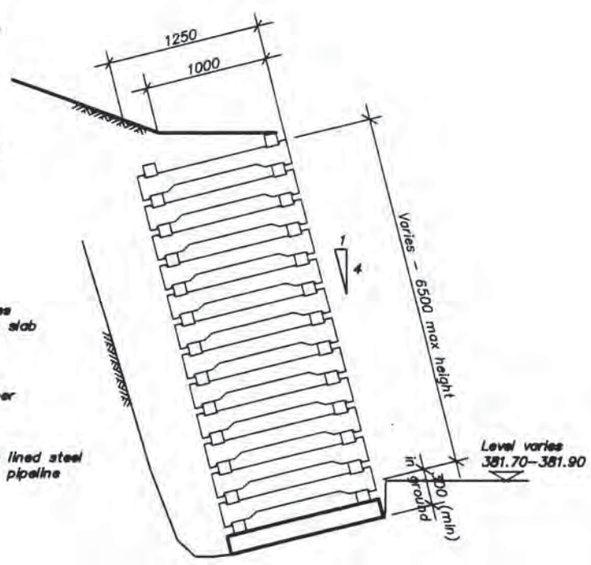
LAYOUT PLAN
1:250 at A1
1:500 at A3

Legal Description: Lot 13 DP 300734

LEGEND:
- Fill at slope 1:1.5
- Rising Main
- Gravity Main
- Crib Wall
- Fencing



PIPELINE LAYOUT PLAN
1:250 at A1
1:500 at A3



TYPICAL CRIB WALL SECTION
1:25 at A1
1:50 at A3
1200 SERIES CRIB WALL

A	As-Built		23/04
No.	Revisions		Date Apprvd
Designed	A.Steel	Date 4/03	Print Date
Drawn	J.Knox	Apr'03	
Checked			
Approved			
File		Ref cRES--L1	

Client: Queenstown Lakes District Council

Project: CONTRACT No 417
WANAKA WATER SUPPLY BEACON POINT SYSTEM

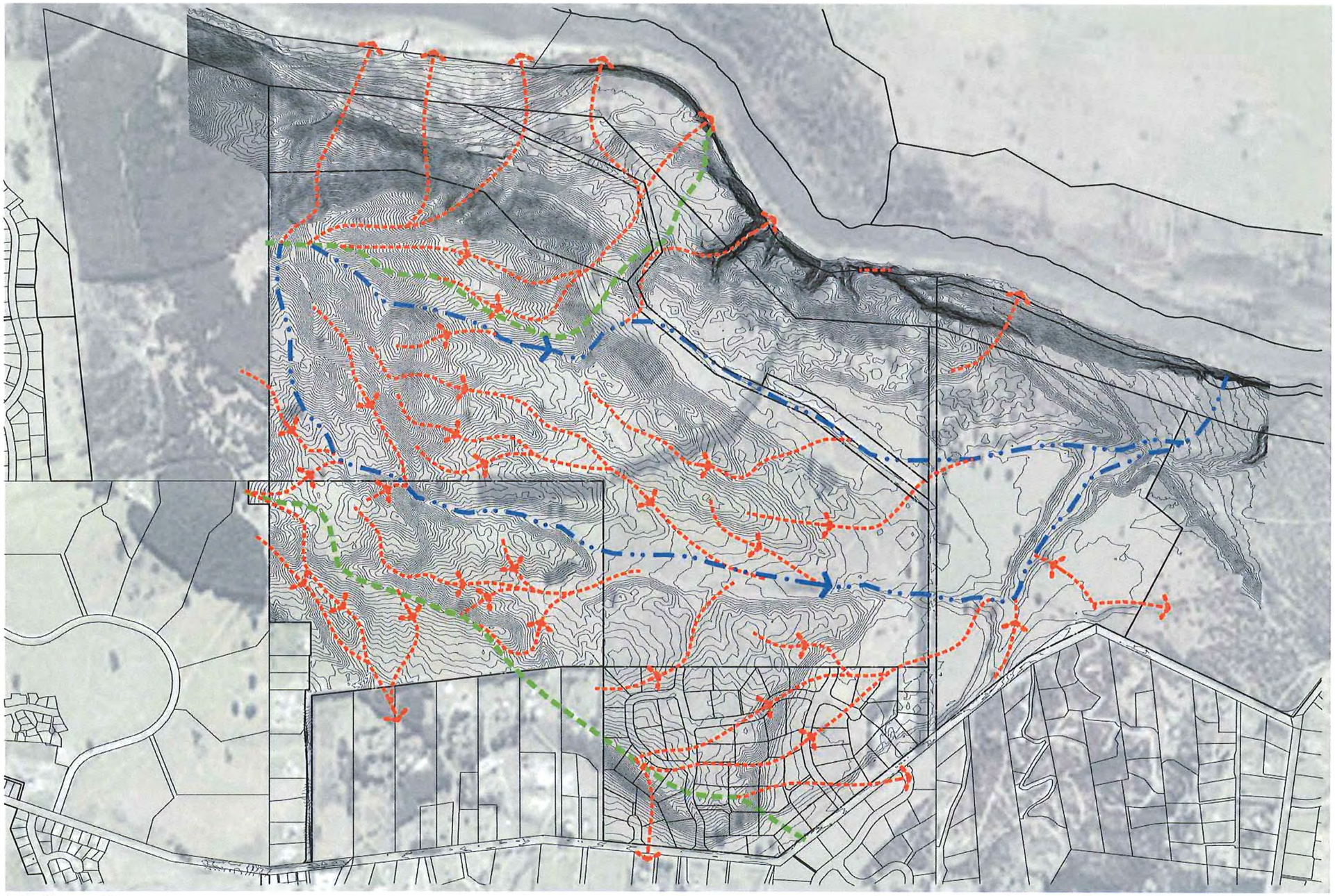
Sheet Title: NEW RESERVOIR SITE LAYOUT PLAN AND TYPICAL SECTIONS

Job No.	Sheet No.	Revision
57388	R1 of white	A

Duffill Watts King ltd

Appendix 3

Stormwater Runoff Paths



+ NORTHLAKE
HYDROLOGY
REFERENCE : 1788-G SCALE 1:10000 AT A3 FEB 2013

Plan detail adapted from Darby Partners Ltd plan ref. RS-004 rev C

FIGURE G

baxter design group

Appendix 4

Gas Reticulation Confirmation

John McCartney

From: John McCartney
Sent: Monday, 2 August 2010 12:01 p.m.
To: John McCartney
Subject: FW: North Wanaka Special Zone reticulation
Attachments: image001.jpg; image001.gif; image002.jpg

Sent: Friday, 30 July 2010 3:28 p.m.
To: John McCartney
Subject: FW: North Wanaka Special Zone reticulation

From: Stuart Brown [mailto:Stuart.Brown@contactenergy.co.nz]
Sent: Friday, 30 July 2010 3:17 p.m.
To: Laura Shadbolt
Subject: RE: North Wanaka Special Zone reticulation

Hi Laura

Just to confirm our conversation from Wednesday, We have reticulated gas in Aubrey Rd and Rata St. This is a 200 mm main suppling L.P.G. Vapour @ 70 KPa . This is adjacent to the Koromiko Block in Rata St, runs down Aubrey Rd then up Kings Drive.

Contact / Rockgas would look at extending this main to supply this area subject to securing a sustainable load and meeting supply criteria.

Please contact me directly with any further Questions.

Kindest Regards

Stu Brown
Project Engineer LPG
Queenstown

DDI: 64-03 441 8490 • **Mobile:** 64-027 459 2931
Phone: 64-03 442 9979 • Fax: 64-03 442 9987
119 Gorge Rd.QUEENSTOWN 9348.
PO Box 215
New Zealand • www.contactenergy.co.nz

From: Laura Shadbolt
Sent: Tuesday, 27 July 2010 5:27 p.m.
To: 'stuart.brown@contactenergy.co.nz'
Subject: North Wanaka Special Zone reticulation

Hi Stuart,

I've attached a drawing of the area concerned, just to confirm that we're on the same page! Very early stages, but indicative road locations are shown by the heavy black line.

If you could, a letter from Rockgas confirming the feasibility of connecting supply, and willingness to put forward a proposal at the appropriate time would be very helpful.

Thanks Stuart,

Laura Shadbolt
Civil Engineer

PO Box 1356
44 Robins Road
Queenstown 9348

Phone: 64-3-450 2140
Fax: 64-3-441 3513
Mobile: 021 1321376
Email: laura@hadleys.co.nz
Web: www.hadleys.co.nz

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Northlake Wanaka

SUBDIVISION INFRASTRUCTURE REPORT

PROJECT:	**Northlake Wanaka Stages 1 - 3**
PRINCIPAL:	**Northlake Investments Limited**
OUR REF:	**W4481-7**
DATE:	**23 May 2016**

DUNEDIN: P.O. Box 5933, Dunedin 9058. T 03 477 3245
CHRISTCHURCH: P.O. Box 160094, Christchurch 8441. T 03 928 1533
ALEXANDRA: P.O. Box 103, Alexandra 9340. T 03 448 8775
CROMWELL: P.O. Box 84, Cromwell 9342. T 03 445 1826
QUEENSTOWN: P.O. Box 2645, Queenstown 9349. T 03 441 4715
WANAKA: P.O. Box 283, Wanaka 9305. T 03 443 0110

REVISION / APPROVAL PANEL

Rev:	Date:	Prepared By:	Reviewed By:	Comments:
0	13/05/16	MJB	AGT	Original issue
1	02/06/16	MJB	AGT	Consent application issue

CONTENTS

1. SCOPE

This report covers the availability of the following infrastructure elements and is intended to accompany a resource consent application for Subdivision Consent for Stages 1 – 3 of Northlake Investments Limited development of Northlake, Wanaka.

- Earthworks
- Roading Design Statement
- Roading Design Parameters
- Wastewater
- Water Supply
- Network Utility Services (electricity and telecommunications)

Stormwater, landscaping and geotechnical are covered by separate consultant reports.

2. PROPOSED INFRASTRUCTURE

All infrastructure for the Northlake development has been designed in accordance with Councils Land Development Code of Practice (LDCP)

The following information is contained in Appendices A – I;

Appendix A: Roading Hierarchy Plans & Typical Cross Sections
Appendix B: Table 3.2 Road Classification Table
Appendix C: Aubrey Road/Outlet Road Concept Intersection Layout
Appendix D: Waste Water Overview Plan
Appendix E: Waste Water Catchment Plan
Appendix F: Waste Water Internal Reticulation Plan
Appendix G: Water Supply Internal Reticulation Plan
Appendix H: Electricity Supply Confirmation
Appendix I: Telecommunications Supply Confirmation

2.1 Earthworks

RM160186 granted consent for bulk earthworks across Stages 1 – 7 of the Northlake ODP area. Consent was granted for bulk earthworks of 297,858m³ over an area of 20.4ha. The bulk earthworks covers the formation of roading to subgrade, the levelling and contouring of residential allotments, and the topsoiling of road berms, reserve areas and allotments.

2.2 Road Design Statement

2.2.1 Scope of Roading Design Statement

The intention of this roading design statement is to outline to Council details of the proposed roading network for the Northlake Development as a whole and in doing so give context to the stage 1-3 application for subdivision consent.

This roading design statement covers all aspects of the proposed roading design as required by Section 3.2.6 of QLDC LDCP. This includes:

(a) Road dimensions and layout
(b) Place and link functions
(c) Connectivity
(d) How target operating speeds have been achieved
(e) How LID principles have been considered for stormwater run-off from the roads

2.2.2 Roading Dimensions & Layout

The road layout for the Northlake development is shown on the plans contained in **Appendix A.** The roading layout has been governed primarily by the location of existing road connections i.e. Outlet Road, Northburn Road and Mount Linton Avenue and the requirements of the Northlake structure plan.

Road dimensions have been based initially on the minimum requirements outlined in Table 3.2 QLDC LDCP and then modified to suit the functional and aesthetic goals of the proposed development. Refer **Appendix B** for our modified table 3.2.

The proposed roads have a movement lane widths of either 2 x 4.2m, 5.5 – 5.7m or 2.75 – 3.0m. The reasons for these width options is as follows;

1. Road Type A
Road Type A on the roading hierarchy plan corresponds to an E13 type road in table 3.2 of QLDC LDCP. This is classed as a collector road.

This features movement lanes of 2 x 4.2m width, recessed parallel car parking with a dimensions of 2.5m x 6.0m parking bays, footpaths on both sides with a width of 2m.

An added feature is proposed within Road type A includes a central planting island and a large swale providing the primary stormwater conveyance down the middle of the site.

Road type A is contained within a 30m legal width to provide sufficient room to accommodate the swale, central planting Island, the 2m wide footpaths, recessed parking, the movement lane, landscaping and services.

2. Road Type AA
Road Type AA on the roading hierarchy plan corresponds to an E13 type road in table 3.2 of QLDC LDCP. This is classed as a collector road.

This features movement lane widths of 2 x 4.2m, recessed parallel car parking with a dimensions of 2.5m x 6.0m parking bays, footpaths on both sides with a width of 2m.

An added features proposed within Road type AA includes a central planting island. This road type does not include the large swale. Road type AA is contained within a 20m legal width to provide sufficient room to accommodate the central planting island, the 2m wide footpaths, recessed parking, the movement lane, landscaping and services.

3. Road Type B – 20m Width
Road Type B – 20m width on the roading hierarchy plan corresponds to an E12 type road in table 3.2 of QLDC LDCP. This is classed as a local road.

This features a movement lane width of 5.7m, recessed parallel car parking with a dimensions of 2.5m x 6.0m parking bays, footpaths on both sides with a minimum width of 1.5m.

Footpaths will be provided on both side where the road is servicing 20 or more dwellings or is longer than 100m in length. Recessed car parking will be provided where the road is servicing more than 100 dwellings.

Road Type B – 20m Width is contained within a 20m legal width to provide sufficient room to accommodate the 1.5m wide footpaths on both sides, recessed parking, the movement lane, landscaping and services.

4. Road Type B – 15m Width
Road Type B – 15m width on the roading hierarchy plan corresponds to an E12 type road in table 3.2 of QLDC LDCP. This is classed as a local road.

This features a movement lane width of 5.7m, car parking is shared in movement lane, footpaths on one or both sides with a minimum width of 1.5m.

Footpaths will be provided on both sides where the road is servicing 20 or more dwellings or is longer than 100m in length.

Road Type B – 15m Width is contained within a minimum 15m legal width to provide sufficient room to accommodate the 1.5m wide footpaths, recessed parking, the movement lane, landscaping and services.

A 5.7m movement lane width provides for the ability to park on one side of the road and one through lane or alternatively two through lanes. Neither option will be delineated but rather this will be left for road users to decide.

5. Road Type C
Road Type C on the roading hierarchy plan corresponds to an E11 type road in table 3.2 of QLDC LDCP. This is classed as a lane.

This features a movement lane width of 5.7m, car parking is shared in the movement lane, footpaths on one side with a minimum width of 1.5m.

Road Type C is contained within a minimum 12m legal width to provide sufficient room to accommodate the 1.5m wide footpath, the movement lane, landscaping and services.

6. Road Type D
Road Type D on the roading hierarchy plan corresponds to an E11 type road in table 3.2 of QLDC LDCP. This is classed as a lane.

This features a movement lane width of 5.7m, car parking is shared in the movement lane, and pedestrian access is shared within the movement lane.

Road Type D is contained within a minimum 10m legal width to provide sufficient room to accommodate the movement lane, landscaping and services.

7. Road Type - Access
Road Type Access corresponds to an E9 or E10 road in table 3.2 of QLDC LDCP. This is classed as a lane and will be either private or public depending on the number of lots serviced.

This features a movement lane width of 3.0m, allows for passing every 50m, and pedestrian access is shared within the movement lane.

Road Type Access is contained within a width of 6m to 10m legal width to provide sufficient room to accommodate the movement lane, landscaping and services.

8. Road Type – Semi Rural
Road Type Semi Rural corresponds to an E8 road in table 3.2 of QLDC LDCP. This is classed as a collector road.

This features a movement lane of 5.7m width, sealed shoulders with a water table drain. Pedestrians are catered for by a 2m wide gravel, timber edge footpath along one side.

Road Type Semi Rural is contained within a 20m legal width.

2.2.3 Place and Link Functions

Section 3.2.4 QLDC LDCP states that "the two fundamental roles of a road are to provide a space for interaction between people for a range of purposes and access to land so that movement between places can occur".

The following two sections discuss the proposed design in terms of both 'place context' and 'link context'

Place Context
Place context is defined for both the specific land use served and the broader area type in which it is located. The land use characteristic is defined according to the description of predominant activities in individual areas. QLDC LDCP uses the descriptions "live, play, shop, work and learn, in addition to activities associated with growing, manufacturing and transporting of goods and products".

Using Table 3.1 from QLDC LDCP, we have categorised the development area as:

(a) Land use: **live and play**
(b) Area type: **suburban**

The live and play land use is defined as "homes, home based businesses, and mixed use developments with residential uses, as well as parks and low impact recreation". The proposed use of the development is for residential homes, local purpose and/or recreation reserves, walkway linkages and stormwater reserves and is consistent with the live and play land use.

The suburban area type is defined as "low and moderate density housing up to 15 units per hectare in an area where housing is the exclusive or dominant use". The first three stages proposed development site is approximately 11.888ha and will contain approximately 108 houses once fully developed thus yielding a dwelling unit density of 8.7 units per hectare. Residential housing will be the predominant land use allowing for the fact that there will likely be a few home based businesses established.

The 'urban' area type anticipates much a higher residential density (50 units per hectare) plus the inclusion of other land uses and is therefore not an appropriate category for the subject site. Similarly, the 'rural' area type is not appropriate because this is intended for a residential population outside of the urban limits.

Table 3.1 explains the transport context for the suburban area type as private vehicles being the predominant form of transport with public transport providing for peak flow on arterial and connector/collector roads. It further explains that non-motorised trips are primarily recreational and occur on local roads. Whilst the public transport component of this explanation is not currently applicable in the Wanaka context and private vehicles will be the predominant form of transport for the next few years, it is anticipated that public transport will be in place at some time in the future. With this in mind it would appear logical that bus stops could be situated on the Type A and Type B roads by converting some of the recessed parking into a suitable bus stop or by constructing a suitable bus stop at the appropriate time in the future by removal of street landscaping as required.

Link Context

Link context is classified by the extent of access and the degree of through movement intended to be served. This standard includes three levels of link context;

(a) Lane: a road that provides very high local access and very limited through movement connectivity. Very low vehicle speeds with shared pedestrian and vehicle access predominate;
(b) Local road: A road that provides access and connectivity for a local area. Low vehicle speeds, pedestrian and local amenity values predominate;
(c) Connector/collector road: A road that provides circulation in local areas and links to arterial roads, while balancing this with pedestrian and local amenity values. Higher vehicle and access for all modes of transport including public transport predominate.

The proposed road classification table contained in **Appendix B** contains columns that detail which of the above classification options has been assigned to each of the proposed roads.

2.2.4 Connectivity

Section 3.2.5 of QLDC LDCP states that well connected networks (roads and other links) are achieved with smaller block sizes and regular connections. Network connectivity shall be designed to achieve:

(a) Shorter travel distances;
(b) An increased number of alternative routes for all types of users;
(c) Increased opportunity for interaction;
(d) Improved access to public transport, cycling and walking networks, and access to destinations.

The proposed roading layout provides considerable options for route choice by utilising all connection points to existing roads.

The proposed roading layout linkage points and connectivity is consistent with the routes shown in the Wanaka Transportation and Parking Strategy 2008 and Wanaka Structure Plan 2007

Access to public transport has been mentioned earlier in this report.

2.2.5 Target Operating Speeds

Section 3.3.5 of QLDC LDCP states that traffic management shall be included in the road design to ensure that the target operating speeds are achieved. Target operating speed can be managed by physical and psychological devices such as narrowed movement lanes, reduced forward visibility, slow points, build outs, lengths, chicanes, planting and landscaping and street furniture and art works. The two key geometric factors that contribute to achieving the target operating speed are carriageway width and forward visibility.

The proposed carriageway widths are consistent with the requirements of QLDC LDCP in order to provide a suitable number of through lanes as well as making provision for car-parking and passing manoeuvres.

2.2.6 LID Principles for Stormwater Runoff from Roads

It is proposed to direct all stormwater runoff from roads to the roadside kerb and channel which will in turn discharge into mudtanks and an underground piped network. Ultimately all stormwater runoff from the roads will be piped to various stormwater reserves located across the site where the runoff will be detained so as to balance pre and post flows.

The design of the stormwater reserves is discussed in a separate report prepared by Riley Consultants. In summary the design is considered to be 'low impact' since all stormwater will be attenuated to pre-development flows.

Other LID options such as road side swales have been discounted due to the density of housing and the resulting number of vehicle crossing which would limit the effectiveness of any roadside swales, the maintenance requirements of these options (and degradation of visual appeal if maintenance is not undertaken.

2.3 Roading Design Parameters

Typical cross sections for all proposed roads are shown on the roading hierarchy plans contained in **Appendix A.**

The road design parameters proposed are as follows: (refer also the proposed road classification Table 3.2 contained in **Appendix B)**

2.3.1 Road 1

Feature	Design Features	Reason for Departure if any
Road No	1	
Cross Section Ref	E13	
Our Road Type	Type AA	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	Up to 800du	
Target operating speed	50km/h	
Legal road width	20m	

Pedestrians	A footpath will be constructed on both sides of the road 2.0m wide	
Passing, parking, loading and shoulder	Recessed parking	
Cyclists	Shared in movement lane	
Movement lane width	2 x 4.2	
Classification	Connector Road (~8000 vpd)	
Turning Head	Not Required	

2.3.2 Rd 2 up to intersection with Rd3

Feature	Design Features	Reason for Departure if any
Road No	Rd 2 up to intersection with Rd3	
Cross Section Ref	E12	
Our Road Type	Type B – 20m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 200 du	
Target operating speed	40km/h	
Legal road width	20m	Wider than minimum of 15m
Pedestrians	1.5m each side	
Passing, parking, loading and shoulder	Recessed parking	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Local road (~2000 vpd)	
Turning Head	Not Required	

2.3.3 Rd 2 along Lot 1008 western bdy

Feature	Design Features	Reason for Departure if any
Road No	Rd 2 along Lot 1008 western bdy	
Cross Section Ref	E15	
Our Road Type	Type B – 20m	
Area	Suburban	
Local attributes	Access to trade, office and education	
Locality served	Suburban village, access to office and education, 1 - 200 lots	
Target operating speed	40km/h	
Legal road width	20m	Wider than minimum of 18m
Pedestrians	2.0m each side	Less than 3.0m width each side as considered area will be a low demand shop & trade area

Passing, parking, loading and shoulder	Recessed parking	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Local road (~2000 vpd)	
Turning Head	Not Required	

2.3.4 Road 3

Feature	Design Features	Reason for Departure if any
Road No	3	
Cross Section Ref	E12	
Our Road Type	Type B – 15m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 200 du	
Target operating speed	40km/h	
Legal road width	15m	Slight width reduction at Lot 27 to 14.7m.
Pedestrians	1.5m each side	
Passing, parking, loading and shoulder	No recessed parking as under 100du	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Local road (~2000 vpd)	
Turning Head	Not Required	

2.3.5 Road 4

Feature	Design Features	Reason for Departure if any
Road No	4	
Cross Section Ref	E12	
Our Road Type	Type B – 20m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 200 du	
Target operating speed	40km/h	
Legal road width	20m	Wider than minimum of 15m to provide room for recessed parking
Pedestrians	1.5m each side	
Passing, parking, loading and shoulder	recessed parking as considered a through road servicing more than 100du	

Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Local road (~2000 vpd)	
Turning Head	Not Required	

2.3.6 Road 5

Feature	Design Features	Reason for Departure if any
Road No	5	
Cross Section Ref	E12	
Our Road Type	Type B – 20m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 200 du	
Target operating speed	40km/h	
Legal road width	20m	Wider than minimum of 15m to provide room for recessed parking
Pedestrians	1.5m each side	
Passing, parking, loading and shoulder	Recessed parking as considered a through road servicing more than 100du	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Local road (~2000 vpd)	
Turning Head	Not Required	

2.3.7 Road 6

Feature	Design Features	Reason for Departure if any
Road No	6	
Cross Section Ref	E12	
Our Road Type	Type B – 15m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 200 du	
Target operating speed	40km/h	
Legal road width	15m	
Pedestrians	1.5m one side	
Passing, parking, loading and shoulder	No recessed parking as under 100du	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	

Classification	Local road (~2000 vpd)	
Turning Head	Not Required	

2.3.8 Road 7

Feature	Design Features	Reason for Departure if any
Road No	7	
Cross Section Ref	E11	
Our Road Type	Type C	
Area	Suburban	
Local attributes	Access to houses/ townhouses	
Locality served	1 to 20 du	
Target operating speed	20km/h	
Legal road width	12m	Wider than minimum of 9m to allow for footpath 7 landscaping
Pedestrians	1.5m one side	Provision of footpath rather than shared in movement lane
Passing, parking, loading and shoulder	Shared in movement lane	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Local road (~2000 vpd)	
Turning Head	Not Required	

2.3.9 Road 8

Feature	Design Features	Reason for Departure if any
Road No	8	
Cross Section Ref	E12	
Our Road Type	Type B – 15m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 200 du	
Target operating speed	40km/h	
Legal road width	15m	
Pedestrians	1.5m one side	
Passing, parking, loading and shoulder	Shared in movement lane	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Local road (~2000 vpd)	
Turning Head	Not Required	

2.3.10 Road 9

Feature	Design Features	Reason for Departure if any
Road No	9	
Cross Section Ref	E12	
Our Road Type	Type B – 20m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 200 du	
Target operating speed	40km/h	
Legal road width	20m	
Pedestrians	1.5m each side	Wider than minimum of 15m to provide room for recessed parking
Passing, parking, loading and shoulder	Recessed parking as considered a through road servicing more than 100du	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Local road (~2000 vpd)	
Turning Head	Not Required	

2.3.11 Road 10

Feature	Design Features	Reason for Departure if any
Road No	10	
Cross Section Ref	E11	
Our Road Type	Type C	
Area	Suburban	
Local attributes	Access to houses/ townhouses	
Locality served	1 to 20 du	
Target operating speed	20km/h	
Legal road width	12m	Wider than minimum of 9m to allow for footpath 7 landscaping
Pedestrians	1.5m one side	Provision of footpath rather than shared in movement lane
Passing, parking, loading and shoulder	Shared in movement lane	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Local road (~2000 vpd)	
Turning Head	T Shaped as per LDCP Figure3.4	

2.3.12 Access 1

Feature	Design Features	Reason for Departure if any
Road No	Access 1	
Cross Section Ref	E10	
Our Road Type	Type - Access	
Area	Suburban	
Local attributes	Side or rear service access	
Locality served	1 to 20 du	
Target operating speed	10km/h	
Legal road width	6m	
Pedestrians	Shared in movement lane	
Passing, parking, loading and shoulder	No passing as less than 50m and low traffic volume from 2 Lots	
Cyclists	Shared in movement lane	
Movement lane width	3.0m	
Classification	Lane (≈ 200vpd)	
Turning Head	Not required	

2.3.13 Access 2

Feature	Design Features	Reason for Departure if any
Road No	Access 2	
Cross Section Ref	E9	
Our Road Type	Type - Access	
Area	Suburban	
Local attributes	Access to houses/ townhouses	
Locality served	1 to 3 du	
Target operating speed	10km/h	
Legal road width	6m	
Pedestrians	Shared in movement lane	
Passing, parking, loading and shoulder	No passing as less than 50m and low traffic volume from 3 Lots	
Cyclists	Shared in movement lane	
Movement lane width	3.0m	
Classification	Private - Access Lot	
Turning Head	T Shaped as per LDCP Figure 3.4	

2.3.14 Access 3

Feature	Design Features	Reason for Departure if any
Road No	Access 3	
Cross Section Ref	E9	
Our Road Type	Type - Access	
Area	Suburban	
Local attributes	Access to houses/ townhouses	
Locality served	1 to 3 du	
Target operating speed	10km/h	
Legal road width	10m	Wider than minimum to allow for T turning head and landscaping
Pedestrians	Shared in movement lane	
Passing, parking, loading and shoulder	No passing as less than 50m and low traffic volume from 3 Lots	
Cyclists	Shared in movement lane	
Movement lane width	3.0m	
Classification	Private - Access Lot	
Turning Head	T Shaped as per LDCP Figure 3.4	

2.3.15 Access 4

Feature	Design Features	Reason for Departure if any
Road No	Access 4	
Cross Section Ref	E11	
Our Road Type	Type - Access	
Area	Suburban	
Local attributes	Access to houses/ townhouses	
Locality served	1 to 20 lots	
Target operating speed	20km/h	
Legal road width	10m	Wider than minimum to allow for T turning head and landscaping
Pedestrians	Shared in movement lane	
Passing, parking, loading and shoulder	Shared in movement lane	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Lane (≈ 200vpd)	
Turning Head	T Shaped as per LDCP Figure 3.4	

2.3.16 Access 5

Feature	Design Features	Reason for Departure if any
Road No	Access 5	
Cross Section Ref	E9	
Our Road Type	Type - Access	
Area	Suburban	
Local attributes	Access to houses/ townhouses	
Locality served	1 to 3 du or 1 to 6 du	
Target operating speed	10km/h	
Legal road width	10m	Wider than minimum to allow for landscaping
Pedestrians	Shared in movement lane	
Passing, parking, loading and shoulder	No passing as less than 50m and low traffic volume from 2 Lots	
Cyclists	Shared in movement lane	
Movement lane width	3.0m	
Classification	Private - Access Lot	
Turning Head	Not required	

2.3.17 Outlet Road

Feature	Design Features	Reason for Departure if any
Road No	Outlet Road	
Cross Section Ref	E8	
Our Road Type	Type – Semi Rural	
Area	Rural	
Local attributes	All (serving land uses not specified elsewhere in this table(	
Locality served	NA	
Target operating speed	50km/h	
Legal road width	20m	
Pedestrians	2m wide gravel footpath on western road side	Providing one footpath on western side as eastern side would be installed by future developer of adjacent block once their development layout is known
Passing, parking, loading and shoulder	Sealed shoulder	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Connector / collector (≈ 2500vpd)	
Turning Head	Not required	

2.4 Stormwater

For stormwater refer separate report by Riley Consultants which provide the overall stormwater disposal concept for the ODP.

2.5 Wastewater

Council's Project Manager (Infrastructure) has been consulted during the investigation of the proposed development's wastewater requirements. Rationale Ltd were engaged by Council to assess whether there is sufficient capacity in the existing network to accommodate the connection of the Northlake Zone and to determine whether there is an opportunity to optimise the network by identifying and assessing a range of technical options for the servicing of this development.

Consultation with Myles Lind of Council has confirmed that Council is happy with the proposed connection of Northlake to its infrastructure but requires further modelling to be carried out by Council using a calibrated model before offsite upgrades, if any are required, can be confirmed.

Enclosed in **Appendix C** is an updated plan showing the overview of the Northlake zone. The number of units in Stages A and B has been updated to reflect the final number of units shown on the ODP. This plan has been provided to Council for further modelling. The result of this further modelling is dependent on the calibrated model being updated by Council.

2.5.1 Waste Water Catchments

Enclosed in **Appendix D** is waste water catchment plan with height relief showing that there are two primary catchments required to be serviced within the land owned by Northlake Investments and the upstream land owned by Allenby Farms. These are labelled catchments 1 and 2. Both of these catchment will be serviced by connection to an existing 300 diameter trunk main located in Outlet Road.

Catchment 3 comprises the land currently owned by Gilbertson. This catchment is able to be serviced directly from Aubrey Road.

2.5.2 Internal Reticulation

The proposed concept internal waste water reticulation is enclosed within **Appendix E**. The proposed point of connection is to an existing 300mm diameter trunk main located in Outlet Road. Note this main is not shown on Council GIS as the final as-builts for the adjacent subdivision have not been submitted. The existing 300 diameter main is to be extended up Outlet Road and then up the central collector road through Northlake Investments ODP. This will service all of waste water catchment 1.

An assessment by Council will be required as part of modelling to confirm what proportional offsetting is appropriate to allow for the servicing of upstream land. Any increases in pipe sizes above that only required to service the Northlake Investment development would be offset against development contributions.

A second smaller 225 diameter trunk main is to be extended further along Outlet Road to service waste water catchment 2. Note there is likely to be parts of future stages in catchment 2 that will likely require low pressure pump due to the height relief, however all of Stages 1 -3 can be serviced by gravity drainage. Note the trunk main cannot be installed any deeper due to existing level of the 300 diameter drainage located in Outlet Road.

The remaining parts of each catchment are shown as being serviced by smaller 150 diameter waste water lines following the road layout. There are options for part of Stage 1 to be connected back into the existing drainage located in the adjacent subdivision via Mount Linton Avenue. The final arrangement will be confirmed as part of detailed engineering design with Council.

2.6 Water Supply

Council's Project Manager (infrastructure) has been consulted during the investigation of the proposed development's potable water requirements. Tonkin and Taylor Ltd were engaged by Council to assess whether there is sufficient capacity in the existing network to accommodate the connection of the Northlake development and to determine whether there is an opportunity to optimise the network by identifying and assessing a range of technical options for the servicing of this development.

Consultation with Mark Baker of Council has confirmed that Council is happy with the proposed connection of Northlake to its infrastructure but requires further modelling to be carried out by Council using a calibrated model before offsite upgrades, if any are required, can be confirmed.

Enclosed in **Appendix C** is an updated plan showing the overview of the Northlake zone. The number of units in Stages A and B has been updated to reflect the final number of units shown on the ODP. This plan has been provided to Council for further modelling. The result of this further modelling is dependent on the calibrated model being updated by Council.

2.6.1 Internal Reticulation

The proposed concept internal water reticulation is enclosed within **Appendix F**. The proposed point of connection is to the existing 150 diameter lines located in Outlet Road, Mount Linton Avenue and Northburn Road. These are extended through to the central collector road to connect to a larger 250 diameter water trunk main.

The 250 diameter trunk main is proposed to be ultimately extended up along the main collector road through Allenby Farms and connect back into the main trunk main from the Beacon Point Reservoir thereby creating a loop and providing sufficient pressure. The exact timing for this connection is subject to the further modelling by Council.

The 250 diameter trunk main will also be extended through to Aubrey Road via the Gilbertson land. This connection does not provide any benefits for Northlake Investments but is required to provide sufficient water and pressure for the Gilbertson land when it is developed.

An assessment by Council will be required as part of modelling to confirm what proportional offsetting is appropriate to allow for the servicing of adjacent blocks. Any increases in pipe sizes above that only required to service the Northlake Investment development would be offset against development contributions.

The remaining parts of Stages 1 – 3 are shown as being serviced by smaller 100 diameter water lines following the road layout.

2.7 Network Utility Services

2.7.1 Electricity

There is existing electrical reticulation in the earlier stages of Northlake adjacent Aubrey road that can be extended into the development. The local electricity authority, Aurora Energy, have been consulted and they confirm that supply can be made available to this site. This supply is currently limited to single phase 15kVA per lot. A letter from Aurora confirming this is attached **Appendix G**.

2.7.2 Telecommunications

Chorus has confirmed that telecommunications can be made available to the site. This will require extension of a new telecom feeder cable to be installed offsite. The final design is subject to confirmation with Chorus. An email from Chorus confirming this is attached in **Appendix H**.

2.8 Conclusion

All of the network operators for water, waste water, power and telecom have confirmed connection to their system by Northlake is possible.

While some system upgrades are known to be necessary, further modelling is required by Council using its new calibrated waste water and water supply models to confirm the exact timing. At this stage the subdivision of Stage 1 -3 covers only a small part of the Northlake zone. It is anticipated that detailed modelling by Council will confirm what subdivision stages can connect before triggering offsite upgrades.

Development contributions payable for this development (less the credit for upgrading the system) will mitigate any effect this development will have on Council's existing infrastructure.

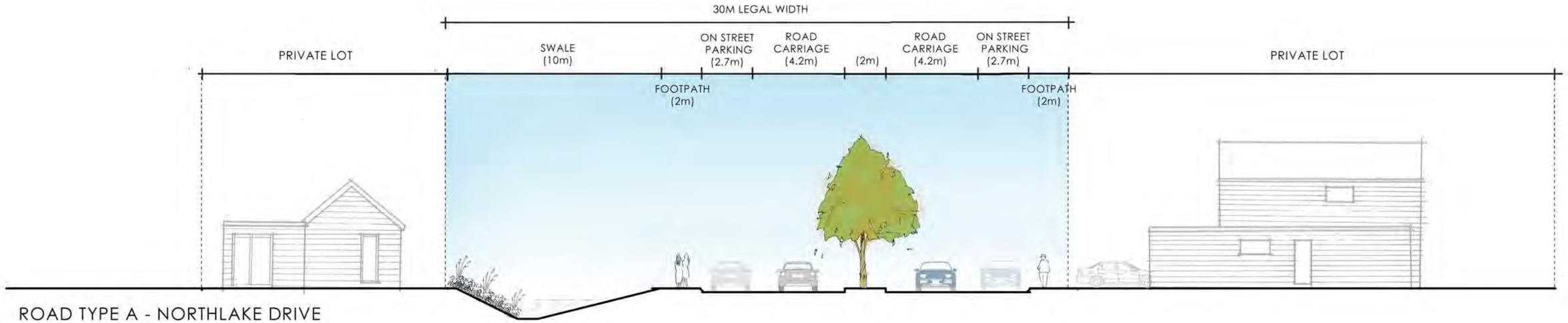
Mike Botting
Paterson Pitts Group Limited (Wanaka)

Appendix A: Roading Hierarchy Plans & Typical Cross Sections

+ NORTHLAKE WANAKA- ODP ROAD HIERARCHY - REVISED

REFERENCE : 1949 - SK-524 - SCALE =1:1500 AT A1. 1:3000 AT A3 - 14 APRIL 2016

baxter design group



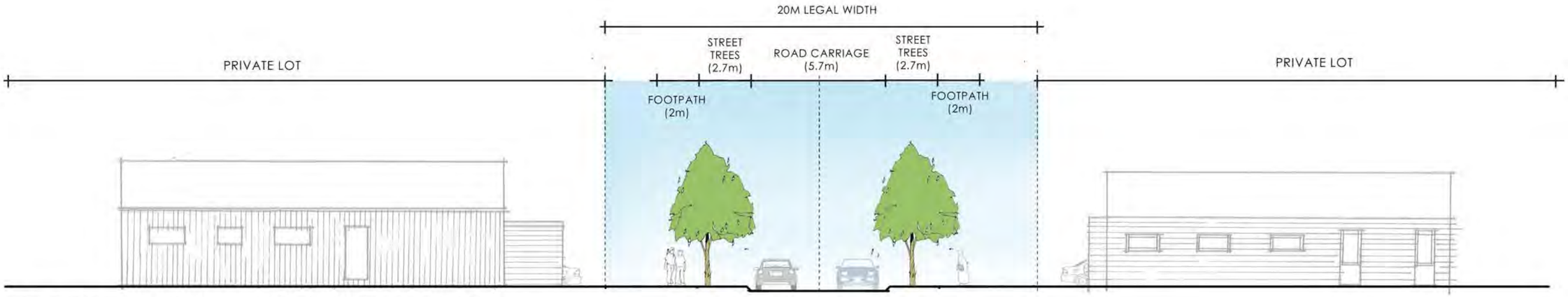
ROAD TYPE A - NORTHLAKE DRIVE
CLASSIFICATION: COLLECTOR

ROAD TYPE A - NORTHLAKE DRIVE - VILLAGE CENTRE
CLASSIFICATION: COLLECTOR

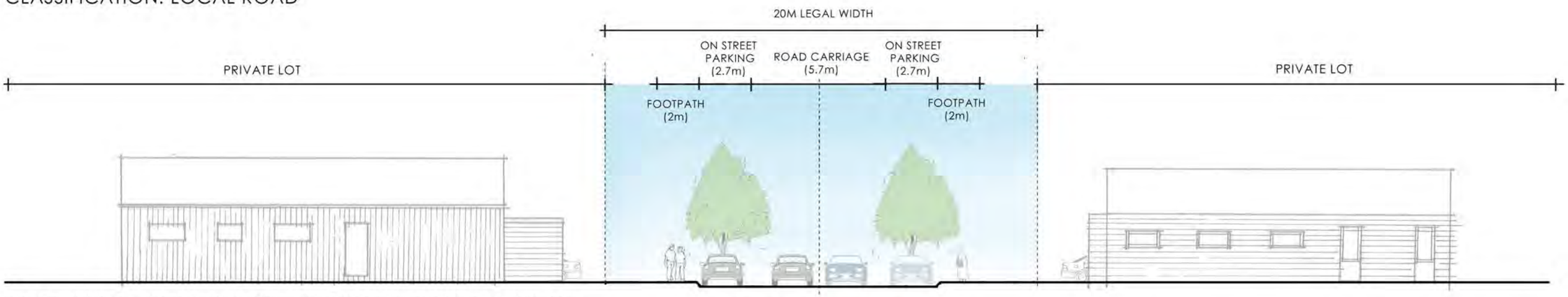
+ NORTHLAKE WANAKA- INDICATIVE TYPE A ROAD CROSS SECTIONS - REVISED

REFERENCE : 1949 - SK-525 - SCALE =1:100 AT A1. 1;200 AT A3 - 14 APRIL 2016

baxter design group



ROAD TYPE B - WITH STREET TREES (20M LEGAL WIDTH)
CLASSIFICATION: LOCAL ROAD

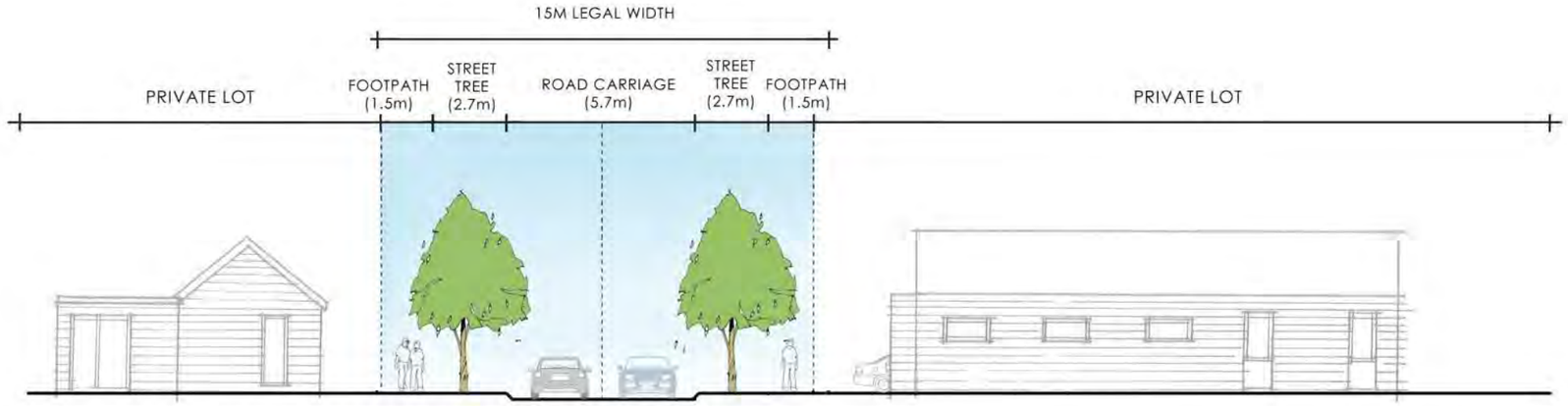


ROAD TYPE B - WITH ON STREET PARKING (20M LEGAL WIDTH)
CLASSIFICATION: LOCAL ROAD

+ NORTHLAKE WANAKA- INDICATIVE TYPE B ROAD CROSS SECTIONS

REFERENCE : 1949 - SK-526 - SCALE =1:100 AT A1. 1:200 AT A3 - 14 APRIL 2016

baxter design group



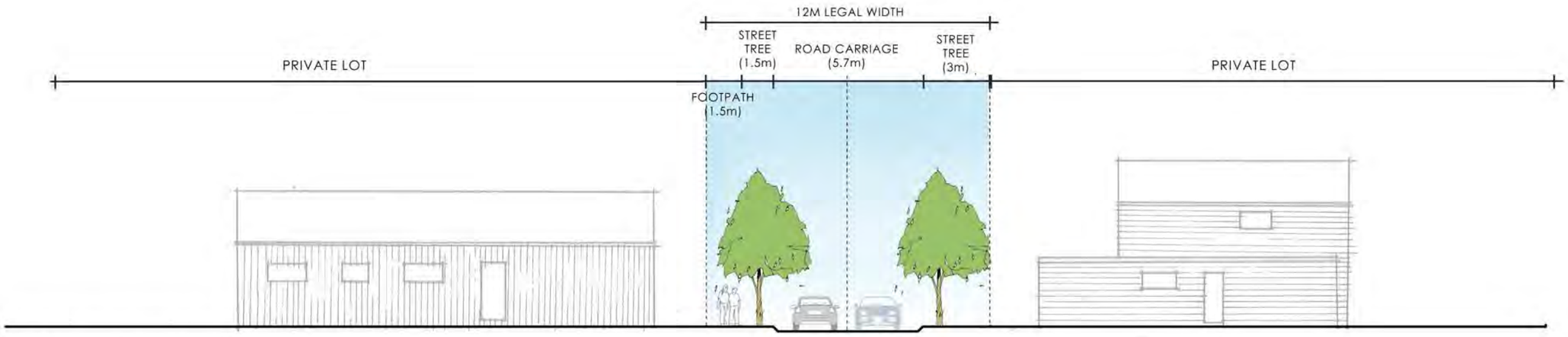
ROAD TYPE B - WITH STREET TREES (15M LEGAL WIDTH)
CLASSIFICATION: LOCAL ROAD

ROAD TYPE B- WITH ON STREET PARKING (15M LEGAL ROAD)
CLASSIFICATION: LOCAL ROAD

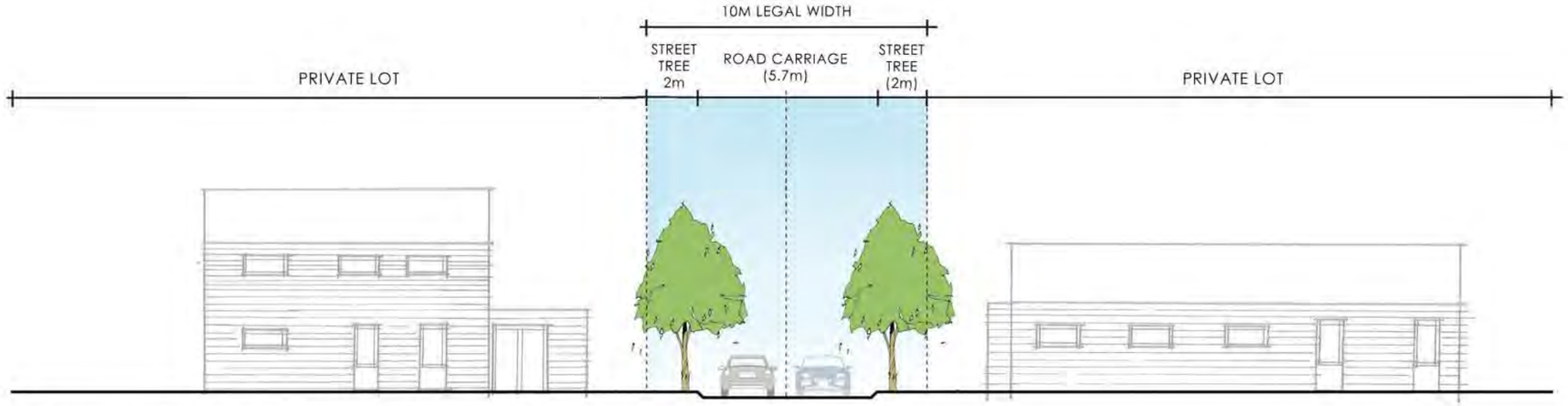
NORTHLAKE WANAKA- INDICATIVE TYPE B ROAD CROSS SECTIONS

REFERENCE : 1949 - SK-527 - SCALE =1:100 AT A1. 1;200 AT A3 - 14 APRIL 2016

baxter design group



ROAD TYPE C - WITH STREET TREES
CLASSIFICATION: LANE



ROAD TYPE D - TRAFFIC LANE + PASSING BAYS/ON STREET PARKING
CLASSIFICATION: LANE

Note: The above typical cross section for Road Type D is in accordance with NZS4404:2010 Figure E11 suitable for servicing 1-20 dwelling units. Where this typical cross section is utilised to service less dwelling units there will be a reduction in legal road width and movement lane width in accordance with NZS4404:2010 Table 3.2

+ NORTHLAKE WANAKA- INDICATIVE TYPE C & D ROAD CROSS SECTIONS

REFERENCE : 1949 - SK-528 - SCALE =1:100 AT A1. 1:200 AT A3 - 14 APRIL 2016

baxter design group

Appendix B: Table 3.2 Road Classification Table

Project: Northlake - Stages 1 - 3

PATERSONPITTSGROUP
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			Place Context			Design Environment					Link Context								
Road Number	NZS4404 Cross Section Ref	Design Decision Road Type	Area	Land Use	Local Attributes	Locality Served	Target Operating Speed (km/h)	Min. Road Width (m)	Design Decision Road Width (m)	Max. Grade	Provision of Footpath for Pedestrians	Design Decision Provision of Footpath for Pedestrians	Passing, parking, loading and shoulder	Design Decision Provision of Recessed Carparking	Cyclists	Min. Movement Lane (excl. shoulder) (m)	Design Decision Movement Lane (excl. shoulder) (m)	Design Decision Turning Head Type	Classification
Rd 1	**E13**	Type AA	Suburban	Live and Play	Primary access to housing	Up to 800 du	50	20	20	10.00%	2.0m each side	2.0m each side	Parking is separate and recessed. See 3.3.6 Public transport is likely (see clause 3.3.1.4, 3.3.1.5)	Recessed Parking	Separate provision where local authoirity defined cycle route	2 x 4.2	2 x 4.2	NA	Connector / collector (≈ 8000vpd)
Rd 2 up to intersection with Rd3	**E12**	Type B - 20m	Suburban	Live and Play	Primary access to housing	1 to 200 du	40	15	20	12.50%	1.5m one side or 1.5m each side where more than 20 du or more than 100m in length	1.5m each side	Shared parking in the movement lane up to 100 du, separate parking required over 100 du	Recessed Parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Local Road (≈ 2000vpd)
Rd 2 along Lot 1008 western bdy	**E15**	Type B - 20m	Suburban	Shop and trade, work and learn	Access to trade, office and education	Suburban village, access to office and education, 1 -	40	18	20	10.00%	3.0m each side	2.0m each side, as considered low demand shop & trade area	Parking and loading bays both sides may be in the movement lane or recessed. See 3.3.6.	Recessed Parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Local Road (≈ 2000vpd)
Rd 3	**E12**	Type B - 15m	Suburban	Live and Play	Primary access to housing	1 to 200 du	40	15	15	12.50%	1.5m one side or 1.5m each side where more than 20 du or more than 100m in length	1.5m each side	Shared parking in the movement lane up to 100 du, separate parking required over 100 du	No Recessed Parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Local Road (≈ 2000vpd)
Rd 4	**E12**	Type B - 20m	Suburban	Live and Play	Primary access to housing	1 to 200 du	40	15	20	12.50%	1.5m one side or 1.5m each side where more than 20 du or more than 100m in length	1.5m one side	Shared parking in the movement lane up to 100 du, separate parking required over 100 du	Recessed Parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Local Road (≈ 2000vpd)
Rd 5	**E12**	Type B - 20m	Suburban	Live and Play	Primary access to housing	1 to 200 du	40	15	20	12.50%	1.5m one side or 1.5m each side where more than 20 du or more than 100m in length	1.5m each side	Shared parking in the movement lane up to 100 du, separate parking required over 100 du	Recessed Parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Local Road (≈ 2000vpd)
Rd 6	**E12**	Type B - 15m	Suburban	Live and Play	Primary access to housing	1 to 200 du	40	15	15	12.50%	1.5m one side or 1.5m each side where more than 20 du or more than 100m in length	1.5m one side	Shared parking in the movement lane up to 100 du, separate parking required over 100 du	No Recessed Parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Local Road (≈ 2000vpd)
Rd 7	**E11**	Type C	Suburban	Live and Play	Access to houses/ townhouses	1 to 20 du	20	9	12	16.00%	Shared (In movement lane)	1.5m one side	Shared (In movement lane)	No Recessed Parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Lane (≈ 200vpd)
Rd8	**E12**	Type B - 15m	Suburban	Live and Play	Primary access to housing	1 to 200 du	40	15	15	12.50%	1.5m one side or 1.5m each side where more than 20 du or more than 100m in length	1.5m one side	Shared parking in the movement lane up to 100 du, separate parking required over 100 du	No Recessed Parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Local Road (≈ 2000vpd)
Rd9	**E12**	Type B - 20m	Suburban	Live and Play	Primary access to housing	1 to 200 du	40	15	20	12.50%	1.5m one side or 1.5m each side where more than 20 du or more than 100m in length	1.5m each side	Shared parking in the movement lane up to 100 du, separate parking required over 100 du	Recessed Parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Local Road (≈ 2000vpd)
Rd10	**E11**	Type C	Suburban	Live and Play	Access to houses/ townhouses	1 to 20 du	20	9	12	16.00%	Shared (In movement lane)	1.5m one side	Shared (In movement lane)	No Recessed Parking	Shared (In movement lane)	5.5 - 5.7	5.7	T Shaped as per LDCP Figure3.4	Lane (≈ 200vpd)
Access 1	**E10**	Type - Access	Suburban	Live and Play	Side or rear service access	Up to 100, in length between streets, 1 to 20 lots	10	6	6	16.00%	Shared (In movement lane)	NA	Allow for passing up to every 50m	No passing less than 50m, low traffic volume 2 lots	Shared (In movement lane)	2.75 - 3.0	3	NA	Lane (≈ 200vpd)
Access 2	**E9**	Type - Access	Suburban	Live and Play	Access to houses/ townhouses	1 to 3 du or 1 to 6 du	10	3.6m for up to 3 du or 4.5m for up to 6 du	6	20.00%	Shared (In movement lane)	NA	Allow for passing up to every 50m	No passing less than 50m, low traffic volume 3 lots	Shared (In movement lane)	2.75 - 3.0	3	NA	Lane (this would normally be a private road or private way)
Access 3	**E9**	Type - Access	Suburban	Live and Play	Access to houses/ townhouses	1 to 3 du or 1 to 6 du	10	3.6m for up to 3 du or 4.5m for up to 6 du	10	20.00%	Shared (In movement lane)	NA	Allow for passing up to every 50m	No passing less than 50m, low traffic volume 3 lots	Shared (In movement lane)	2.75 - 3.0	3	T Shaped as per LDCP Figure3.4	Lane (this would normally be a private road or private way)

Project: Northlake - Stages 1 - 3

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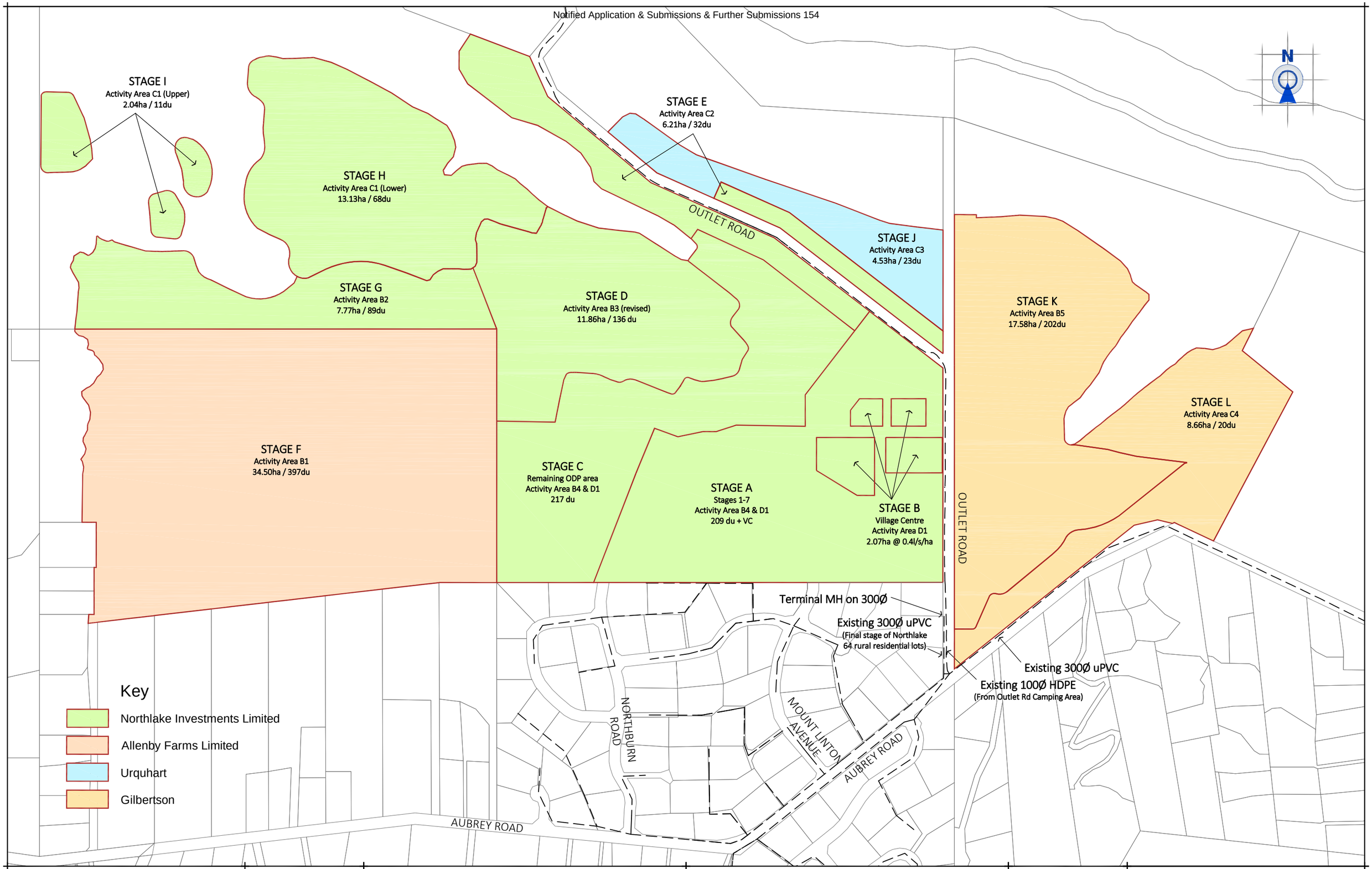
			Place Context			Design Environment					Link Context								
Road Number	NZS4404 Cross Section Ref	Design Decision Road Type	Area	Land Use	Local Attributes	Locality Served	Target Operating Speed (km/h)	Min. Road Width (m)	Design Decision Road Width (m)	Max. Grade	Provision of Footpath for Pedestrians	Design Decision Provision of Footpath for Pedestrians	Passing, parking, loading and shoulder	Design Decision Provision of Recessed Carparking	Cyclists	Min. Movement Lane (excl. shoulder) (m)	Design Decision Movement Lane (excl. shoulder) (m)	Design Decision Turning Head Type	Classification
Access 4	**E11**	Type - D	Suburban	Live and Play	Access to houses/ townhouses	1 to 20 du	20	9	10	16.00%	Shared (In movement lane)	NA	Shared (In movement lane)	Shared (In movement lane) as width proposed is 5.7	Shared (In movement lane)	5.5 - 5.7	5.7	T Shaped as per LDCP Figure3.4	Lane (≈ 200vpd)
Access 5	**E9**	Type - Access	Suburban	Live and Play	Access to houses/ townhouses	1 to 3 du or 1 to 6 du	10	3.6m for up to 3 du or 4.5m for up to 6 du	10	20.00%	Shared (In movement lane)	NA	Allow for passing up to every 50m	No passing less than 50m, low traffic volume 2 lots	Shared (In movement lane)	2.75 - 3.0	3	NA	Lane (this would normally be a private road or private way)
Outlet Road	**E8**	Type - Semi Rural	Rural	All other situations	All (serving land uses not specified elsewhere in this table(	-	Up to 100	20	20	10.00%	Separate from the carriageway, 1.5m each side	2.0m gravel one side	Total shoulder 1.5m, sealed shoulder 1.0m	NA	On sealed shoulder where it is a local authority defined cycle route	5.5 - 5.7	5.7	NA	Connector / collector (≈ 2500vpd)

Appendix C: Overview Plan of Northlake Zone and Densities



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19 Reece Crescent
or P.O. Box 283
Wanaka 9343
T 03 443 0110
E wanaka@ppgroup.co.nz

Client & Location:

Northlake Investments Limited
NORTHLAKE

Purpose & Drawing Title:

Northlake: Wastewater Layout Overview

Surveyed by:	-	Original Size:	Scale:
Designed by:	AGT	A3	1:6000 @ A3
Drawn by:	AGT		DO NOT SCALE
Checked by:	AGT		
Approved by:	MJB		
Job No: W4481-7	Drawing No: 014	Sheet No: 100	Revision No: 0
			Date Created: 13/03/2016

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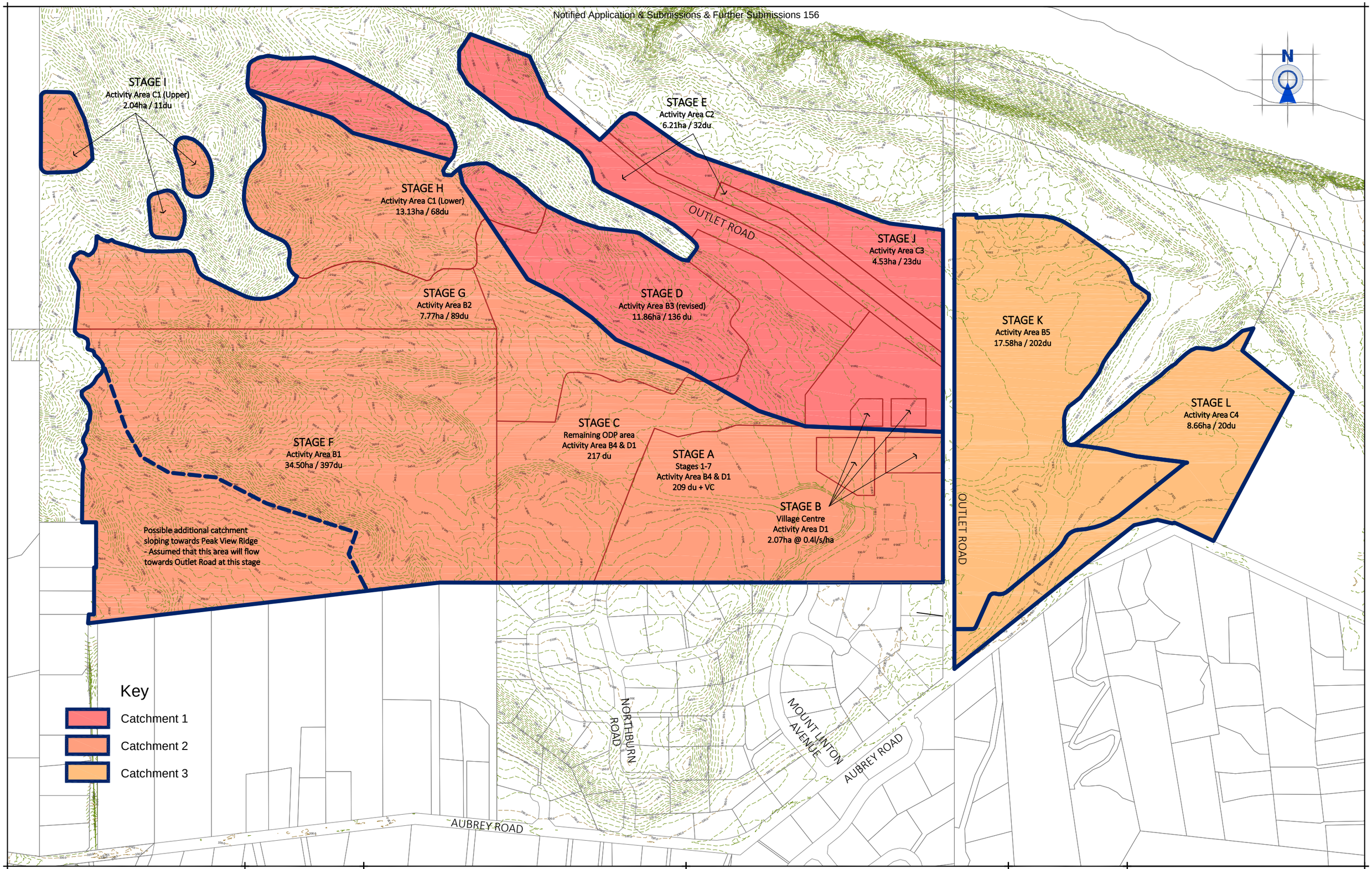
Appendix D: Waste Water Catchment Plan



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E wanaka@ppgroup.co.nz

Client & Location:

Northlake Investments Limited
NORTHLAKE

Purpose & Drawing Title:

Northlake: Wastewater Layout
Catchment Plan

Surveyed by:	-	Original Size:	Scale:
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Checked by:	AGT		
Approved by:	MJB		
Job No: W4481-7	Drawing No: 014	Sheet No: 101	Revision No: 0
			Date Created: 13/03/2016

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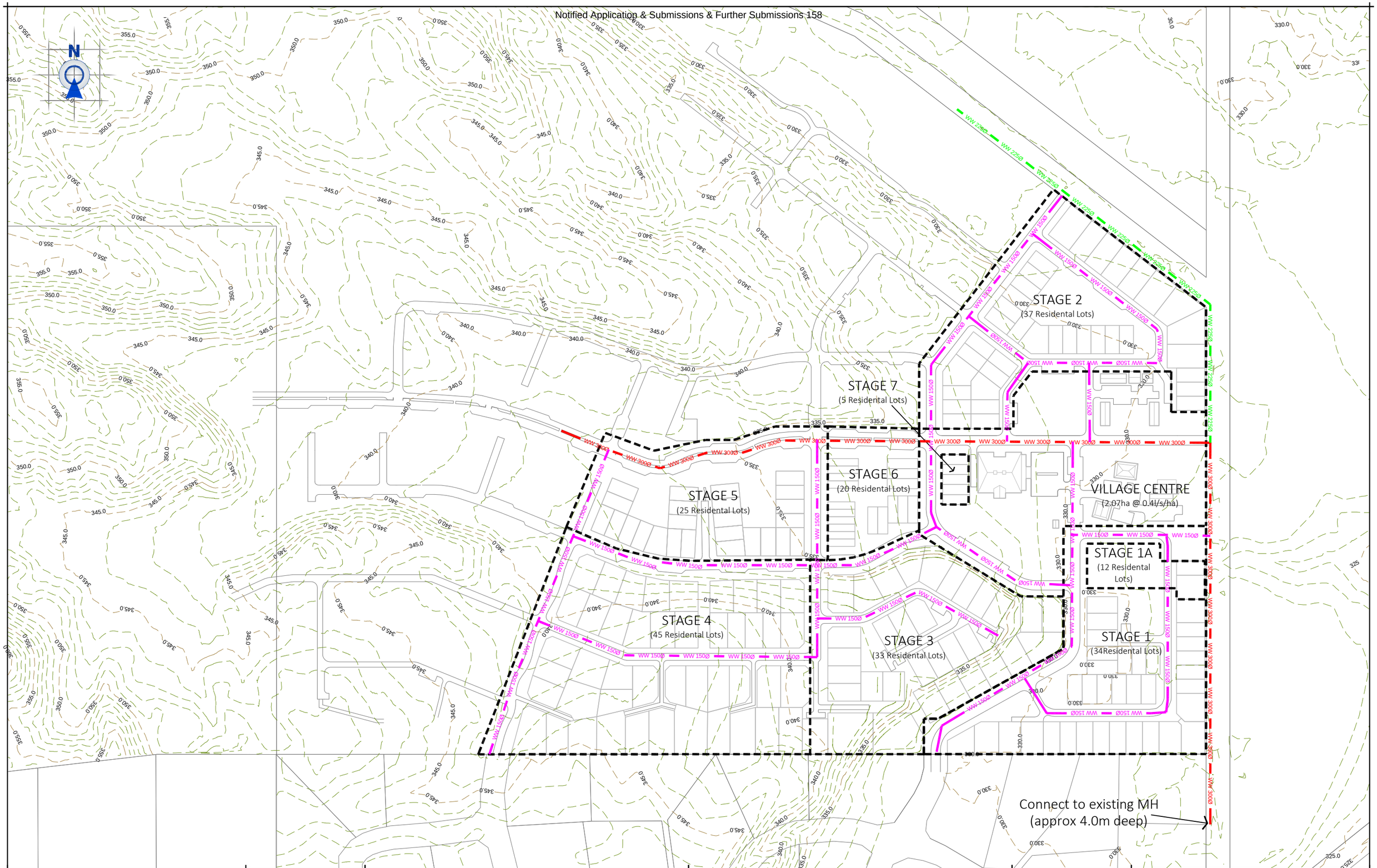
Appendix E: Waste Water Internal Reticulation Plan



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E wanaka@ppgroup.co.nz

Client & Location:

Northlake Investments Limited
NORTHLAKE

Purpose & Drawing Title:

Northlake: Wastewater Layout
Stages 1 - 7 and Village Centre

Surveyed by:	-	Original Size:	Scale:
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Checked by:	AGT		
Approved by:	MJB		
Job No: W4481-7	Drawing No: 014	Sheet No: 102	Revision No: 0
			Date Created: 13/03/2016

L:\DATA\4400\4481-7 STAGES 1-3\ACAD\W4481-7 014 PROPOSED WASTEWATER NETWORK.DW(

Appendix F: Water Supply Internal Reticulation Plan

Legend

PE Water Pipe Diameters (ID)

- STAGE BOUNDARIES
- 150Ø EXISTING 150mmØ
- 100Ø PROPOSED 100mmØ
- 150Ø PROPOSED 150mmØ
- 250Ø PROPOSED 250mmØ

Note: Rider mains not shown at this stage

OUTLET ROAD

STAGE 2
(37 Residental Lots)

STAGE 7
(5 Residental Lots)

REV 3: Update principal main Ø as per Council requirements

FUTURE CONNECTION TO WTBP - BEACON POINT

STAGE 6
(20 Residental Lots)

STAGE 5
(25 Residental Lots)

VILLAGE CENTRE
(Equivalent of 30 Residental Lots)

STAGE 1A
(10 Residental Lots)

STAGE 4
(45 Residental Lots)

STAGE 3
(33 Residental Lots)

STAGE 1
(36 Residental Lots)

OUTLET ROAD

NORTHBURN ROAD

MOUNT LINTON AVENUE

Extend existing 150mmØ in Outlet Road to Northlake Drive intersection. 300mmØ capped for future extension into Gilbertson land

Connect to existing 150mmØ in Outlet Road

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E wanaka@ppgroup.co.nz

Client & Location:
Winton Partners
NORTHLAKE

Purpose & Drawing Title:
Northlake Stages 1-7
Proposed Water Supply Layout

Surveyed by:	-	Original Size:	Scale:
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Drawn by:	LMR		DO NOT SCALE
Checked by:	AGT		
Approved by:	MJB		
Job No: W4481-7	Drawing No: 011	Sheet No: 100	Revision No: 3
			Date Created: 06/05/2016

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Appendix G: Electricity Supply Confirmation

Aurora

15 January 2016

Mr Mike Botting
Paterson Pitts Group
P O Box 283
WANAKA 9343

By email only: mike.botting@ppgroup.co.nz

Dear Mike

RE: ELECTRICITY SUPPLY FOR NORTHLAKE STAGES 1 - 4

Thank you for your letter and accompanying plans dated 21 December 2015, outlining the above proposed development.

Aurora can make an electricity supply available for this development, subject to the following conditions:

- Supply confirmation is limited to a single phase 15kVA supply per lot.
- Easements in gross, in favour of Aurora, must be granted over the placement of all new and existing Aurora plant associated with this development, unless installed in road reserve.
- Where the development involves further subdivision of a land parcel containing an existing serviced installation, the mains cables (overhead or underground) intended to supply each lot must be completely contained within the lot that it serves. In some cases, this will require relocation of the cable serving the existing installation.
- All electrical installations must comply with Aurora's Network Connection Requirements and related standards and policies.
- The developer **must** comply with the Electricity Act, subordinate Regulations and associated Codes of Practice. Particular attention must be paid to the minimum distances between power lines and other structures defined in NZECP34:2011 "NZ Electrical Code of Practice for Electrical Safe Distances".
- No building shall be erected over any electricity easement without specific written authority from Delta's General Manager – Asset Management.
- The developer is responsible for all resource consents and local authority approvals.
- The developer will be required to make capital contributions toward the costs of providing the power supply, in accordance with Aurora's Capital Contributions policy prevailing at the time the development, or each stage of development, proceeds.
- This approval will lapse within 12 months of the date of this letter, unless the developer enters into a formal supply agreement with Aurora for this development.

Aurora Energy Limited
10 Halsey Street • Dunedin • New Zealand
Email enquiries @auroraenergy.co.nz
Postal PO Box 1404
Phone 03-474-0322
Fax 03-477-5771

Please note that this letter is to confirm that a power supply can be made available and does not imply that a power supply is available now, or that Aurora will make power available at its cost.

Aurora's Network Connection Requirements and Capital Contributions policy are available from http://www.auroraenergy.co.nz/. Should you require further information or clarification, please contact the undersigned.

Yours sincerely

Alec Findlater
COMMERCIAL MANAGER (Delta)

for Aurora Energy Limited

DDI Phone (03) 479 6695
Mobile 027 222 2169
Fax (03) 477 5771
Email alec.findlater@thinkdelta.co.nz

Appendix H: Telecommunications Supply Confirmation

Mike Botting

From: Don Baskett <Don.Baskett@chorus.co.nz>
Sent: Tuesday, 22 December 2015 10:38 a.m.
To: Mike Botting; TSG
Cc: Marc Bretherton; Richard Mould
Subject: Northlake - Chorus network Confirmation
Attachments: W4481-7 008 Rev 1 151217 North Lake - Power & Telecom Modelling Plans.pdf.pdf

Mike

Thank you for the forward notice with regard to the proposed development areas.
I have entered some comments in blue font below in response to your queries.
Happy to discuss if required, I will be in the Nelson Office until around 4pm on Wednesday the 23rd of December or back after the 11th of January 2016.

TSG

Please create a file entry for this request:
WNK: Northlake Development concept plans
File status: Feasibility

Regards
Don Baskett
Senior Delivery Specialist

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Level 2, Exchange Building, 30 Halifax Street Nelson Private Bag 27
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From: Mike Botting [mailto:Mike.Botting@ppgroup.co.nz]
Sent: Monday, 21 December 2015 2:44 p.m.
To: Don Baskett <Don.Baskett@chorus.co.nz>
Cc: Marc Bretherton <marc.bretherton@wintonpartners.co.nz>
Subject: FW: w4481-7 - Northlake - Power Confirmation

Hi Don

Attached are some overall plans of the Northlake zone with the plans broken down into proposed stages. I have emailed you rather than TSG because of the issues surrounding obtaining confirmation that telecommunications can be made available to development area as opposed to requesting an actual supply contract.

At this stage we do not have an overall subdivision plan that can be provided to Chorus. We only have the structure plan which contains various subzones. The attached plans show the subzones, maximum dwelling densities and also provide a preliminary idea of how the staging of the area will progress.

As part of our high order planning we would like to know the following from Chorus

1. As an initial step can you review the proposed plans and provide us with a letter confirming that telecommunications can be made available to Stages 1 -4. This we see as a simple letter outlining that subject to detailed design Chorus will be able to provide telecommunications to the development area.

Chorus fibre network can be extended into the development area subject to the entering into a subdivision reticulation contract and fee payment agreement with the developer.
As you will be aware there are existing subdivision areas off Aubrey Road that have Chorus fibre reticulation.

2. Also can you outline what the servicing requirements are i.e. where telecommunications would be brought into the development area and also what constraints if any there are in the telecommunications network that might affect how the area can be developed i.e. offsite upgrades.

The existing fibre network would need to be augmented for extension into the North Lake development area and would require fibre installation from Wanaka Exchange via existing duct lines up into Aubrey Road.
A fibre feeder scope of work and cost can be provided when the detail around Stages 1 to 4 are provided in 2016. If this can be done as soon as the scheme plan detail is available it will allow time to sort out the reticulation contract detail and Chorus budget approval.

At this point in time stages 1 – 4 by Northlake Investments are proceeding starting next year. Further refined detail on the exact subdivision layout will be provided in the New Year once the Overall Development Plan (ODP) is finalized.

In the interim the attached plans within each subzone show the maximum density of dwellings. This is based on the Northlake District Plan rule densities plus 15%, so these numbers are considered to be the maximum yield. The actual yield will be known once the ODP is finalized and may be slightly less.

Give me a call to discuss if necessary. Look forward to receiving the initial confirmation in due course. Can you confirm approximate timeframes for confirming back to me with the requested information please.

Note that Marc Bretherton, the Project Manager for Winton partners who are developing the majority of the Northlake zone would like to discuss the project with you in more detail once you have reviewed the attached plans. If possible, this side of Christmas, could you let me know what time would suit you to hold a teleconference please. Failing this we can catch up in early January once you are back at work.

Regards

Mike Botting
Director & Registered Professional Surveyor
M 027 505 0664
E mike.botting@ppgroup.co.nz

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NORTHLAKE STAGES 4-6
SUBDIVISION INFRASTRUCTURE REPORT

PROJECT:	Northlake Wanaka Stages 4 - 6
PRINCIPAL:	Northlake Investments Limited
OUR REF:	W4481-8
DATE:	21 December 2016

DUNEDIN: P.O. Box 5933, Dunedin 9058. **T** 03 477 3245
CHRISTCHURCH: P.O. Box 160094, Christchurch 8441. **T** 03 928 1533
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REVISION / APPROVAL PANEL

Rev:	Date:	Prepared By:	Reviewed By:	Comments:
0	21/12/16	AGT	MJB	Original issue

CONTENTS

1. SCOPE

This report covers the availability of the following infrastructure elements and is intended to accompany a resource consent application for Subdivision Consent for Stages 4-6 of Northlake Investments Limited's development of Northlake, Wanaka.

- Earthworks
- Roading Design Statement
- Roading Design Parameters
- Stormwater
- Wastewater
- Water Supply
- Network Utility Services (electricity and telecommunications)

Landscaping and geotechnical are covered by separate consultant reports.

2. PROPOSED INFRASTRUCTURE

All infrastructure for the Northlake development has been designed in accordance with Councils Land Development and Subdivision Code of Practice (LDSCOP)

The following information is contained in Appendices A – F;

- Appendix 1: Bulk earthworks plans stages 4-6
- Appendix 2: Site management plan approved under RM160186
- Appendix 3: Approved ODP roading hierarchy plan and typical cross sections
- Appendix 4: Table 3.2 road classification table
- Appendix 5a: Electricity supply confirmation
- Appendix 5b: PowerNet design for ODP area
- Appendix 6: Telecommunications supply confirmation
- Appendix 7: Tonkin and Taylor water modelling report (Feb 2016)

2.1 Earthworks

RM160186 granted consent for bulk earthworks across Stages 1 – 7 of the Northlake development. This consent was approved a total earthworks quantum of 297,858m³ over an area of 20.4ha. The approved bulk earthworks includes the formation of roads to subgrade, the levelling and re-contouring of residential allotments, and the topsoiling of road berms, reserve areas and allotments.

Since obtaining the bulk earthworks consent, the final ground level for proposed Stage 4 has been re-designed to provide better outlook and orientation for the resultant lots. Stages 5 & 6 remain very similar to what was approved under RM160186 with the only differences being the transition to the re-designed ground levels in Stage 4.

We also note that the consented earthworks need to be essentially re-approved in order to reset the post subdivision ground level (in accordance with the QLDC District Plan definition of ground level).

A revised set of drawings for Stages 4-6 bulk earthworks is included with this application for approval – refer to Appendix 1. A summary of the Stages 4-6 earthworks is shown below:

- Area of exposed bare earth: 6.7 Ha
- Volume of earthworks: 91,000m³

- Maximum cut height: 6.5m
- Maximum fill height: 2.3m

The potential for environmental effects i.e. dust, sedimentation and erosion, resulting from the proposed earthworks will be managed in accordance with the site management plan approved under RM160186. A copy of this is attached to this report as **Appendix 2**. Sheet 106 of this drawing set is an updated site management plan factoring in the now completed earthworks for Stages 1-3

2.2 Road Design Statement

2.2.1 Scope of Roading Design Statement

The intention of this roading design statement is to outline to Council details of the proposed roading network for the Northlake Development as a whole and in doing so give context to the stages 4-6 application for subdivision consent.

This roading design statement covers all aspects of the proposed roading design as required by Section 3.2.6 of the QLDC LDSCOP. This includes:

(a) Road dimensions and layout
(b) Place and link functions
(c) Connectivity
(d) How target operating speeds have been achieved
(e) How LID principles have been considered for stormwater run-off from the roads

2.2.2 Roading Dimensions & Layout

The road layout for the Northlake development is shown on the plans contained in **Attachment B** of the AEE. The roading layout has been governed primarily by the location of existing road connections i.e. Outlet Road, Northburn Road and Mount Linton Avenue and the requirements of the Northlake structure plan.

Road dimensions have been based initially on the minimum requirements outlined in Table 3.2 QLDC LDSCOP and then modified to suit the functional and aesthetic goals of the proposed development. Refer **Appendix 4** for our modified table 3.2.

The proposed roads have a movement lane widths of either 2 x 4.2m, 5.5 – 5.7m or 2.75 – 3.0m. The reasons for these width options is as follows;

Road Type A
Road Type A on the roading hierarchy plan corresponds to an E13 type road in table 3.2 of QLDC LDSCOP. This is classed as a collector road.

This features movement lanes of 2 x 4.2m width, recessed parallel car parking with a dimensions of 2.7 m x 6.1m parking bays, footpaths on both sides with a width of 2m.

An added feature is proposed within Road type A includes a central boulevard/planting island and a large swale providing the primary stormwater conveyance down the middle of the site.

Road type A is contained within a 30m legal width to provide sufficient room to accommodate the swale, central boulevard/planting Island, the 2m wide footpaths, recessed parking, the movement lane, landscaping and services.

Road Type AA

Road Type AA on the roading hierarchy plan corresponds to an E13 type road in table 3.2 of QLDC LDSCOP. This is classed as a collector road.

This features movement lane widths of 2 x 4.2m, recessed parallel car parking with dimensions of 2.7m x 6.1m parking bays, footpaths on both sides with a width of 2m.

An added features proposed within Road type AA includes a central boulevard/planting island. This road type does not include the large swale. Road type AA is contained within a 20m legal width to provide sufficient room to accommodate the central boulevard/planting island, the 2m wide footpaths, recessed parking, the movement lane, landscaping and services.

Road Type B – 20m Width

Road Type B – 20m width on the roading hierarchy plan corresponds to an E12 type road in table 3.2 of QLDC LDSCOP. This is classed as a local road.

This features a movement lane width of 5.7m, recessed parallel car parking with a dimensions of 2.7m x 6.1m parking bays, footpaths on both sides with a minimum width of 1.5m.

Footpaths will be provided on both side where the road is servicing 20 or more dwellings or is longer than 100m in length. Recessed car parking will be provided where the road is servicing more than 100 dwellings.

Road Type B – 20m Width is contained within a 20m legal width to provide sufficient room to accommodate the 1.5m wide footpaths on both sides, recessed parking, the movement lane, landscaping and services.

Road Type B – 15m Width

Road Type B – 15m width on the roading hierarchy plan corresponds to an E12 type road in table 3.2 of QLDC LDSCOP. This is classed as a local road.

This features a movement lane width of 5.7m, car parking is shared in movement lane or recessed on one side only, footpaths on one or both sides with a minimum width of 1.5m.

Footpaths will be provided on both sides where the road is servicing 20 or more dwellings or is longer than 100m in length.

Road Type B – 15m Width is contained within a minimum 15m legal width to provide sufficient room to accommodate the 1.5m wide footpaths, recessed parking, the movement lane, landscaping and services.

A 5.7m movement lane width provides for the ability to park on one side of the road and one through lane or alternatively two through lanes. Neither option will be delineated but rather this will be left for road users to decide.

Road Type C

Road Type C on the roading hierarchy plan corresponds to an E11 type road in table 3.2 of QLDC LDSCOP. This is classed as a lane.

This features a movement lane width of 5.7m, car parking is shared in the movement lane, footpaths on one side with a minimum width of 1.5m.

Road Type C is contained within a minimum 12m legal width to provide sufficient room to accommodate the 1.5m wide footpath, the movement lane, landscaping and services.

Road Type D
Road Type D on the roading hierarchy plan corresponds to an E11 type road in table 3.2 of QLDC LDSCOP. This is classed as a lane.

This features a movement lane width of 5.7m, car parking is shared in the movement lane, and pedestrian access is shared within the movement lane.

Road Type D is contained within a minimum 10m legal width to provide sufficient room to accommodate the movement lane, landscaping and services.

Road Type F- Access
Road Type F Access corresponds to an E9 or E10 road in table 3.2 of QLDC LDSCOP. This is classed as a lane and will be either private or public depending on the number of lots serviced.

This features a movement lane width of 3.0m, allows for passing every 50m, and pedestrian access is shared within the movement lane.

Road Type Access is contained within a width of 6m to 10m legal width to provide sufficient room to accommodate the movement lane, landscaping and services.

8. Road Type – Semi Rural
Road Type Semi Rural corresponds to an E8 road in table 3.2 of QLDC LDSCOP. This is classed as a collector road.

This features a movement lane of 5.7m width, sealed shoulders with a water table drain. Pedestrians are catered for by a 2m wide gravel footpath along one side.

Road Type Semi Rural is contained within a 20m legal width.

2.2.3 Place and Link Functions

Section 3.2.4 QLDC LDSCOP states that "the two fundamental roles of a road are to provide a space for interaction between people for a range of purposes and access to land so that movement between places can occur".

The following two sections discuss the proposed design in terms of both 'place context' and 'link context'

Place Context
Place context is defined for both the specific land use served and the broader area type in which it is located. The land use characteristic is defined according to the description of predominant activities in individual areas. QLDC LDSCOP uses the descriptions "live, play, shop, work and learn, in addition to activities associated with growing, manufacturing and transporting of goods and products".

Using Table 3.1 from QLDC LDSCOP, we have categorised the development area as:

(a) Land use: live and play
(b) Area type: suburban

The live and play land use is defined as "homes, home based businesses, and mixed use developments with residential uses, as well as parks and low impact recreation". The proposed use of the development is for residential homes, local purpose and/or recreation reserves, walkway linkages and stormwater reserves and is consistent with the live and play land use.

The suburban area type is defined as "low and moderate density housing up to 15 units per hectare in an area where housing is the exclusive or dominant use". Residential housing will be the predominant land use allowing for the fact that there will likely be a few home based businesses established.

The 'urban' area type anticipates much a higher residential density (50 units per hectare) plus the inclusion of other land uses and is therefore not an appropriate category for the subject site. Similarly, the 'rural' area type is not appropriate because this is intended for a residential population outside of the urban limits.

Table 3.1 explains the transport context for the suburban area type as private vehicles being the predominant form of transport with public transport providing for peak flow on arterial and connector/collector roads. It further explains that non-motorised trips are primarily recreational and occur on local roads. Whilst the public transport component of this explanation is not currently applicable in the Wanaka context and private vehicles will be the predominant form of transport for the next few years, it is anticipated that public transport will be in place at some time in the future. With this in mind it would appear logical that bus stops could be situated on the Type A and Type B roads by converting some of the recessed parking into a suitable bus stop or by constructing a suitable bus stop at the appropriate time in the future by removal of street landscaping as required.

Link Context

Link context is classified by the extent of access and the degree of through movement intended to be served. This standard includes three levels of link context;

(a) Lane: a road that provides very high local access and very limited through movement connectivity. Very low vehicle speeds with shared pedestrian and vehicle access predominate;
(b) Local road: A road that provides access and connectivity for a local area. Low vehicle speeds, pedestrian and local amenity values predominate;
(c) Connector/collector road: A road that provides circulation in local areas and links to arterial roads, while balancing this with pedestrian and local amenity values. Higher vehicle and access for all modes of transport including public transport predominate.

The proposed road classification table contained in Appendix 4 contains columns that detail which of the above classification options has been assigned to each of the proposed roads.

2.2.4 Connectivity

Section 3.2.5 of QLDC LDSCOP states that well connected networks (roads and other links) are achieved with smaller block sizes and regular connections. Network connectivity shall be designed to achieve:

(a) Shorter travel distances;
(b) An increased number of alternative routes for all types of users;
(c) Increased opportunity for interaction;
(d) Improved access to public transport, cycling and walking networks, and access to destinations.

The proposed roading layout provides considerable options for route choice by utilising all connection points to existing roads.

The proposed roading layout linkage points and connectivity is consistent with the routes shown in RM 160152 being the approved ODP for Northlake.

Access to public transport has been mentioned earlier in this report.

2.2.5 *Target Operating Speeds*

Section 3.3.5 of QLDC LDSCOP states that traffic management shall be included in the road design to ensure that the target operating speeds are achieved. Target operating speed can be managed by physical and psychological devices such as narrowed movement lanes, reduced forward visibility, slow points, build outs, lengths, chicanes, planting and landscaping and street furniture and art works. The two key geometric factors that contribute to achieving the target operating speed are carriageway width and forward visibility.

The proposed carriageway widths are consistent with the requirements of QLDC LDSCOP in order to provide a suitable number of through lanes as well as making provision for car-parking and passing manoeuvres.

2.2.6 *LID Principles for Stormwater Runoff from Roads*

It is proposed to direct all stormwater runoff from roads to the roadside kerb and channel which will in turn discharge into mudtanks and an underground piped network. Ultimately all stormwater runoff from the roads will be piped to various stormwater reserves located across the site where the runoff will be detained so as to balance pre and post flows.

The design of the stormwater reserves is discussed in a separate report prepared by Riley Consultants. In summary the design is considered to be 'low impact' since all stormwater will be attenuated to pre-development flows.

Other LID options such as road side swales have been discounted due to the density of housing and the resulting number of vehicle crossing which would limit the effectiveness of any roadside swales, the maintenance requirements of these options (and degradation of visual appeal if maintenance is not undertaken.

2.3 Roading Design Parameters

Typical cross sections for all proposed roads are contained in **Appendix 3.**

The road design parameters proposed are as follows: (refer also the proposed road classification Table 3.2 contained in **Appendix 4)**

2.3.1 *Extension of Road 1 (Northlake Drive)*

Feature	Design Features	Reason for Departure if any
Road No	1	
Cross Section Ref	E13	
Our Road Type	Type A	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	Up to 800du	
Target operating speed	50km/h	
Legal road width	30m	
Pedestrians	A footpath will be constructed on both sides of the road 2.0m wide	
Passing, parking, loading and shoulder	Recessed parking	
Cyclists	Shared in movement lane	

Movement lane width	2 x 4.2	
Classification	Connector Road (~8000 vpd)	
Turning Head	Not Required	
Road to be vested in QLDC (YES/NO)	YES	

2.3.2 Extension of Road 8

Feature	Design Features	Reason for Departure if any
Road No	Rd 8	
Cross Section Ref	E12	
Our Road Type	Type B – 15m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 - 200 lots	
Target operating speed	40km/h	
Legal road width	20m	
Pedestrians	1.5m each side	
Passing, parking, loading and shoulder	No recessed parking	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Local road (~2000 vpd)	
Turning Head	Not Required	
Road to be vested in QLDC (YES/NO)	YES	

2.3.3 Road 11

Feature	Design Features	Reason for Departure if any
Road No	11	
Cross Section Ref	E12	
Our Road Type	Type B – 20m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 200 du	
Target operating speed	40km/h	
Legal road width	20m	Wider than the minimum of 15m – Linking Road 12 (which is the continuation of Northburn Drive) into the Village Centre
Pedestrians	1.5m each side	
Passing, parking, loading and shoulder	No recessed parking	

Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Local road (~2000 vpd)	
Turning Head	Not Required	
Road to be vested in QLDC (YES/NO)	YES	

2.3.4 Road 12

Feature	Design Features	Reason for Departure if any
Road No	12	
Cross Section Ref	E12	
Our Road Type	Type B – 20m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 200 du	
Target operating speed	40km/h	
Legal road width	20m	Wider than minimum of 15m – continuation of Northburn Drive
Pedestrians	1.5m each side	
Passing, parking, loading and shoulder	No recessed parking	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Local road (~2000 vpd)	
Turning Head	Not Required	
Road to be vested in QLDC (YES/NO)	YES	

2.3.5 Road 13

Feature	Design Features	Reason for Departure if any
Road No	13	
Cross Section Ref	E11	
Our Road Type	Type C – 12m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 20 du	
Target operating speed	20km/h	
Legal road width	12m	Wider than minimum of 9m to allow room for carriageway, services and landscaping
Pedestrians	1.5m on one side only	

Passing, parking, loading and shoulder	No recessed parking	
Cyclists	Shared in movement lane	
Movement lane width	5.7m	
Classification	Lane (~200 vpd)	
Turning Head	Not Required	
Road to be vested in QLDC (YES/NO)	YES	

2.3.6 Access 7

Feature	Design Features	Reason for Departure if any
Access No	7	
Cross Section Ref	E9	
Our Road Type	Type F – 10m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 6 du	
Target operating speed	10km/h	
Legal road width	10m	Wider than required to allow room for carriageway, services and earthworks batters
Pedestrians	Shared in movement lane	
Passing, parking, loading and shoulder	Shared in movement lane	
Cyclists	Shared in movement lane	
Movement lane width	3.0m	
Classification	Lane	
Turning Head	Y shaped – complies with LDSCOP	
Road to be vested in QLDC (YES/NO)	YES	

2.3.7 Access 8

Feature	Design Features	Reason for Departure if any
Access No	8	
Cross Section Ref	E9	
Our Road Type	Type F – 10m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 6 du	
Target operating speed	10km/h	

Legal road width	10m – 17m	Wider than required to room for carriageway, services and turning head / courtyard area
Pedestrians	Shared in movement lane	
Passing, parking, loading and shoulder	Shared in movement lane	
Cyclists	Shared in movement lane	
Movement lane width	3.0m	
Classification	Lane	
Turning Head	T shaped – complies with LDSCOP	
Road to be vested in QLDC (YES/NO)	YES	

2.3.8 Access 9

Feature	Design Features	Reason for Departure if any
Road No	9	
Cross Section Ref	E9	
Our Road Type	Type F – 10m	
Area	Suburban	
Local attributes	Primary access to housing	
Locality served	1 to 6 du	
Target operating speed	10km/h	
Legal road width	10m – 17m	Wider than required to room for carriageway, services and turning head / courtyard area
Pedestrians	Shared in movement lane	
Passing, parking, loading and shoulder	Shared in movement lane	
Cyclists	Shared in movement lane	
Movement lane width	3.0m	
Classification	Lane	
Turning Head	T shaped – complies with LDSCOP	
Road to be vested in QLDC (YES/NO)	YES	

2.4 Stormwater

For stormwater refer separate report by Riley Consultants which provide the overall stormwater disposal concept for the ODP – this report is contained in Attachment F1 to the application.

Attachment F2 to the application outlines the proposed management of upstream flows once Stages 4-6 are constructed.

2.5 Wastewater

Council's Project Manager (Infrastructure) has been consulted during the investigation of the proposed development's wastewater requirements. Rationale Ltd were engaged by Council to assess whether there is sufficient capacity in the existing network to accommodate the connection of the Northlake Zone and to determine whether there is an opportunity to optimise the network by identifying and assessing a range of technical options for the servicing of this development.

Further consultation with Myles Lind of Council has confirmed that Council is happy with the proposed connections and confirms that no upgrades are required to off-site infrastructure.

The proposal for Stages 4 -6 is to provide each lot with a Ø100mm lateral that is connected to the reticulated mains within the road corridors. All wastewater from these stages will gravity flow towards Road 1 and then south along Outlet Road in the drainage network that is being extended in Stage 1.

2.6 Water Supply

Council's Project Manager (infrastructure) has been consulted during the investigation of the proposed development's potable water requirements. Tonkin and Taylor Ltd were engaged by Council to assess whether there is sufficient capacity in the existing network to accommodate the connection of the Northlake development and to determine whether there is an opportunity to optimise the network by identifying and assessing a range of technical options for the servicing of this development.

Consultation with Mark Baker of Council has confirmed that Council is happy with the proposed connection of Northlake to its infrastructure but requires further modelling to be carried out by Council using a calibrated model before offsite upgrades, if any are required, can be confirmed.

2.6.1 Internal Reticulation

The proposal for Stages 4-6 is as follows:

- Extend the existing Ø150mm water main in Northburn Drive north along Road 12 and Access 9 to tie into the Ø250mm main in Road 1 (Northlake Drive)
- Extend the Ø250mm principal main along the south side of Road 1 (Northlake Drive) constructed in Stage 2
- All other reticulation will be Ø100mm water mains or Ø50mm rider mains

2.6.2 Modelling Considerations

The Tonkin and Taylor report (refer to Appendix 7) states in Section 4.1 that the modelling shows 'Beacon Point Reservoir (RL 382m) and the corresponding network infrastructure has sufficient capacity to meet the additional 47.80l/s demand of Stages 1-4 with little impact on pressure and demand to the surrounding network. However, minimum residual pressures of 300kPa were not met at areas of higher elevation (above RL 343m). This is due to the reservoir elevation relative to the higher levels of the development and is not considered a result of head losses in the network".

With regard to the current application, only Lots 135-140 are at or above RL343 with Lots 137-139 being at the highest elevation of 344m. We note that the Tonkin and Taylor report contained in Appendix 7 is dated Feb 2016 and we understand that since this date Council has undertaken further modelling and calibration of its water supply network. We therefore request that Council review the T&T report and advise accordingly.

Section 4.1 of the T&T report further notes that firefighting flows will be available

2.7 Network Utility Services

2.7.1 Electricity

The electrical reticulation that will be installed for Stages 1-3 of Northlake can be extended to supply Stages 4-6. The local electricity authority, Aurora Energy, were consulted during the preliminary planning of Stages 1-3 and they have confirmed that supply can be made available to this site. This supply is currently limited to single phase 15kVA per lot. A letter from Aurora confirming this is attached **Appendix 5a**.

Subsequent to this discussion, PowerNet have been commissioned to install and operate an embedded network for Northlake. A design for the entire ODP area approved under RM 160152 has been provided by Peak Power and is attached as **Appendix 5b**. The area covered by this design includes Stages 4-6.

2.7.2 Telecommunications

Chorus has confirmed that telecommunications can be made available to the site. This will require extension of the reticulation installed for Stages 1-3. The final design is subject to confirmation with Chorus. A letter from Chorus confirming this is attached in **Appendix 6**.

2.8 Conclusion

All of the network operators for water, waste water, power and telecom have confirmed connection to their system by Northlake is possible.

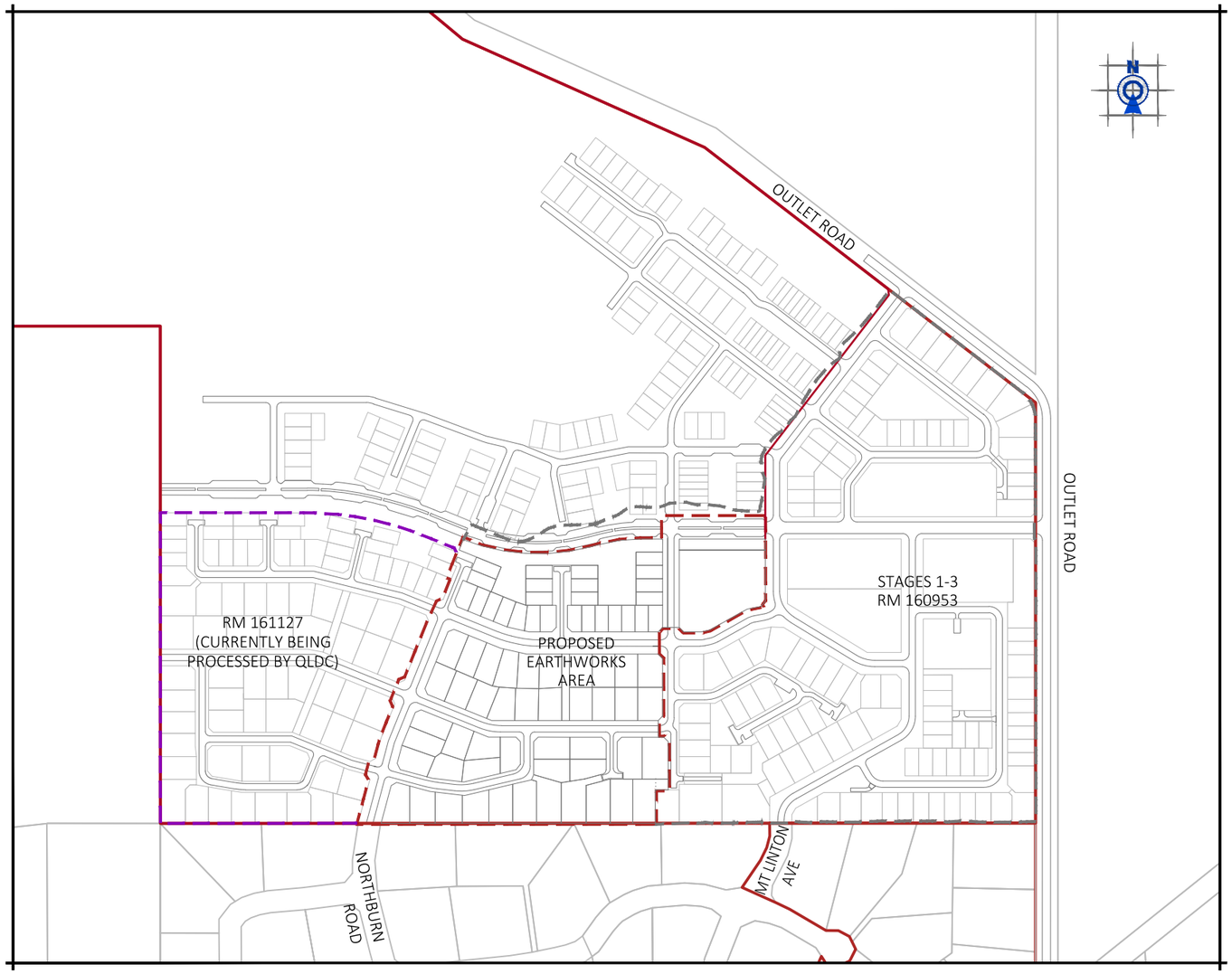
While some system upgrades are known to be necessary, further modelling by Council using its new calibrated water supply model is required to confirm the exact timing. At this stage the subdivision of Stage 4-6 covers only a small part of the Northlake zone. It is anticipated that detailed modelling by Council will confirm what subdivision stages can connect before triggering offsite upgrades.

Development contributions payable for this development (less the credit for upgrading the system) will mitigate any effect this development will have on Council's existing infrastructure.

Alex Todd
Paterson Pitts Group Limited (Wanaka)

Appendix 1: Stages 4-6 Bulk Earthworks Drawings

Northlake : Bulk Earthworks Stages 4-6



PLAN INDEX

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103	Cut / Fill Contours	0	05/12/2016
104	Cross Sections - Detail 1	0	05/12/2016
105	Cross Sections - Detail 2	0	05/12/2016
106	Site Management Detail	0	05/12/2016

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E wanaka@ppgroup.co.nz

Client & Location:
NORTHLAKE INVESTMENTS LTD
Northlake Stages 4-6

Purpose & Drawing Title:
Plan Index

Surveyed by:	PPG	Original Size:	Scale:
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Drawn by:	DA		DO NOT SCALE
Checked by:	AGT		
Approved by:	MJB		
Job No: W4481-7	Drawing No. 041	Sheet No: 100	Revision No: 0
			Date Created: 05/12/2016

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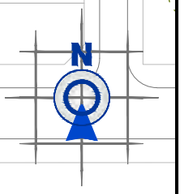
NOTES:
Major contour interval = 5.0m
Minor contour interval = 1.0m
Extent of Earthworks
Extent of RM160953
Extent of RM161127



335.0
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335.0
330.0

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Purpose & Drawing Title:
Existing Contours

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Approved by:	MJB		
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			Date Created: 05/12/2016

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NOTES:
Major contour interval = 5.0m
Minor contour interval = 1.0m
Extent of Earthworks
Extent of RM160953
Extent of RM161127

Notified Application & Submissions & Further Submissions 185

Stages 8-9 design contours
as per RM 161127

Stages 1-3 design contours
as per RM 160953

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Purpose & Drawing Title:
Proposed Contours

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Approved by:	MJB		
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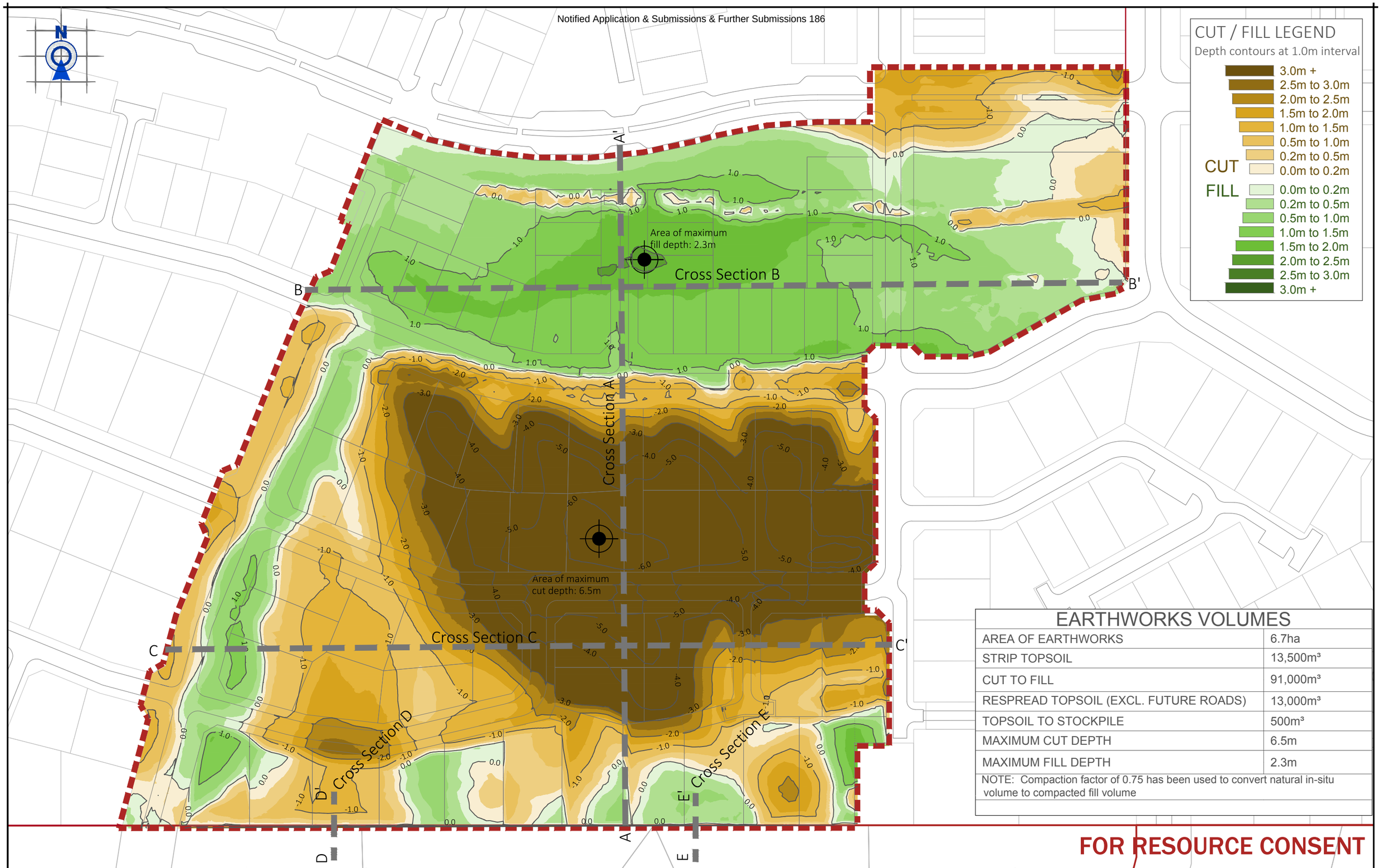

EARTHWORKS VOLUMES

AREA OF EARTHWORKS	6.7ha
STRIP TOPSOIL	13,500m³
CUT TO FILL	91,000m³
RESPREAD TOPSOIL (EXCL. FUTURE ROADS)	13,000m³
TOPSOIL TO STOCKPILE	500m³
MAXIMUM CUT DEPTH	6.5m
MAXIMUM FILL DEPTH	2.3m

NOTE: Compaction factor of 0.75 has been used to convert natural in-situ volume to compacted fill volume

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Northlake Stages 4-6

Purpose & Drawing Title:
Proposed Earthworks
Cut / Fill Plan

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Designed by:	AGT	A3	1:1250 @ A3
Drawn by:	DA		DO NOT SCALE
Checked by:	AGT		
Approved by:	MJB		
Job No: W4481-7	Drawing No. 041	Sheet No: 103	Revision No: 0
			Date Created: 05/12/2016

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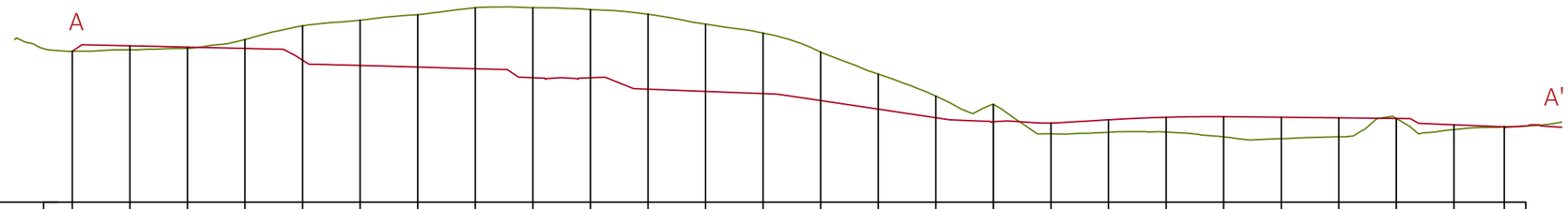

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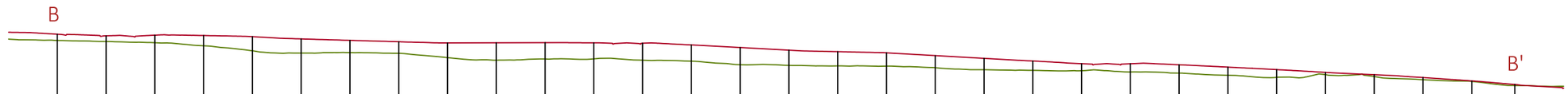
EXISTING GROUND	342.1	342.2	342.4	343.1	344.3	344.8	345.3	345.9	345.9	345.7	345.3	344.5	343.7	342.1	340.1	338.2	337.5	334.9	335.1	335.1	334.7	334.5	334.7	336.3	335.3	335.6	
CUT / FILL TO DESIGN	0.0	0.3	0.1	-0.8	-3.0	-3.9	-4.6	-5.3	-6.1	-5.9	-6.5	-5.8	-5.3	-4.2	-3.1	-1.9	-1.5	0.9	1.1	1.3	1.8	1.9	1.7	0.0	0.4	-0.1	
CHAINAGE	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	249	

BULK EARTHWORKS CROSS SECTION A

A3 HORZ SCALE 1:1000 A3 VERT SCALE 1:500



DATUM RL 326.0

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EXISTING GROUND	336.7	336.6	336.5	336.2	335.7	335.4	335.5	335.4	335.0	334.7	334.8	334.8	334.7	334.6	334.2	334.2	334.1	334.1	333.9	333.7	333.7	333.6	333.5	333.4	333.2	332.9	333.2	333.0	332.7	332.5	332.1
CUT / FILL TO DESIGN	0.6	0.6	0.8	1.1	1.4	1.4	1.3	1.2	1.5	1.8	1.7	1.6	1.7	1.7	1.8	1.6	1.5	1.4	1.2	1.2	1.0	0.7	0.8	0.9	0.8	0.8	0.2	0.2	0.2	0.0	0.1
CHAINAGE	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	299

BULK EARTHWORKS CROSS SECTION B

A3 HORZ SCALE 1:1000 A3 VERT SCALE 1:500

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Client & Location:
NORTHLAKE INVESTMENTS LTD
Northlake Stages 4-6

Purpose & Drawing Title:
Cross Section - Detail 1

Surveyed by:	PPG	Original Size:	Scale:
Designed by:	AGT	A3	AS SHOWN
Drawn by:	DA		DO NOT SCALE
Checked by:	AGT		
Approved by:	MJB		
Job No: W4481-7	Drawing No. 041	Sheet No: 104	Revision No: 0
			Date Created: 05/12/2016

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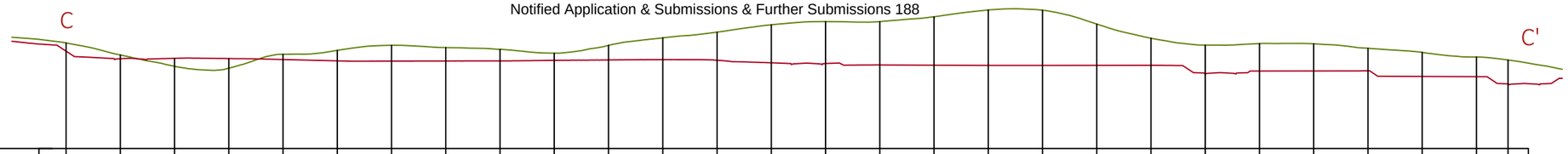

DATUM RL 333.0

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EXISTING GROUND	342.7	341.6	340.6	340.4	341.7	342.0	342.5	342.3	342.1	341.8	342.5	343.2	343.7	344.4	344.7	344.7	345.1	345.8	345.7	344.5	343.2	342.5	342.7	342.6	342.2	341.9	341.4	341.2	
CUT / FILL TO DESIGN	-0.8	-0.3	0.7	0.9	-0.5	-1.0	-1.5	-1.2	-1.1	-0.7	-1.3	-2.0	-2.6	-3.5	-3.9	-4.0	-4.5	-5.1	-5.1	-3.8	-2.5	-2.7	-2.5	-2.5	-2.1	-2.2	-1.8	-2.2	
CHAINAGE	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	266	

BULK EARTHWORKS CROSS SECTION C

A3 HORZ SCALE 1:1000 A3 VERT SCALE 1:500

DATUM RL 338.0

DESIGN SURFACE			344.4	344.3	
EXISTING GROUND	346.2	346.7	345.6	345.4	
CUT / FILL TO DESIGN	0.0	0.0	-1.3	-1.2	
CHAINAGE	0	10	20	25	

BULK EARTHWORKS CROSS SECTION D

A3 HORZ SCALE 1:1000 A3 VERT SCALE 1:500

DATUM RL 336.0

DESIGN SURFACE			341.9	341.8	
EXISTING GROUND	341.8	341.5	341.4	341.3	
CUT / FILL TO DESIGN	0.0	0.0	0.5	0.5	
CHAINAGE	0	10	20	25	

BULK EARTHWORKS CROSS SECTION E

A3 HORZ SCALE 1:1000 A3 VERT SCALE 1:500

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Purpose & Drawing Title:

Cross Section - Detail 2

Surveyed by:	PPG	Original Size:	Scale:	
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Drawn by:	DA		DO NOT SCALE	
Checked by:	AGT			
Approved by:	MJB			
Job No:	Drawing No.	Sheet No:	Revision No:	Date Created:
W4481-7	041	105	0	05/12/2016

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Notified Application & Submissions & Further Submissions 189

SITE ACCESS

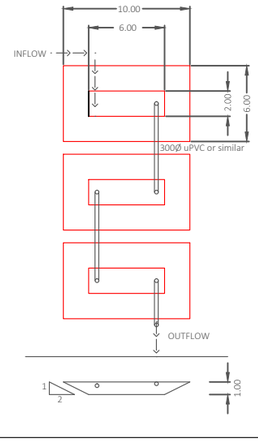
SITE OFFICE & CONSTRUCTION LAYDOWN AREA

OUTLET ROAD

KEY:

- EXISTING PRIMARY OVERLAND FLOW PATH
- EXISTING SECONDARY OVERLAND FLOW PATH
- RE-DIRECTED OVERLAND FLOW PATH
- IRRIGATION TOBY
- EXTENT OF EARTHWORKS
- SITE ACCESS POINT

TYPICAL DETENTION POND GALLERY



DRAINAGE CHANNEL DIRECTED INTO DETENTION POND

DETENTION POND - SEE INSET FOR TYPICAL DETAIL

NOTE:
EXISTING OVERLAND FLOWPATH SHOWN AS IF STAGES 1-3 EARTHWORKS ARE COMPLETE

DETENTION POND

SILT FENCE TO CONTROL PRIMARY OVERLAND FLOW

EXISTING 300MM CULVERT UNDER OUTLET ROAD - DISCHARGE FROM CULVERT CONTINUES ACROSS EXISTING OVERLAND FLOW PATH. PROTECT INLET USING SILT FENCE AND HAY BALES.

Lot 3 DP 300408
Allenby Farms Ltd

STAGES 8-9
(RM 161127)

EXISTING OVERLAND FLOW PATHS TO BE RE-DIRECTED AS REQUIRED DURING SITE WORKS

STAGES 1-3
UNDER CONSTRUCTION
(RM 160186)

OUTLET ROAD

NO SITE ENTRANCE

EMERGENCY SITE ACCESS ONLY

EMERGENCY SITE ACCESS ONLY

NO SITE ENTRANCE

NORTHBURN ROAD

MT LINTON AVE

Glenaray Crescent

Nokomai Street

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Client & Location:

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Northlake Stages 4-6

Purpose & Drawing Title:

Preliminary Site Management Plan For Bulk Earthworks

Surveyed by:	PPG	Original Size:	Scale:
Designed by:	AGT	A3	1:3000 @ A3
Drawn by:	DA		DO NOT SCALE
Checked by:	AGT		
Approved by:	MJB		
Job No:	Drawing No.	Sheet No:	Revision No:	Date Created:
W4481-7	041	106	0	05/12/2016

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Appendix 2: Site Management Plan

CIVIL CONSTRUCTION

CIVIL WORKS • EARTHWORKS • DRAINAGE • ROADING • GENERAL CONTRACTING

SITE MANAGEMENT PLAN

NORTHLAKE

wanaka

For: Northlake Development - Bulk Earthworks stage 1 – 7
- Stage 5 contamination
- Civils stage 1 - 3

From: Civil Construction Limited

Date: 12th July 2016

Status: Final

Version: 5

CIVIL CONSTRUCTION

CIVIL WORKS • EARTHWORKS • DRAINAGE • ROADING • GENERAL CONTRACTING

Contents:

CIVIL CONSTRUCTION

CIVIL WORKS • EARTHWORKS • DRAINAGE • ROADING • GENERAL CONTRACTING

1. Outline

The following outlines how Civil Construction will manage potential issues surrounding the site to ensure compliance with the conditions of the resource consent (RM 160186).

This is a live document and will be updated as and when necessary. Civil Construction recognises the intrinsic value of the natural environment and is committed to its protection.

This document will be held on site, with all contractors and staff briefed on its requirements.

The contents of this Site Management Plan are covered in the Civil Construction Northlake Development Site Induction to ensure all employees and third parties are aware of the key points within this plan.

2. Site layout

The site is located off Outlet Road in Wanaka. The site is contained with part of a 108 hectare block of land owned by Northlake Investments Limited (NIL).

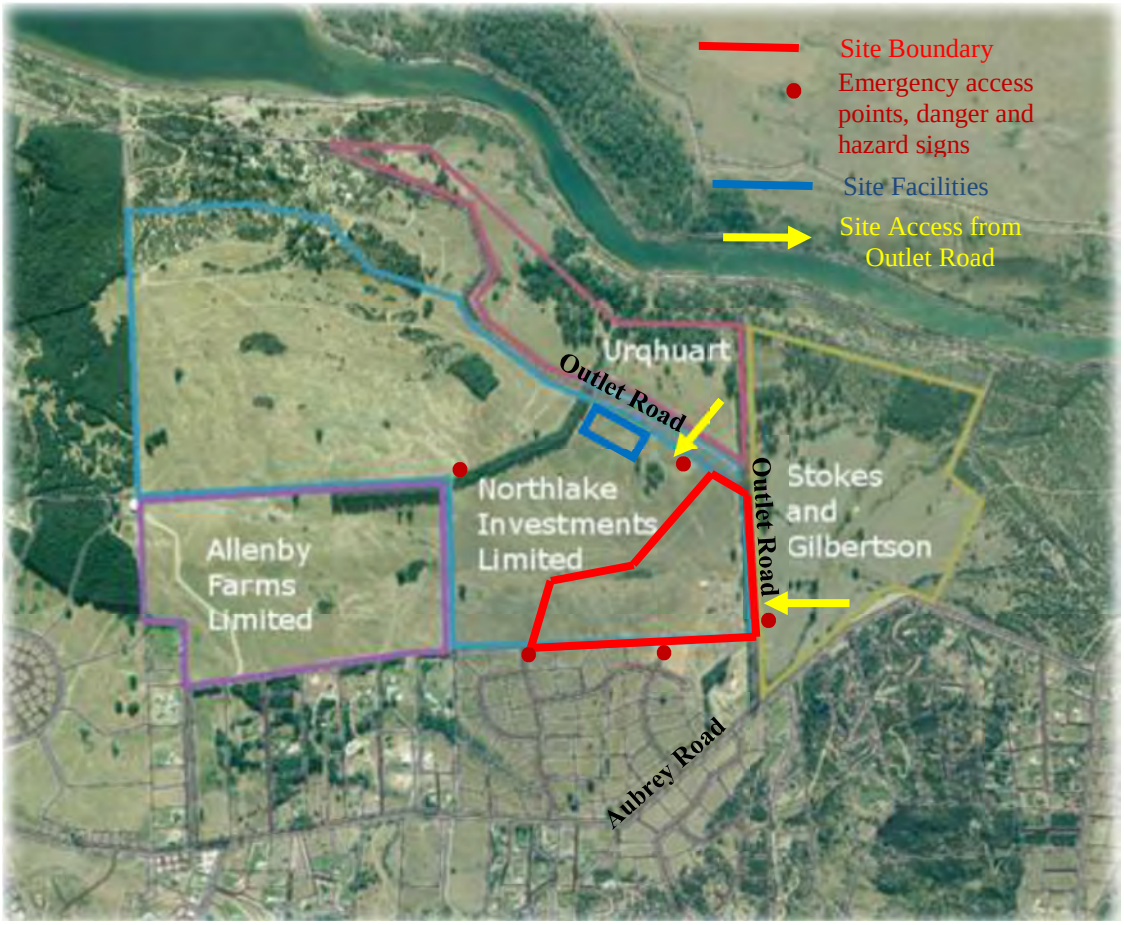


Figure 1: Northlake Development Wanaka Site Layout and land ownership. \

CIVIL CONSTRUCTION

CIVIL WORKS • EARTHWORKS • DRAINAGE • ROADING • GENERAL CONTRACTING

Figure 2: Northlake Development Wanaka Site Facilities Layout

3. Ongoing management and monitoring thorough the project

The following areas have been identified as requiring ongoing management and monitoring throughout the project:

- Surrounding buildings and neighbours
- Work hours
- Construction vehicles, visitor parking and site deliveries.
- Site access & fencing
- Pedestrians and cycle traffic in adjacent areas
- Noise
- Vibration
- Dust
- Sediment/erosion control
- Earthworks
- Vegetation
- Fuel / Chemical storage
- Communication plan
- Complaints process

3.1 Surrounding Buildings and Neighbours

- Letter drops will be completed to surrounding residences prior to the bulk earthworks commencing. Surrounding residents will be kept informed of work activities on a monthly basis through email or letter drop. Recipients of the email or letter will have the opportunity to provide feedback and / or meet with Civil Construction.
- Site Hazard Board located at the site entrance will have site management contact details.
- Site management is available for liaison with surrounding residents.
- The neighbours to the site will be informed as required of any works that is likely to cause disturbance. The disturbance to neighbours is to be minimised in all circumstances.
- Existing buildings will be isolated with a fence on the boundary

3.2 Work Hours

Hours of operating for earthworks will be:

- Monday to Saturday (inclusive): 7:30am to 6:30pm
- Sunday and public holiday: No Activity

In addition, no heavy vehicles are to enter or exit the site and no machinery will start operate earlier than 7:30am. All activity on the site is to cease by 6:30pm.

Establishment operations works are to begin on Monday 4th of July 2016, with earthworks planned to commence 7 days after SMP submission.

3.3 Site access & Fencing

- The site will be kept securely fenced to control access and ensure no unauthorised access to the site.
- The main site access via Outlet road will be for all visitors and the construction traffic.
- Emergency access points in addition of site layout and sign boards.
- Access to site, particularly fencing will be monitored and assessed on an ongoing basis. Where necessary additional measures will be taken to ensure both the safety of members of the public and site security.

3.4 Visitor, Site Parking & Site Deliveries

- All vehicles will be parked adjacent to the site office unless otherwise required onsite.
- All deliveries will be to site office and adjacent laydown area via the main site entrance from Outlet road.

3.5 Pedestrian and Cycle Access in Adjacent Areas

- Construction activities will be isolated from public walk / cycle ways by fence.

3.6 Noise

- The detailed requirements of noise management and the practices to be adopted to comply with NZS 6803:1999.
- All practicable steps are taken to minimise noise during the contract works.
- The works shall be carried out in such a manner as to cause the least inconvenience to the public.
- Machinery won't warm up closer than 100m from nearest dwelling.
- Construction depot will be away from houses and isolated by soil band.
- Effects associated with noise will be controlled through hours of operations

3.7 Vibration

- The earthworks shall cease if at any time a justifiable complaint regarding effects from vibration associated with earthworks activities.
- The issue will be investigated and alternative measures and/or operational changes that can be made to resolve, mitigate or avoid the issue resulting from vibration will be discussed.
- In the event that these concerns cannot be resolved between the parties, suitably qualified professional shall be engage to asses vibration associated with earthworks and determine any adverse effect on land and buildings beyond this site. This report to be adopted to comply with the standard BS 5228:1992 or a similar internationally accepted standard.

- Civil Construction is proposed to use non vibration equipment to undertake the earthworks.

3.8 Dust Control

- Dust will be controlled by water carts by ensuring haul roads, stockpiles and exposed materials are wetted down.
- Areas such as entrances to and from site will be dampened with K lines systems.
- Once the onsite water supply has been established all water will be source from on site.
- Stripped areas will be kept as small as possible whilst ensuring works can progress economically.
- Top-soil and seeding will be re-spread to the finished lots areas as soon as practicable within 3 weeks after finished earthworks.
- If dust is a nuisance to surrounding buildings work will cease until the issue has been brought under control. Certain works cease during particularly windy days when dust cannot be controlled.

3.9 Erosion Control

- All construction works will be monitored for erosion weekly and following rain event of 10mm in 12 hour period.
- Suitable management of overland water by cut off drains, piping and dispersement will eliminate and/or minimise concentrated flows from causing erosion.
- Earth worked and exposed areas will be stabilised by reinstatement of vegetation as per the resource consent (RM160186).

3.10 Sediment, Runoff, Silt Control

- Primary, Secondary and Tertiary sediment control will be implemented in the means of catchment areas controlled by surface drains, hard piping to detention pond for sediment retention before final disposal into either on site soakage pits or into existing storm water system. Use of silt fence will be implemented, locations to be confirmed based on detailed site assessment of natural surface water movement. These will be monitored and cleared when required.
- The silt catchment strategy revolves around assessment of existing over land water flows (or digging cut-off drains where required) and constructing settlement pond at selected location. Silt fences are then placed downstream of the ponds for final filtering prior to discharge.
- Controls to manage potential silt run-off will be in place prior to earthworks commencing in areas that have the potential to discharge silt.

- Silt controls will be assessed on a monthly basis and after heavy rainfall (10mm within 12hours) to monitor their effectiveness, ensure they are cleaned out regularly, and improve the silt control system as required.

3.11 Construction methodology

- Prior to commencing earthworks on the site construction vehicle crossing will be installed. All construction traffic will use this crossing to enter and exit the site. Minimum standard for this crossing is 150mm depth of compacted AP65 metal that extends 20m into the site. Shake down grid will be installed if finding ground is particularly sticky and causing tracking out onto Outlet Road and beyond.
- Earthworks methods are to be in line with industry best practice:
  1. Establishment of silt and dust control measures
  2. Strip and stockpile soil
  3. Cut to Fill
  4. Subgrade preparation
  5. Re-spread stockpiled soil on finished lots
- Contaminated Soil Works –works will be undertaken in accordance with the Contaminated Soil Management Plan (May 2016)
- Subdivision Works methods are to be in line with industry best practice.
- Plant only operates during permitted times.
- All equipment is subject to pre start inspections to ensure it is fit for purpose and safe to use.
- All staff will be made aware that in the event of uncovering koiwi tangata (human skeletal remains), waahi taoka (resources of importance), waahi tapu (places or features of special significance) or other Maori artefact material, all activity in the immediate area is to cease. Site management are to notify Council, Tangata Whenua, Heritage New Zealand Pouhere Taonga, and in the case of human remains the New Zealand Police. Work will not recommence in the area until directed by the relevant authorities.
  Ben Teele of Origin Consultants Limited (Ph.: 03 409 0607) has been appointed for archaeological monitoring of the development.

3.12 Vegetation

Revegetation will be implemented as soon as practicable and as the seasons allow after the completion of the works. Vegetation of the disturbed areas will decrease sediment yield from the disturbed areas and is considered the most appropriate method of preventing on-going sedimentation post-construction works.

3.13 Fuel / Chemical storage

Location of Fuel (chemical) storage / refuelling station is shown in Figure 2: Northlake Development Wanaka Site Facilities Layout.

3.14 Communication Plan

The representative of Civil Construction Limited for Northlake development is:

Paul Horrell
Civil Construction Limited
027 430 1664

Scott Southerland
Civil Construction Limited
027 430 1675

The secondary contact is the Civil Construction Limited office, phone 03 442 3979.

A project information board will be erected at the access points to the development at the Outlet road. The project information boards will be kept in a tidy condition for the duration of the development.

3.15 Complaints Process

While it is hoped that the above measures will prevent complaints from surrounding residents and the wider community, there is potential for complaints or concerns to be reported via two channels:

a. Direct to site management
b. Via QLDC

Regardless of the reporting channel, Civil Construction will assess complaints using the process shown in Figure 3.

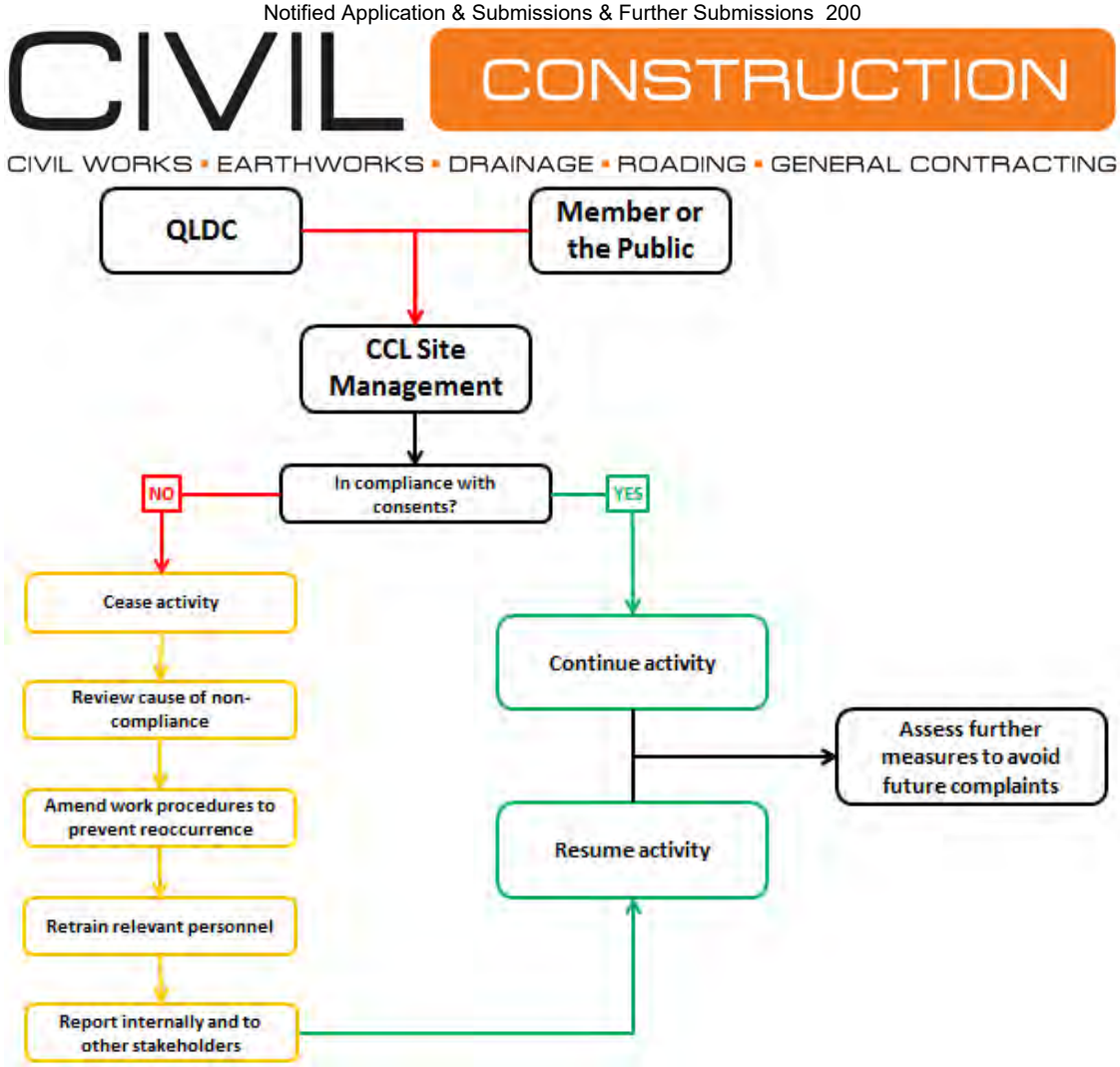


Figure 3: Northlake Development Complaints Management Process

4. Contaminated soil management plan

A contaminated soil management plan (CSMP) has been prepared by Davis Consulting Group Limited and provides a document to guide the excavation and disposal of arsenic-impacted soils and the subsequent ongoing management of the contaminated soil in order to mitigate risk to human health and the environment. A copy of CSMP is annexed to this site management plan.

5.1 Limitations

The mitigation measures relate is specific to the land area specified and the hazard of soil arsenic and boron contamination.

4.2 Contamination Sources

The area for excavation consists of soils with arsenic concentrations exceeding 25mg/kg. Arsenic is considered to have relatively high toxicity and to be non–threshold contaminant. A secondary objective is to remove soils impacted with boron.

4.3 Mitigation Measures

- Excavation and disposal of contaminated soil and stockpiled soil from the encapsulation cell will be sprayed with water prior to end during excavation works when dust generation is likely.
- If dust appears to be migrating off site outside of operation then continuous dampening will be implemented.
- K-lines system will be utilise to provide ongoing wetting if necessary.
- Overland flow uphill of the encapsulation area will be diverted away/around the encapsulation area.
- Rainfall that enters the contaminated excavation site will be channelled to prevent suspended contaminated soil leaving the site.
- In heavy rainfall events the sediment traps will be maintained.
- To prevent tracking of contaminated soil off the site, trucks shall avoid areas of contamination. A staging area will be set up and excavators deliver soil to the trucks.
- If excavators are require to leave the site they will be water blasted. Wash water will be collected within the area of excavation.
- PPE including protective gloves and coveralls shall be worn at all times during the excavations to further minimise the exposure to the soil.
- All earthmoving machinery shall have air conditioned cabins to minimise inhalation of dust.

5. Traffic Management Plan

Traffic Management Plan (TMP) has been prepared by Southern Safety Services Limited. A TMP has been submitted to address increased heavy traffic in the Outlet and Aubrey Rd precinct for the duration of the project. Other TMP's will be required for specific works, including service upgrades and/or connections to the existing infrastructure network and other works as required. All TMP's are live documents, and when active will be reviewed. Updates will be made as they are deemed necessary to be made. A copy of TMP is attached to this site management plan.

On behalf of Civil Construction Ltd: ***Date:***

Name: Paul Horrell

Signature:

On behalf of Client: ***Date:***

Name: Marc Bretherton

Signature:

References

This Site Management Plan has been prepared using the following document as the prime reference:

- Paterson Pitts Group "Preliminary Site Management Plan for Bulk Earthworks" Ref. W4481-7 013, sheet 108 dated 5th July 2016
- Paterson Pitts Group "Specification for Construction – Bulk EW" Ref. W4481 – 7
- Riley Consultants Limited "Stormwater Overview Report" Ref. 150693-C, dated 8 April 2016
- Riley Consultants Limited "Geotechnical Assessment Northlake Development, Wanaka" dated 17 February 2016
- Resource Consents RM 160186
- Traffic Management Plan

CIVIL CONSTRUCTION

CIVIL WORKS ▪ EARTHWORKS ▪ DRAINAGE ▪ ROADING ▪ GENERAL CONTRACTING

Annexure 1: Contaminated Soil Management Plan

Contaminated Soil Management Plan

Aubrey Road Subdivision Arsenic Contaminated Soil Remediation
(May, 2016)

INTRODUCTION

Purpose of the Site Management Plan

This Contaminated Soil Management Plan (CSMP) has been prepared by Davis Consulting Group Limited (DCG) for Michaela Meehan and provides a document to guide the excavation and disposal of arsenic-impacted soils and the subsequent ongoing management of the contaminated soil in order to mitigate risks to human health and the environment.

Background

The site is located on Aubrey Road, Wanaka, in an area consented for rural residential landuse. The former Iron Hill Timber Treatment Plant operated on the site from 1982 to 2007. A detailed site investigation identified some areas of the site that has elevated arsenic concentrations that exceed background concentrations. Remediation of the site is required to ensure site soils are suitable for residential landuse.

The Remedial Action Plan (RAP) prepared for the site proposes to excavate contaminant hotspots identified by the detailed site investigation in order to remove the majority of the contaminant source from the site, significantly reducing the risk to human health. Figure 1 provides a plan showing the area for excavation and the subsequent disposal site.

Limitations

The mitigation measures presented in this report relate exclusively to the land area specified and the hazard of soil arsenic and boron contamination. This report does not include other potential hazards that may be encountered on site and all works to be undertaken are required to comply with the Health and Safety at Work Act (2015).

CONTAMINATION SOURCES, EXPOSURE PATHWAYS AND RECEPTORS AND MITIGATION MEASURES

Contaminant Sources

The area for excavation consists of soils with arsenic concentrations exceeding 25mg/kg. Arsenic is considered to have a relatively high toxicity (MfE, 2001) and is considered to be a non-threshold contaminant. It is understood to present a risk at any level of exposure. A secondary objective is to remove soils impacted with boron. While not considered a risk to human health these areas should coincide with the arsenic remedial areas and could allow the ORC to change the HAIL classification to state the impacted lots are 'at or below background concentrations'.

Exposure Pathways, Receptors and Mitigation Measures

Excavation and Disposal Works

The receptors associated with the excavation and disposal of the excavated soil include the personnel undertaking the work. The exposure pathways for site workers include soil ingestion via inhalation of dust, and dermal exposure. There is also a possibility that neighbouring properties may have some exposure to dust.

Dust Mitigation:

To limit exposure of site workers and neighbouring properties to dust generated during excavation of the encapsulation cell, excavation and disposal of contaminated soil and stockpiled soil from the encapsulation cell shall be sprayed with water prior to and during excavation works when dust generation is likely. This approach will reduce dust discharges and exposure. The work shall be undertaken in calm conditions when the risk of dust migration offsite is low. If dust appears to be migrating off site outside of operation then continuous dampening will be implemented.

Dust will also be managed by completing the remedial work within the shortest timeframe possible to reduce exposure time of disturbed contaminated soil and minimising the potential for dust to migrate off site.

Stormwater and Soil Management:

Rainfall that enters the contaminated excavation site will be channelled to remain within the excavation perimeter to prevent suspended contaminated soil leaving the excavation site. Stormwater outside of the excavation site will be directed to drains with sediment traps to allow sediment to settle and not leave site. In heavy rainfall events the sediment traps will be maintained.

To prevent tracking of contaminated soil off the site, trucks shall avoid areas of contamination. A staging area will be set up and excavators will deliver soil to be moved to the trucks. Due to the short distance over which soil will be transported, loads will not be covered, but dampening down of soil prior to transport will help to prevent dust discharges if required. If excavators working within the contaminated area is required to leave the site, they will be thoroughly water blasted to remove contaminated soil prior to leaving the area. Washwater will be collected within the area of excavation.

Noise and Odour Control:

Excavation activity will generate some noise however the activity will only occur 8am to 5pm Monday to Friday and 8am – 1pm on Saturday with no works to be undertaken on Sundays. No odour is anticipated with the nature of this activity. Neighbouring resident's properties will be inspected by the contractor's engineer prior to commencement of earthwork activities. A Frequently Asked Question (FAQ) sheet will also be provided to

neighbouring properties prior to the commencement of the earthworks.

Personnel Protective Equipment:
The risk of dermal exposure is relatively minimal, however PPE including protective gloves and coveralls shall be worn by earthworks contractors at all times during the excavation to further minimise exposure to the soils.

All earthmoving machinery (excavators and trucks) shall have air conditioned cabins to minimise inhalation of dust that may occur during the earthworks activities.

Operation of the Disposal Site
Upon completion of the disposal site's construction, a low permeability HDPE liner will be installed over the impacted soil to limit rainfall percolation. This will mitigate the potential exposure of groundwater from leachate which could generate if the liner was not installed. Furthermore, the liner will be overlain with a polythene sheet in order to prohibit plant root penetration of the liner to maintain its integrity and prohibit deep plant roots from entering contaminated soil.

There is a risk that excavation workers in the vicinity of the encapsulation cell could expose workers to the impacted soils if excavation was advanced through the liner. To mitigate the risk of exposure, the depth and area of the disposal site will be accurately surveyed and delineated on the site plan. This information will be incorporated on the Land Information Memorandum for the site and may be included on a consent notice. Any notice shall clearly state that the liner shall not be disturbed. Providing this advice is adhered to, the likelihood of exposure is low. Hazard warning markers will be placed between the liner and the topsoil as a further measure to protect the liner from inadvertent excavation works.

CONTACTS

Regulatory Bodies
The main regulatory authority contacts with an interest in this SMP include:

- Queenstown Lakes District Council – 03 441 0499
- Otago Regional Council – 0800 474 082
- Public Health South 0 03 450 9156

Emergency Services
New Zealand National Poisons Centre – 0800 764 766
New Zealand Fire and Ambulance Services – 11

CIVIL CONSTRUCTION

CIVIL WORKS • EARTHWORKS • DRAINAGE • ROADING • GENERAL CONTRACTING

Figure 1: Location of Remedial Areas and Encapsulation Cell

Notified Application & Submissions & Further Submissions 206

SITE ACCESS

SITE OFFICE & CONSTRUCTION LAYDOWN AREA

OUTLET ROAD

AREA C

AREA B

AREA A

AREA D

AREA E

AREA F

TOPSOIL STOCKPILE AREA

RE-DIRECT OVERLAND FLOW USING MAIN FUTURE ROAD AS ALIGNMENT

RE-DIRECT OVERLAND FLOW TO NEW CHANNEL IN FUTURE ROAD

DRAINAGE CHANNEL DIRECTED INTO DETENTION POND

DETENTION POND - SEE INSET FOR TYPICAL DETAIL

SILT FENCE TO CONTROL PRIMARY OVERLAND FLOW

EXISTING OVERLAND FLOW PATH TO BE RE-DIRECTED AS REQUIRED DURING SITE WORKS

EXISTING 300MM CULVERT UNDER OUTLET ROAD - DISCHARGE FROM CULVERT CONTINUES ACROSS EXISTING OVERLAND FLOW PATH. PROTECT INLET USING SILT FENCE AND HAY BALES.

SALES PRECINCT - SURROUNDED BY TEMPORARY FENCE PANELS

SILT FENCE TO CONTROL SECONDARY OVERLAND FLOW

EXISTING METALLED ACCESS TRACK

SITE ACCESS

EMERGENCY SITE ACCESS ONLY

EMERGENCY SITE ACCESS ONLY

SILT FENCE TO CONTROL SECONDARY OVERLAND FLOW

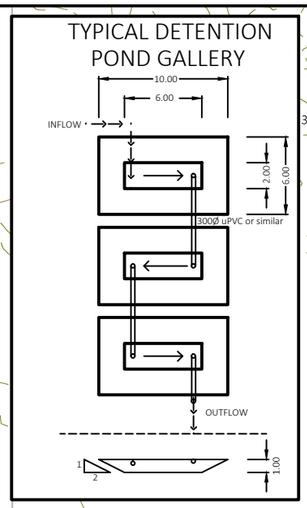
NORTHBURN ROAD

MT LINTON AVE

OUTLET ROAD

95m

TYPICAL DETENTION POND GALLERY



NOTES

1. The contractor shall be responsible for locating all existing services prior to commencement of works. The contractor shall make good at their own expense any damage to existing services
2. Levels are in terms of Dunedin Vertical Datum 1958
3. All works are to be installed as per the Specification for Construction.
4. Major contours at 5.0m interval
   Minor contours at 1.0m interval

LEGEND

- EXISTING PRIMARY OVERLAND FLOW PATH
- EXISTING SECONDARY OVERLAND FLOW PATH
- RE-DIRECTED OVERLAND FLOW PATH
- IRRIGATION TOBY
- EARTHWORKS AREA BDY
- SITE ACCESS POINT
- LIMIT OF EARTHWORKS
- EMERGENCY ACCESS
- ROCK CHECK DAM (Locations to be confirmed on site)
- SILT FENCE

FOR CONSTRUCTION

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0800 PPGROUP

WANAKA
19 Reece Crescent
or P.O. Box 283
Wanaka 9343
T 03 443 0110
E wanaka@ppgroup.co.nz

Client & Location:

NORTHLAKE INVESTMENTS LTD Bulk Earthworks

Purpose & Drawing Title:

Site Management Plan For Bulk Earthworks & Stage 5 Remediation Works

Surveyed by:	PPG	Original Size: A3	Scale: 1:2500 @ A3
Designed by:	AGT		
Drawn by:	AGT		DO NOT SCALE
Checked by:	MJB		
Approved by:	MJB		
Job No: W4481-7	Drawing No: 013	Sheet No: 108	Revision No: 2
			Date Created: 13/07/2016

L:\DATA\4400\4481-7 STAGES 1-3\ACAD\W4481-7 013 BULK EARTHWORKS STAGES 1-7 FOR CONSTRUCTION.DWG

Southern Safety Services Limited

Traffic Management Plan – Short Form

*Complete **short form** if simple activity and RCA permits. Refer to the NZ Transport Agency's Traffic control devices manual, part 8 Code of practice for temporary traffic management (CoPTTM), section E, appendix A for a guide on how to complete each field.*

Organisations/ TMP reference	**TMP reference:** 766	**Contractor:** CIVIL CONSTRUCTION	**Principal** *(Client)*: CIVIL CONSTRUCTION **RCA:** QLDC			
Location details and road characteristics	**Road names and suburb**		**House no. / RPs** *(From and to)*	**Road level**	**Permanent speed**	**AADT/Peak flows**
	Outlet Rd, Wanaka		1712/0.000 - 1712/1.309	LV	50KM	267
	Aubrey Rd		620/3.111 – 620/3.652	L1	80KM	
Description of work activity	Roading Upgrade along Outlet Rd Options for traffic Management include: - 1. Traffic lights - 2. Give Way System - 3. Stop and Go Please find attached layouts.					

Planned work programme

Start date	04/07/16	**Time**	8.30am	**End date**	31/03/17	**Time**	17pm
Consider significant stages, for example: • road closures • detours • no activity periods.	No delays expected						
Alternative dates if activity delayed	TBC						

Road aspects affected *(delete either Yes or No to show which aspects are affected)*

Pedestrians affected?	N	**Property access affected?**	N	**Traffic lanes affected?**	Y
Cyclists affected?	N	**Restricted parking affected?**	N	**Delays or queuing likely?**	N

TSL/ Diagram *(see TSL decision matrix for guidance)*	**TSL details as required** Approval of Temporary Speed Limits (TSL) are in terms of Section 5 of Land Transport Rule: Setting of Speed Limits 2003,Rule 54001 *(List speed, length and location)*	**Times** *(From and to)*	**Dates** *(Start and finish)*	**Diagram ref. no.s** *(Layout drawings or TMDs)*
Attended day/ night	A temporary maximum speed limit of 30 km/h is hereby fixed for motor vehicles travelling over the length of 400 m situated between 1712/0.000 - 1712/1.309	08.30 – 17.00	4/07/16 – 31/03/17	Layout 1
Unattended day/ night	N/A)			

Contingency plan

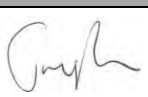
If long queues form or delays exceed 5mins *(or any other period required by RCA)*, site to be disestablished or additional lanes made available.	Adjust TMD to suit unforeseen circumstances *(eg weather or site overlaps with another work site)*.	Emergency services will be accommodated and access provided through the site as required.

Add additional contingencies:

Contact details

	Name	24/7 contact number	CoPTTM ID	Qualification	Expiry date
Principal	CIVIL CONSTRUCTION / Jan Zdara	027 430 1670			
TMC	Tony Francis – QLDC	021 849 912	15470	L1 STMS	27/07/18
Engineers' representative					
Contractor	CIVIL CONSTRUCTION / Jan Zdara	027 430 1670			
STMS	Trevor Page	021 033 8340	83400	L1 STMS	12/06/18
TC					
Others as required					

TMP preparation (or approval if STMS delegated authority to approve TMPs)
Delete the option that does not apply (either prepared or approved)

Prepared By	Trevor Page	04/07/16		83400	L1 STMS	12/06/18
	Name	Date	*Signature*	*ID no.*	*Qualification*	*Expiry date*

This TMP meets CoPTTM requirements		**Number of diagrams attached**				
TMP returned for correction						
	Name	Date	*Signature*	*ID no.*	*Qualification*	*Expiry date*

Engineer/TMC to complete following section when approval or acceptance required

Approved by TMC or engineer *(delete one)*						
	Name	Date	*Signature*	*ID no.*	*Qualification*	*Expiry date*
Acceptance by TMC *(if required)*						
	Name	Date	*Signature*	*ID no.*	*Qualification*	*Expiry date*

Qualifier for engineer or TMC approval

Approval of this TMP authorises the use of any regulatory signs included in the TMP or attached traffic management diagrams. This TMP is approved on the following basis:

1. To the best of the approving engineer's/TMC's judgment this TMP conforms to the requirements of CoPTTM.
2. This plan is approved on the basis that the activity, the location and the road environment have been correctly represented by the applicant. Any inaccuracy in the portrayal of this information is the responsibility of the applicant.
3. The STMS for the activity is reminded that it is the STMS's duty to postpone, cancel or modify operations due to the adverse traffic, weather or other conditions that affect the safety of this site.

TMP or generic plan reference	Notified Application & Submissions & Further Submissions 209

On-site record must be retained with TMP for 12 months.

ON-SITE RECORD

To be used if information below not covered in company documentation.

Location details	**Road names(s):**	**House number/RPs:**	**Suburb:**

STMS (in charge)					
	Name	*ID Number*	*Expiry date*	*Signature*	*Date and time*
TC/STMS-NP (delegation)					
	Name	*ID Number*	*Expiry date*	*Signature*	*Date and time*

Site monitoring

Site to be monitored 2 hourly and inspection documented below. If site control delegated to a TC/STMS-NP the STMS must inspect the site once each day.

Monitoring	**High-visibility garment worn by [illegible]?**	**Signs positioned OK?**	**Conflicting signs covered?**	**Correct delineation?**	**Minimum lane widths met?**	**Positive TTM?**	**Footpath standards met?**	**Cycle lane standards met?**	**Traffic flows OK?**	**Adequate property access?**	**Comment**	**Date**	**Time**	**Signed by**
Site set up														
2 hourly														
2 hourly														
2 hourly														
2 hourly														
2 hourly														
2 hourly														
Site removal														

Temporary speed limit – it is a legal requirement to record the placement and location of TSLs.

Date installed: Time:	TSL speed:	Placement (RPs or street numbers): From: To:	Length of TSL (m):	Date removed: Time:
Date installed: Time:	TSL speed:	Placement (RPs or street numbers): From: To:	Length of TSL (m):	Date removed: Time:
Date installed: Time:	TSL speed:	Placement (RPs or street numbers): From: To:	Length of TSL (m):	Date removed: Time:
Date installed: Time:	TSL speed:	Placement (RPs or street numbers): From: To:	Length of TSL (m):	Date removed: Time:


Road Upgrade Between These Two Points
Outlet Rd
Outlet Rd
Rockhaven
Kaukau Rise
Wineberry Ln
Aubrey Rd
Date: 04/07/2016 Author: Trevor Page - STMS L1 - #83400 Project: Civil Construction
Contractor : Southern Safety Services Limited
Comments:
Layout 1 - Stop Go Operation

TMP or generic plan reference	Notified Application & Submissions & Further Submissions 211

TMP or generic plan reference	Notified Application & Submissions & Further Submissions 212

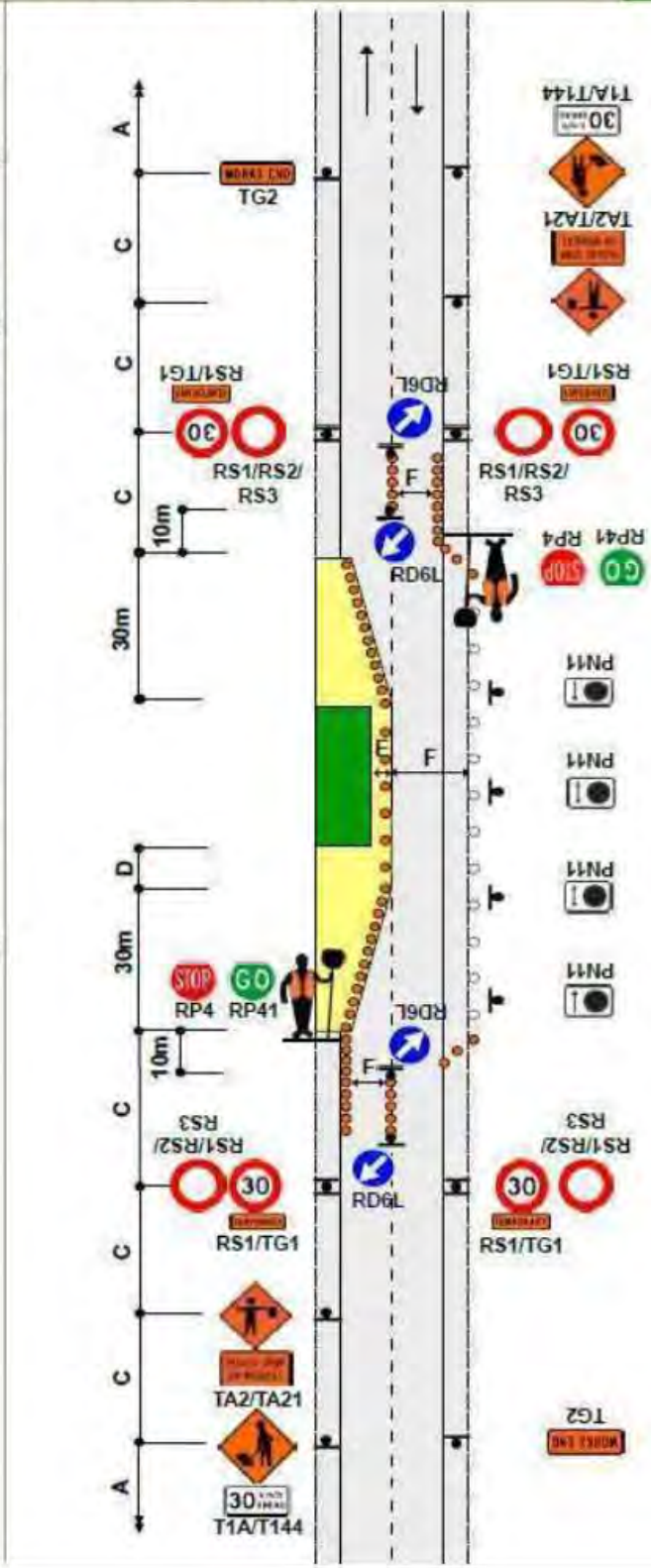
Static operations

TWO-WAY TWO-LANE ROAD
Single-lane alternating flow
Manual traffic control (STOP/GO or STOP/SLOW)

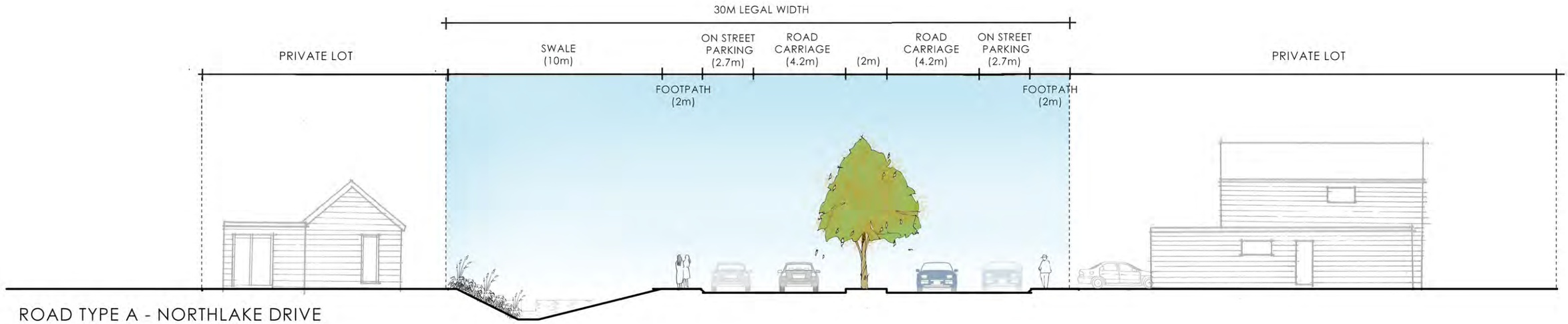
F2.14
Level 1

Notes

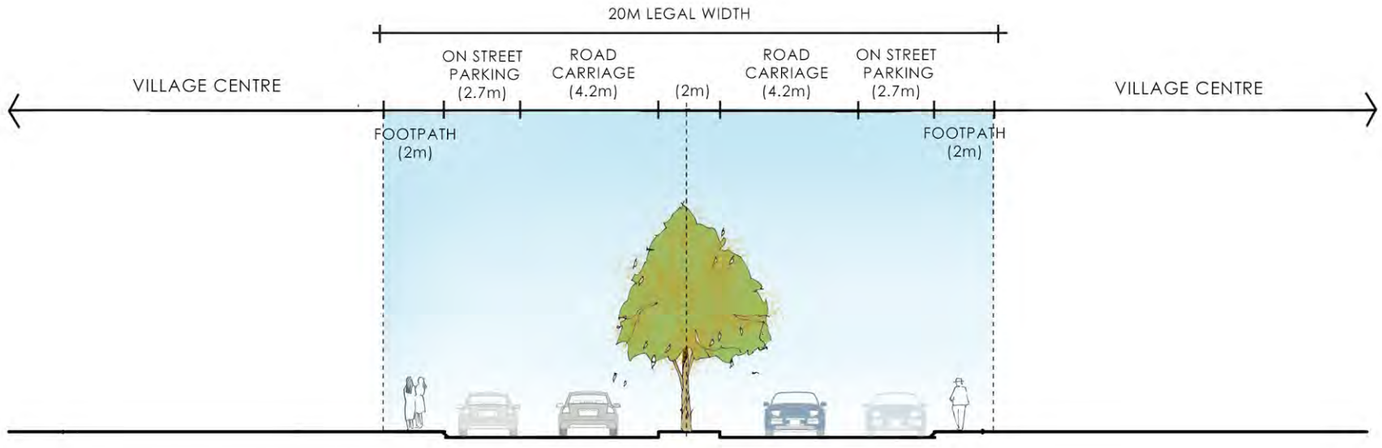
1. Extend or place extra advance warning signs towards on-coming traffic beyond any expected traffic queues
2. A 30m return taper at the end of the closure is mandatory
3. Cones are required on edge of live lane opposite closure if road is not well defined
4. Use PN11 no stopping signs, if necessary
5. MTC with RP4/RP41 STOP/GO or RP4/RP42 STOP/SLOW paddle on road shoulder located between 1st and 2nd cone closest to the working space
6. Minimum 5 cones in cone threshold at:
   - 2.5m centres - less than 65km/h
   - 5m centres - more than 65km/h
7. Refer to C10.2.3 MTC essentials for further information
8. The T144 30km/h AHEAD sign is optional



Appendix 3: BDG Indicative Road Cross Sections



ROAD TYPE A - NORTHLAKE DRIVE
CLASSIFICATION: COLLECTOR

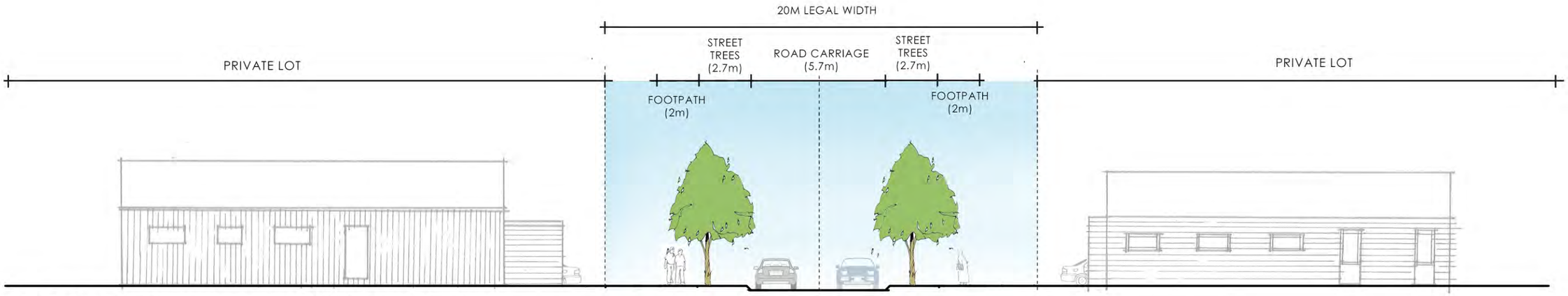


ROAD TYPE AA - NORTHLAKE DRIVE - VILLAGE CENTRE
CLASSIFICATION: COLLECTOR

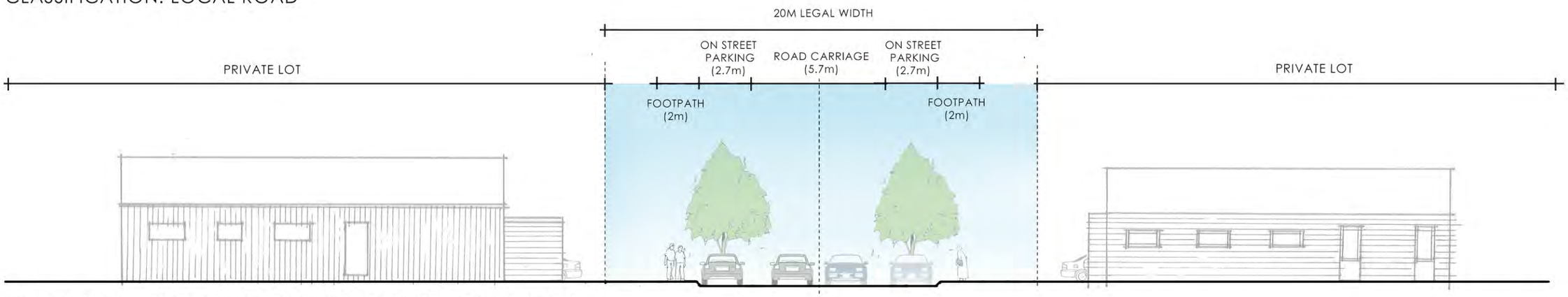
baxter design

REFERENCE : 1949 - SK331 - SCALE = 1: 200 AT A3 - 11 JULY 2016

NOTHLAKE WANAKA
INDICATIVE TYPE A ROAD CROSS SECTION



ROAD TYPE B - WITH STREET TREES (20M LEGAL WIDTH)
CLASSIFICATION: LOCAL ROAD

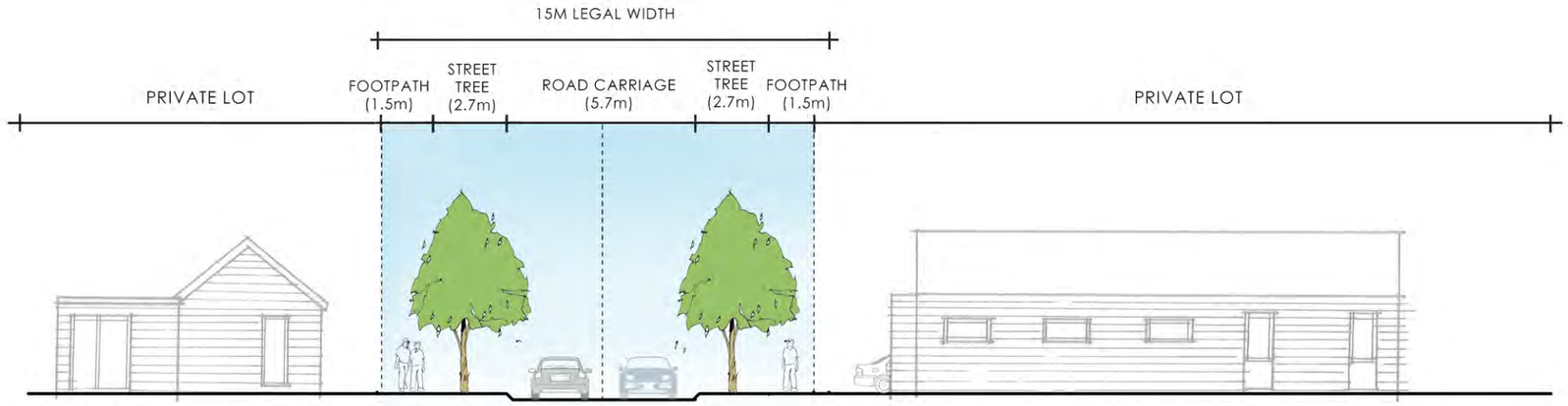


ROAD TYPE B - WITH ON STREET PARKING (20M LEGAL WIDTH)
CLASSIFICATION: LOCAL ROAD

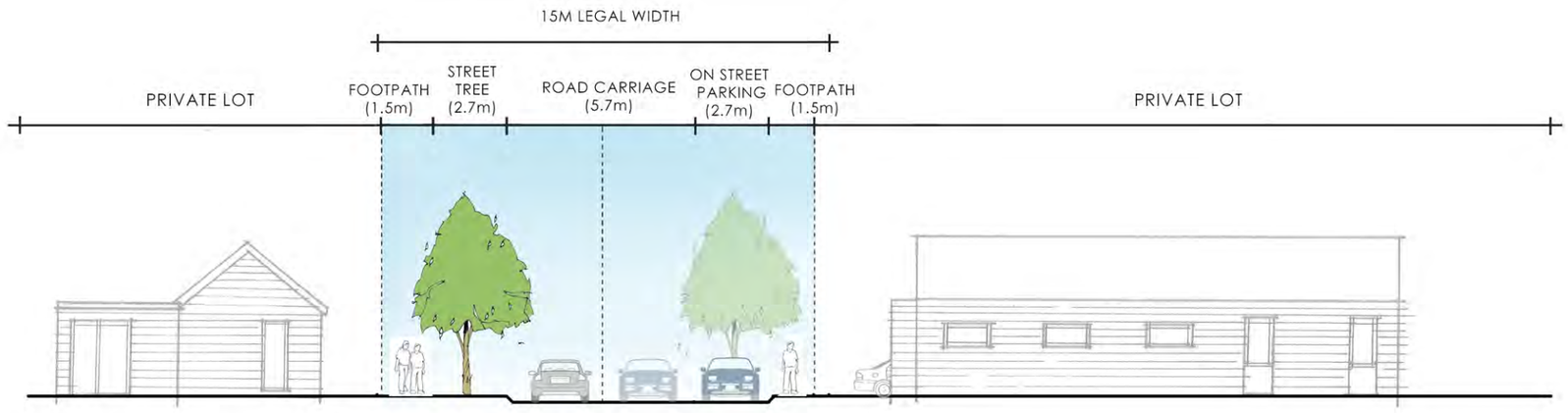
baxter design

REFERENCE : 1949 - SK332 - SCALE = 1: 200 AT A3 - 11 JULY 2016

NOTHLAKE WANAKA
INDICATIVE TYPE B ROAD CROSS SECTION



ROAD TYPE B - WITH STREET TREES (15M LEGAL WIDTH)
CLASSIFICATION: LOCAL ROAD

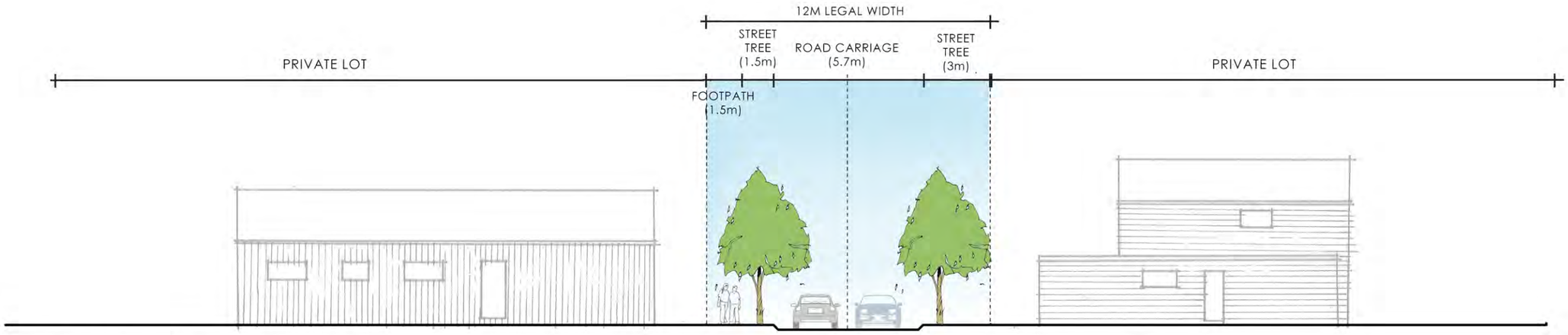


ROAD TYPE B- WITH ON STREET PARKING (15M LEGAL ROAD)
CLASSIFICATION: LOCAL ROAD

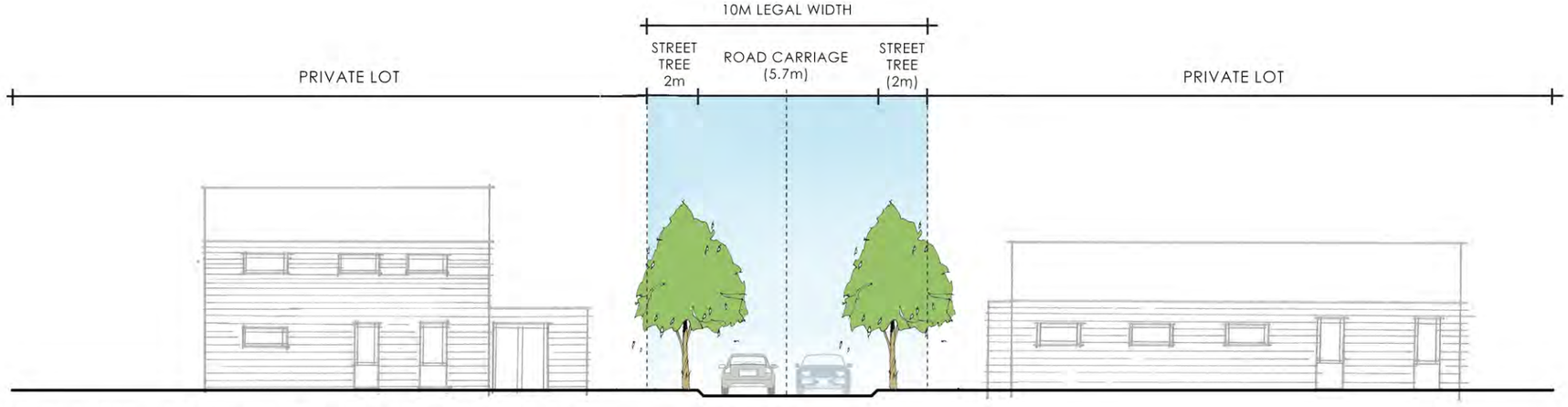
baxter design

REFERENCE : 1949 - SK333 - SCALE = 1: 200 AT A3 - 11 JULY 2016

NOTHLAKE WANAKA
INDICATIVE TYPE B ROAD CROSS SECTION



ROAD TYPE C - WITH STREET TREES
CLASSIFICATION: LANE



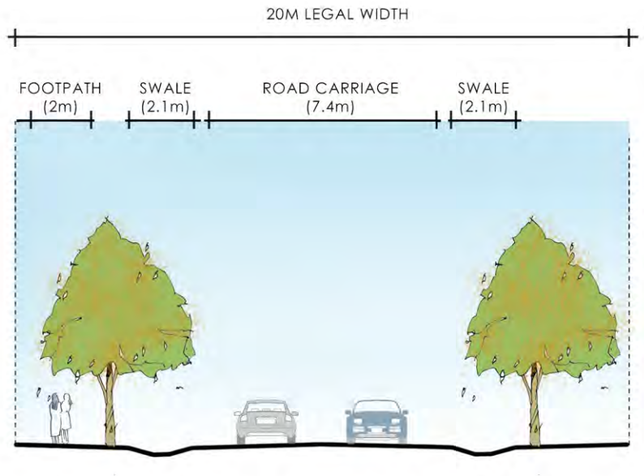
ROAD TYPE D - TRAFFIC LANE + PASSING BAYS/ON STREET PARKING
CLASSIFICATION: LANE

Note: The above typical cross section for Road Type D is in accordance with NZS4404:2010 Figure E11 suitable for servicing 1-20 dwelling units. Where this typical cross section is utilised to service less dwelling units there will be a reduction in legal road width and movement lane width in accordance with NZS4404:2010 Table 3.2

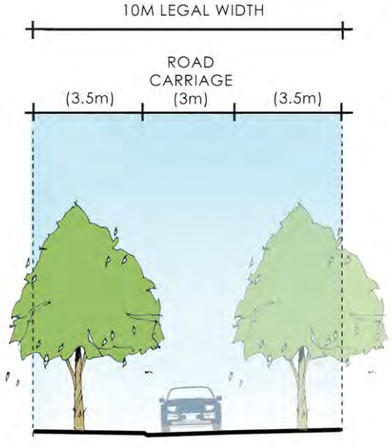
baxter design

REFERENCE : 1949 - SK334 - SCALE = 1: 200 AT A3 - 11 JULY 2016

NOTHLAKE WANAKA
INDICATIVE TYPE C & D ROAD CROSS SECTION



ROAD TYPE E - SEMI RURAL OUTLET ROAD



ROAD TYPE F - ACCESS ROADS

baxter design

REFERENCE : 1949 - SK335 - SCALE = 1: 200 AT A3 - 11 JULY 2016

NOTHLAKE WANAKA
INDICATIVE TYPE E & F ROAD CROSS SECTION

Appendix 4: Road Classification Table

			Place Context			Design Environment					Link Context								
Road Number	NZS4404 Cross Section Ref	Design Decision Road Type	Area	Land Use	Local Attributes	Locality Served	Target Operating Speed (km/h)	Min. Road Width (m)	Design Decision Road Width (m)	Max. Grade	Provision of Footpath for Pedestrians	Design Decision Provision of Footpath for Pedestrians	Passing, parking, loading and shoulder	Design Decision Provision of Recessed Carparking	Cyclists	Min. Movement Lane (excl. shoulder) (m)	Design Decision Movement Lane (excl. shoulder) (m)	Design Decision Turning Head Type	Classification
Road 1 (extension)	**E13**	Type A	Suburban	Live and Play	Primary access to housing	Up to 800 du	50	20	30	10.00%	2.0m each side	2.0m on each side	Parking is separate and recessed. See 3.3.6 Public transport is likely (see clause 3.3.1.4, 3.3.1.5)	Recessed parking	Separate provision where local authority defined cycle route	2 x 4.2	2 x 4.2m	NA	Connector / collector (≈ 8000vpd)
Road 8 (extension)	**E12**	Type B - 15m	Suburban	Live and Play	Primary access to housing	1 to 200 du	40	15	15	12.50%	1.5m one side or 1.5m each side where more than 20 du or more than 100m in length	1.5m on each side	Shared parking in the movement lane up to 100 du, separate parking required over 100 du	No recessed parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Local Road (≈ 2000vpd)
Road 11	**E12**	Type B - 20m	Suburban	Live and Play	Primary access to housing	1 to 200 du	40	15	20	12.50%	1.5m one side or 1.5m each side where more than 20 du or more than 100m in length	1.5m on each side	Shared parking in the movement lane up to 100 du, separate parking required over 100 du	No recessed parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Local Road (≈ 2000vpd)
Road 12	**E12**	Type B - 20m	Suburban	Live and Play	Primary access to housing	1 to 200 du	40	15	20	12.50%	1.5m one side or 1.5m each side where more than 20 du or more than 100m in length	1.5m on each side	Shared parking in the movement lane up to 100 du, separate parking required over 100 du	No recessed parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Local Road (≈ 2000vpd)
Road 13	**E11**	Type C - 12m	Suburban	Live and Play	Access to houses/ townhouses	1 to 20 du	20	9	12	16.00%	Shared (In movement lane)	1.5m on one side only	Shared (In movement lane)	No recessed parking	Shared (In movement lane)	5.5 - 5.7	5.7	NA	Lane (≈ 200vpd)
Access 7	**E9**	Type F - 10m	Suburban	Live and Play	Access to houses/ townhouses	1 to 3 du or 1 to 6 du	10	3.6m for up to 3 du or 4.5m for up to 6 du	10	20.00%	Shared (In movement lane)	Shared (In movement lane)	Allow for passing up to every 50m	No recessed parking & no passing required	Shared (In movement lane)	2.75 - 3.0	3.0	Y Shape	Lane (this would normally be a private road or private way)
Access 8	**E9**	Type F - 10m	Suburban	Live and Play	Access to houses/ townhouses	1 to 3 du or 1 to 6 du	10	3.6m for up to 3 du or 4.5m for up to 6 du	17 - 10	20.00%	Shared (In movement lane)	Shared (In movement lane)	Allow for passing up to every 50m	No recessed parking. Passing to be provided in courtyard / turning area	Shared (In movement lane)	2.75 - 3.0	3.0	T Shape	Lane (this would normally be a private road or private way)
Access 9	**E9**	Type F - 10m	Suburban	Live and Play	Access to houses/ townhouses	1 to 3 du or 1 to 6 du	10	3.6m for up to 3 du or 4.5m for up to 6 du	17 - 10	20.00%	Shared (In movement lane)	Shared (In movement lane)	Allow for passing up to every 50m	No recessed parking. Passing to be provided in courtyard / turning area	Shared (In movement lane)	2.75 - 3.0	3.0	T Shape	Lane (this would normally be a private road or private way)