

BEFORE THE QUEENSTOWN LAKES DISTRICT COUNCIL

IN THE MATTER OF

the Resource Management Act 1991

AND

IN THE MATTER OF

of proposed Private Plan Change 51
to the Queenstown Lakes District
Plan

**STATEMENT OF EVIDENCE OF MICHAEL JAMES BOTTING FOR
PENINSULA BAY JOINT VENTURE**

Dated 1 August 2016

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CHRISTCHURCH
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INTRODUCTION

Qualifications, Experience and Code of Conduct

1. My name is Michael James Botting. I am a Registered Professional Surveyor, a member of the New Zealand Institute of Surveyors and have a Bachelor of Surveying degree. I am a Partner of Paterson Pitts Group. Paterson Pitts Group is a land development consultancy specialising in subdivisions, both rural and urban, and other land development projects around Wanaka and Otago.
2. I have been involved in development at Peninsula Bay since 2004 providing surveying, project management and land development civil engineering design for the overall Peninsula Bay development, covering aspects such as lot layout, earthworks levels, stormwater disposal and treatment, gravity waste water reticulation, potable water supply, roading and footpath design. I have overseen the tender and award of civil contracts for all stages of the development at Peninsula Bay and overseen and supervised various civil contractors during site construction. I have also undertaken the Land Transfer surveys and or supervised the Land Transfer surveys of all stages to date including Section 223 and 224c approvals. I have walked over the plan change area extensively during the last 12 years in a professional capacity and also regularly bike, run and/or walk with my family in and around the plan change area, the wider escarpment reserve, Sticky Forest and the outlet area.
3. I prepared the engineering infrastructure assessment for Plan Change 51 (PC51) and also designed and/or supervised the preparation of various concept plans and engineering plans associated with the plan change.
4. In addition to my previous involvement on the site I have attended several site visits specifically related to PC51 to provide guidance onsite on the location and layout of the various features of the plan change, such as building platforms, track locations and boundaries, both existing and proposed. These site visits include the following:
 - (a) Wednesday 15th June 2016 – Site visit with Council planner Vicki Jones. This site visit comprised a walkover inspection of the

building platforms, tracks and proposed boundaries. Friday 24th June 2016 – Site visit and boat trip with Council landscape architect, Dr Marion Read. This included both a site visit and a boat excursion on Lake Wanaka to view profile pole visibility.

- (b) Wednesday 29th June 2016 - Site visit with representatives of Bike Wanaka and Aspiring Trail Network. This site visit comprised a walkover inspection of the building platforms, existing bike tracks and proposed walking tracks.
- 5. I also supervised the set-out and placement of profile poles on the proposed building platforms associated with the plan change.
- 6. Finally, I prepared the report *Peninsula Bay Village Ltd and Wanaka Bay Ltd – Peninsula Bay North Rezoning Infrastructure Design Report* dated 1 September 2015 which formed part of the plan change application.
- 7. I have read the Code of Conduct for Expert Witnesses contained within the Environment Court Practice Note 2014, and agree to comply with it. I have complied with it in the preparation of this evidence. This evidence is within my area of expertise and I confirm I have not omitted to consider material facts known to me that might alter or detract from the opinions I have expressed.

SCOPE OF EVIDENCE

- 8. Patterson Pitts was engaged during 2015 and 2016 to assess infrastructure servicing requirements, prepare concept plans, provide 3D visualisation of the building platforms from various view points and engineering design of proposed earthworks associated with the platforms and roading required to service the plan change. We engaged Tonkin and Taylor and Rationale to undertake modelling of water supply and waste water supply. We also confirmed availability of telecommunications and power supply from the network suppliers.
- 9. My evidence:
 - (a) Describes the history of consenting and development at Peninsula Bay;

- (b) Confirms that there is capacity within the existing Peninsula Bay infrastructure network for the development which will be enabled by the plan change; and
 - (c) Describes the earthworks required for that development.
10. I also address some sections of the officer reports in so far as they relate to my area of expertise.

SUMMARY

11. Peninsula Bay has been under development for some years now. Resource consent for the Overall Master Development Plan (OMDP), and the Stage 1 Subdivision and bulk earthworks approval, was obtained in February 2007. The bulk earthworks consent for the remaining stages was obtained in the middle of 2007 followed by subdivision consent for stages 2 –6 in May 2008. Physical works commenced in 2007 with the bulk earthworks on Stage 1 followed by civil infrastructure construction during the latter half of 2007 and early 2008. Subsequent stages have followed in the proceeding years in varying sizes.
12. During that time there have been several resource consent variations obtained for minor tweaks to the layout of allotments and additional earthworks, the majority of which have been undertaken by myself or under my supervision.
13. Capacity is available within the existing Peninsula Bay infrastructure and the wider Council network to accommodate the development that will be enabled by the plan change. The plan change will therefore ensure the efficient use of existing infrastructural services within Peninsula Bay specifically and the wider Wanaka area generally.
14. Earthworks will be required to enable the formation of roads and building platforms. These works are able to be undertaken relatively easily. Minimal earthworks will be required to form the proposed walking tracks and these new tracks have been designed to avoid the removal of vegetation where practicable. Vegetation which is removed will be re-planted in accordance with the Landscape Concept Plan.

15. It is my recommendation that some parts of the existing bike trails are either suitably stabilised, or are realigned to prevent further erosion and to address safety issues.

History of Consenting and Development at Peninsula Bay

16. I was involved in the original plan change Variation 15, in 2004, providing surveying of the site and the set-out of building platforms, scheme plan design and infrastructure assessment. I was also involved in Variation 25 providing detailed infrastructure assessment including the disposal of stormwater utilising low impact design techniques which included stormwater treatment swales and attenuation ponds. I gave evidence for the applicant at the Council hearing of Variation 25 which enabled the creation of 342 lots within the LDR zone created by that variation.
17. Following the approval of Variation 25, I have been involved in every stage of the development of Peninsula Bay including scheme plan design, earthworks design, civil infrastructure design, Land Transfer surveys, project management and supervision of civil contractors during construction.
18. Since 2007, when resource consent RM060929 was granted to establish the Outline Development Master Plan for Peninsula Bay ("ODMP"¹), Peninsula Bay has been gradually developed in six separate stages. Subdivision consent for Stage 1 was granted in 2007 followed by Subdivision Consent for Stages 2 – 5 in May 2008. Stages 1 to 5 (including sub-stages) are now complete with titles issued, all allotments sold and over 200 houses built. The development of Stage 6 is being completed in three sub stages (Stage 6(a), Stage 6(b) and Stage 6(c)) and is well advanced with Stage 6(a) being completed and titled in December 2015. Stage 6(b) is now 80% complete with titles issued (and transferred) during August 2015 and July 2016. There are only 4 remaining allotments to be titled in Stage 6(b). Stage 6(c) comprises 5 allotments and has not yet been completed. Appendix A attached shows the lots still to be titled.

¹ RM060929 has been varied several times over the course of the development.

Vesting of Open Space Land

19. Condition 11² of RM060929 requires the consent holder to vest the Open Space zoned land within Peninsula Bay (including that portion now subject to PC51) as public reserve upon completion of Stage 6(c). The condition affords some discretion around the timing of vesting such that it may occur progressively in stages to match the subdivision and development of Peninsula Bay.
20. The land vested to date is shown on the plan contained in Appendix B of this evidence. This vesting has occurred in stages aligned with the residential allotment stages and the development of the walking track network within Peninsula Bay (outside of the land vested as Open Space).
21. If granted, PC51 would reduce the total area of land to be vested under RMA060929 by approximately 4.37 hectares. Based on costs expended by the applicant in maintaining the existing vested recreation reserve (for which they are responsible for maintenance for 5 years from the date of vesting), this reduction would result in an estimated maintenance cost savings of \$7,500 per year. This maintenance cost covers the cost of mowing the reserves 4 times per year, pest control of rabbits and removal of weed species such as pine trees and broom.
22. In accordance with the QLDC's development contributions policy, reserve contributions are calculated at a rate of 27.5m² per residential property. A total of 342 residential allotments have been approved at Peninsula Bay to date, equating to a required reserves contribution of 9405m² (at 27.5m² per lot). As shown in Table 1 below, approximately 137,377m² of reserves have been vested in the Council to date.

² Condition 11 states: At the time a subdivision application is lodged to undertake the subdivision indicated on the Peninsula Bay Outline Development Master Plan and approved by resource consent RM060929, the consent holder shall make provision for the Open Space Zone within Peninsula Bay to be vested in Council as public reserve. This vesting shall occur prior to certification of the subdivision in accordance with section 224(c) of the Resource Management Act 1991. This vesting may occur progressively in stages that match the staging of the subdivision

Table 1: Reserve contributions at Peninsula Bay. Description	Current Approved Reserve to vest (Area m²)	Reserve already vested (Area m²)	Remaining land to vest (Area m²)	Proposed Reduction by PC51	Proposed remaining Open Space to vest under PC51
Open Space as Recreation Reserve	214,900	87,581	127,319	43,700	83,619
Open Space as Local Purpose Reserve	43,951	43,951	0	0	0
Local Purpose Reserve - Accessways	6,182	5,845	337	0	337
Totals	265,033	137,377	127,656	43,700	83,956

23. If the plan change is approved, development contributions in the order of \$371,000 are anticipated to be payable based on 24 new lots, with a subsequent annual (and ongoing) rates intake of an estimated \$84,000.

Servicing and Infrastructure Network at Peninsula Bay

24. As set out in my report, the additional LDRZ sought by PC51 is suitable for development and can be easily and appropriately serviced by additions to the existing Peninsula Bay infrastructure.

Geological and Geotechnical Considerations

25. The site is considered very suitable for development in geological and geotechnical terms given its soil structure, gentle ground slope and stability³.

Earthworks

26. Earthworks will be required across the site to enable the formation of roads, building platforms and the new walking tracks. The preliminary earthworks plan has been updated to reflect the amendments to the plan change since notification and is attached to my evidence as Appendix C. The earthworks plan demonstrates that approximately 3730m³ of cut and 1,650m³ of fill will be required within the rezoned land.
27. All earthworks have been designed to minimise the removal of existing vegetation as much as is practicable. Where the earthworks

³ *Infinity Investment Group: Development of the Peninsula Bay Subdivision - Geological Assessment of the Site and Surrounds in relation to Construction of Road and Services*, Royden Thompson, July 2003. Report contained in Appendix A1 of my technical report.

batters require vegetation removal, this will be re-planted in accordance with the Landscape Concept Plan.

28. Erosion, sediment and dust control measures will be implemented to minimise nuisance erosion, sediment and dust effects during the development of the site. The control of erosion is vital given the fine grained silts, which once exposed can result in severe scouring.

Stormwater

29. Management of stormwater runoff will be straightforward and can be fully contained within the site boundaries. The topography of the site means that stormwater naturally flows in a southerly direction into the existing stormwater ponds installed as part of Stage 4 of the development. The existing stormwater network installed for Peninsula Bay provided low impact design outcomes providing both stormwater treatment and attenuation of peak flows. Post development, the impact of stormwater runoff can be attenuated to below pre-development levels by utilising the existing stormwater ponds installed within Peninsula Bay

Water and Wastewater

30. Water can be supplied to the plan change land by an extension to the existing water mains located at the end of Infinity Drive and Minaret Ridge. Water modelling undertaken by Tonkin and Taylor demonstrates that residual water pressures will meet QLDC's minimum water pressure requirements and that a minimum of Class FW2 fire flow can be achieved. While detailed design of this infrastructure will be addressed at subdivision stage, the work undertaken to date provides sufficient certainty that the development can be appropriately serviced in this regard.
31. Similarly, modelling undertaken by Rationale demonstrates that sufficient capacity is available within the waste water network to accommodate the additional development enabled by PC51. The specific connection details, including which waste water catchment each lot will discharge to and the size of waste water pipes will be established during later subdivision and development of the site. It is also possible to provide a gravity waste water connection for a toilet block near proposed Lot 26 for use by walkers/bikers.

32. Existing stormwater mains located within Infinity Drive and Minaret Ridge can be extended to service the plan change area, with stormwater treatment provided via the existing swales and stormwater treatment ponds located within the central Peninsula Bay site.

Electricity and Telecommunications

33. Installation of power and telecommunications can easily be obtained from the existing network within the wider Peninsula Bay area. Some realignment of the underground power cable through Lot 22 may be required to better align the cable with the proposed boundaries or alternatively slight adjustments could be made to the final allotment boundaries. This will be addressed at subdivision stage.

Access

34. The new LDRZ area is proposed to be accessed from the existing roading network established as part of the wider Peninsula Bay development. Proposed Lots 1 to 12 will be accessed via an extension to Bull Ridge, with Lots 13 to 26 accessed via an extension to Infinity Drive.

Pedestrian and Cycle Linkages

35. Pedestrian and cycle linkages are proposed throughout the site and comprise of two main types; those associated with the roading network and those connecting with existing walking and cycling trails in the Open Space zone.
36. I have prepared a plan (Appendix D attached) showing the existing and proposed biking and walking tracks, including connections to adjoining land and the existing Peninsula Bay development. While the final roading and footpath specifications and design will be undertaken at subdivision and land use consent stage, this plan shows the integration that will be achieved.
37. Legal access to the existing open space zone is currently only available from within Peninsula Bay or from the DOC reserve immediately to the north of the site. As shown in Appendix D, improved connectivity will be facilitated by PC51.

38. After reviewing Dr Bramley's technical report and evidence, I am satisfied that the formation of the proposed walking tracks can be undertaken with careful consideration of the existing kanuka trees. Good examples of this design approach can be found on the existing tracks within the eastern open space reserve located in Stages 3a and 3b of Peninsula Bay. The selective pruning and careful route planning allowed the Stage 3 tracks to be developed through patches of kanuka with limited effect on the existing trees and has resulted in tracks that have a tree canopy above the track. Refer Appendix E and photographs 1 and 2 in Appendix F.
39. The formation of the walking track connection past Lot 12 down to Infinity Drive will require careful design and route selection to avoid excess earthworks and tree removal. Although the final route has not yet been subject to detailed design, our experience with track building in the eastern open space reserve has resulted in excellent track outcomes through patches of kanuka which have a similar appearance and ground slope to those in the plan change area. Photographs 1 and 2 in Appendix F show the high standard of track finish achieved together with retention of the kanuka canopy above the track.

SUBMISSIONS

40. A small number of submissions⁴ raise concerns about the proposed development causing potential erosion. As noted in Section 2.3 of my technical report, the control of erosion and silt-laden water can be easily achieved through the use of silt fences and/or hay barriers as appropriate to prevent any silt or sediment from leaving the site during development. The main fundamental of erosion control during construction is to prevent scouring from occurring. In the past we have used several methods to control and prevent erosion. One of the main controls was placing compacted metal over any exposed silty ground which is likely to convey runoff. This along with placement of rock lined water channels laid over geotextile fabric was required to prevent severe erosion from occurring.

⁴ Lisa Tsai 51/22; Chris Robertson 51/23; Michelle Harrison 51/24; Brett Jenkins 51/198; Sheryl Dickinson 51/200

OFFICER'S REPORT

41. In paragraph 5.4.8 of her evidence, Dr Read states that the quality of views from the 4 lots immediately to the west of Bull Ridge are compromised by the presence of temporary stockpiles Ms Palmer also raises this issue.
42. Resource consent RM070693 approved earthworks within the open space zone in this area including conditions regarding reinstatement once all works were completed. RM080100 also approved the locating of temporary stockpiles in the area referred to by Dr Read. The staging of the subdivision has resulted in work progressively moving towards this corner of the site. Once all site works are finished including the construction of reserve car parking, the removal of stockpiles can be completed.
43. At page 2 of her memorandum, Ms Galavazi states that the use of compacted gravel pathways will detract from the users experience of the area. My opinion is that any pathways which are subject to heavy use within Peninsula Bay need to have a compacted metal surface to prevent the possibility of erosion from occurring to the fine grained soil. This is an issue with other tracks in the area and, as I state in other parts of this evidence, is a matter of safety which requires attention.
44. At page 5 of her memorandum, Ms Galavazi states that it is not clear what (if any) upgrades are proposed to the existing bike track, specifically the Thread the Needle track. My professional opinion is that there is a need to either remove the steeper sections of this track in favour of more gentle realigned location or carry out work to stabilise the surface to prevent erosion and resolve safety issues with the steep drop offs. Photographs 8, 9 and 10 in Appendix F show the current eroded surface and steep drop offs down this section of track. Photograph 6 in Appendix F shows a "safety fence" (put in place by an unknown third party) that seeks to prevent falls off a 10m high vertical cliff.
45. At page 5 of her memorandum, Ms Galavazi states that a track width of 2.5m would require vegetation clearance of 3m-5m and would require more switchbacks (and therefore an increase in vegetation clearance) due to the steepness of the terrain. Our previous work on

establishing existing tracks located in the eastern open space reserve within Stage 3(b) required minimal vegetation clearance to establish tracks with a formed gravel width of 1.5m. Removal of kanuka was kept to a minimum whilst still maintaining a canopy above the track by selective pruning of tree branches. The removal of kanuka branches and selective tree removal (where necessary) combined with careful route design has resulted in an excellent track through pockets of kanuka located in the eastern reserve. I consider the vegetation removal effects associated with the proposed track formation are overstated by Ms Galavazi.

46. At page 5 of her memorandum, Ms Galavazi states that the existing tracks have been constructed by volunteers. I consider it is a stretch to say that tracks such as Thread the Needle have been in any way “constructed”. From my 12 years of involvement with development at Peninsula Bay, I have observed the Thread the Needle track being developed ad hoc over time by the gradual removal of vegetation and the repeated use of the then cleared space. This repeated use combined with erosion has resulted in the current track formation. The track cannot be said to be constructed and as a result of erosion is now considered to be unsafe. My opinion is that there is an urgent need to carry out maintenance on this and some of the other existing tracks to prevent further erosion and address issues of safety.
47. Ms Galavazi has concerns (page 4 of her report) about the proposed location of the memorial in part because she considers that the land is susceptible to erosion. The original proposed location of the memorial would not be affected by erosion provided the memorial was set back at least 5m from the edge of the escarpment. Photograph 14 in Appendix F shows that the proposed site of the memorial in the plan change as notified is flat and not subject to erosion. Notwithstanding this, the location of the memorial has been moved to nearer Lot 4 on another flat area as suggested by the Council.
48. At page 5 of her memorandum, Ms Galavazi states that the current full 13.8 hectares provides more scope for the creation of Grade 1 and 2 trails. Based on a contour analysis, it is my opinion that there is limited scope to construct tracks that have flat enough grades to meet the requirement of Grade 1 and 2 trails on the area proposed to be rezoned Low Density Residential.

49. In its memorandum, Opus states that a track width of 2.5m would be needed for a dual use track. In my experience a requirement for 2.5m is an excessive width which would be inappropriate in the zone change area. The new 2015 Council trail standards appear to be primarily focused on cycling and promoting trails with very flat grades and wide formation. The previous track standards used by Council before 2015 were more aligned with the National Standards. We have achieved high quality trails in previous stages that are now well used by both walkers, runners and mountain bikers. The majority of these trails are of a 1.5m wide formed gravel pathway with grassed swale where necessary to control runoff and prevent erosion. This width is considered appropriate for the proposed walkway and will result in a similar outcome to the existing tracks already constructed in earlier stages.
50. In paragraph 35 of her evidence, Ms Palmer outlines that loss of kanuka from track construction is likely to be 2890m². It is my opinion that this figure is overstated and does not take in to account aspects such as careful track design combined with branch trimming and selective tree removal. With these measures, the actual loss of kanuka can be significantly reduced during track construction. In addition, the new walkway can utilise part of the existing Mt Gold Access along the ridgeline adjacent to Lots 10 – 12 and part of the grass track in front of Lots 7 – 9. From my analysis, Ms Palmer appears to have relied solely on aerial imagery in her calculations and as such has not allowed for these factors.
51. In paragraph 37 of her evidence, Ms Palmer outlines that her estimate of the loss of kanuka from fenceline clearance is in the order of 250m². Again it would seem that this assessment has been made using aerial imagery such as Google Earth. This does not take into account tree branch trimming and is a simplistic approach to working out how much kanuka would be removed by this activity. Most of the fencing (198 m of the 287 m) is located within the area proposed for replanting in any event. In my opinion and given my previous experience in this area I consider that this figure is also overstated.

CONCLUSION

- 52. PC51 will ensure the efficient use of existing infrastructural services within Peninsula Bay by utilising existing capacity available within the Peninsula Bay infrastructure network
- 53. The effects of the earthworks associated with the road and lot formation and the creation of the proposed walkway will be mitigated by planting in accordance with the landscape concept plan.
- 54. The formation of the new walkways and boundary fencing can be undertaken with minimal vegetation removal.
- 55. It is recommended that the issues of erosion and safety of the existing Thread the Needle Track be addressed either by the developer or Council following the outcome of the proposed rezoning.

Mike Botting

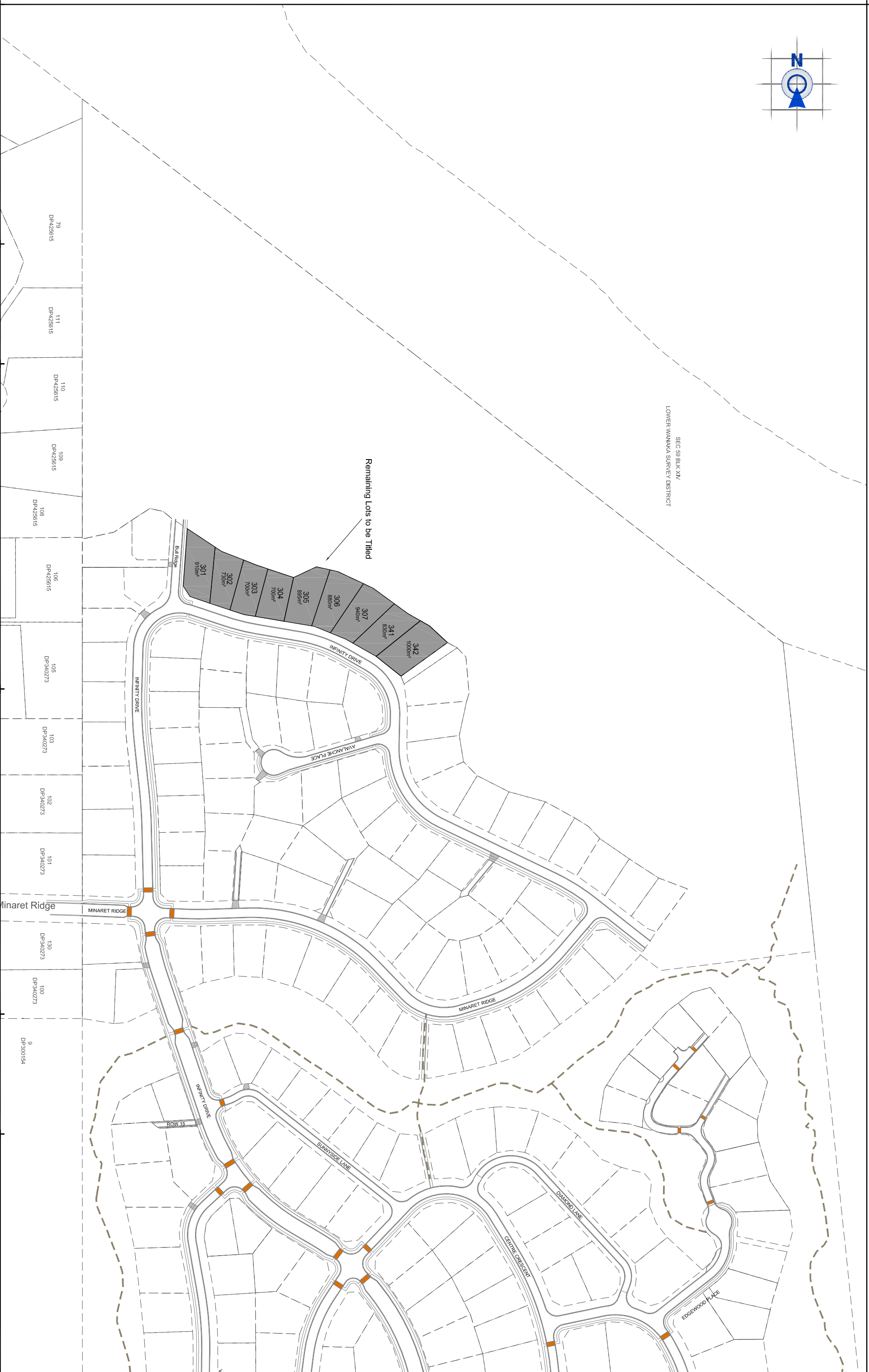
August 2016

Appendix A – Plan Showing Lots Still To Be Titled



SEC 59 BLK XIV
LOWER WANAKA SURVEY DISTRICT

Remaining Lots to be Titled



Client/Location:

**Peninsula Village Limited &
Wanaka Bay Limited**

Purpose/Drawing Title:

Peninsula Bay Remaining Lots to be Titled

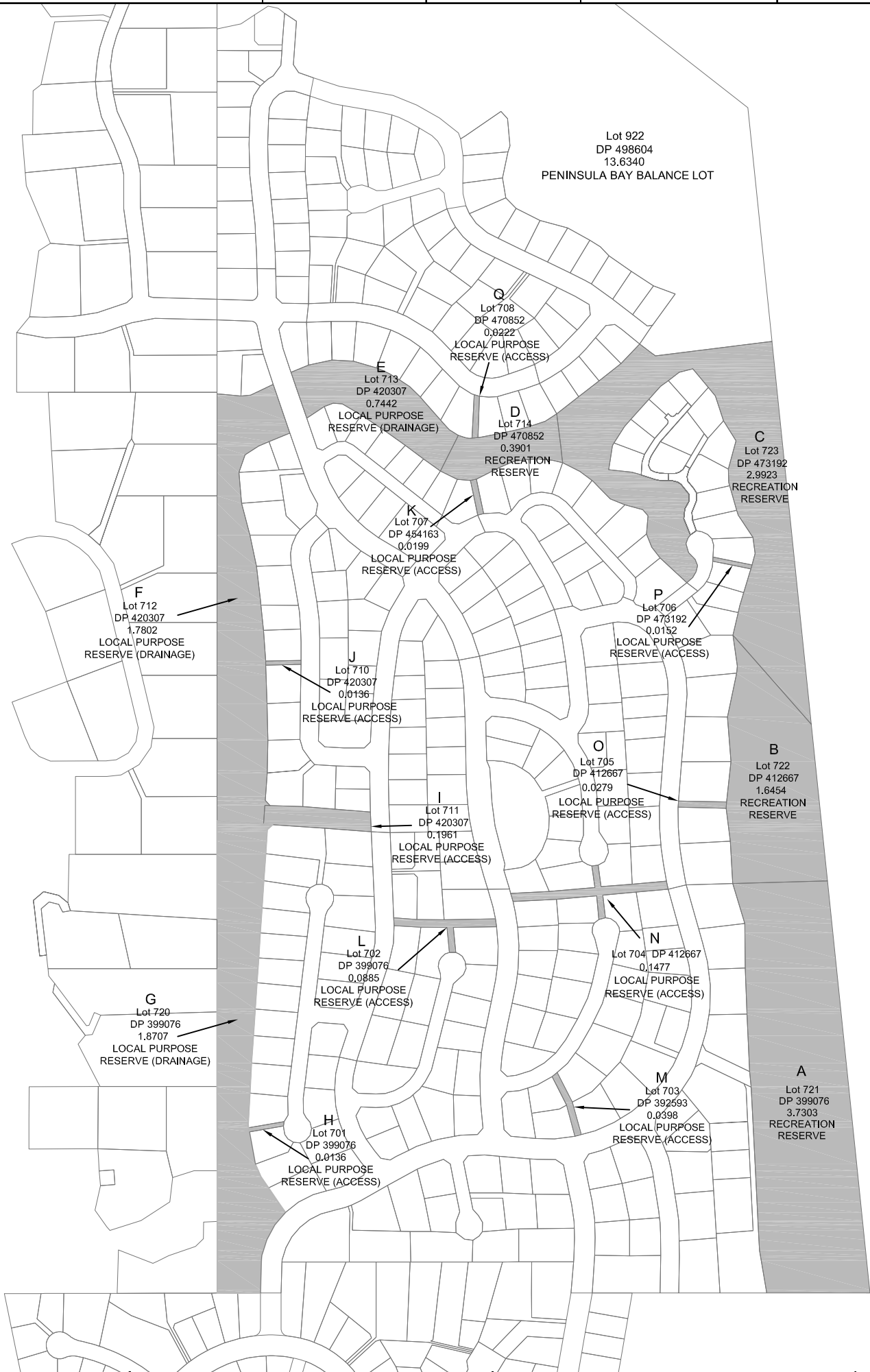
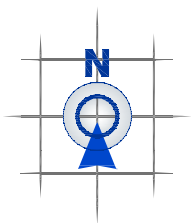
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Appendix B- Land Vested to Date

Our Ref	Type	DP No	Area (m ²)	Area (m ²) - Recreation Reserve	Area (m ²) - Local Purpose Reserve (Drainage)	Area (m ²) - Local Purpose Reserve (Access)
A	Recreation Reserve	Lot 721 DP 399076	37,303	37,303		
B	Recreation Reserve	Lot 722 DP 412667	16,454	16,454		
C	Recreation Reserve	Lot 723 DP 473192	29,923	29,923		
D	Recreation Reserve	Lot 714 DP 470852	3,901	3,901		
E	Local Purpose Reserve (Drainage)	Lot 713 DP 420307	7,442		7,442	
F	Local Purpose Reserve (Drainage)	Lot 712 DP 420307	17,802		17,802	
G	Local Purpose Reserve (Drainage)	Lot 720 DP 399076	18,707		18,707	
H	Local Purpose Reserve (Access)	Lot 701 DP 399076	136			136
I	Local Purpose Reserve (Access)	Lot 711 DP 420307	1,961			1,961
J	Local Purpose Reserve (Access)	Lot 710 DP 420307	136			136
K	Local Purpose Reserve (Access)	Lot 707 DP 454163	199			199
L	Local Purpose Reserve (Access)	Lot 702 DP 399076	885			885
M	Local Purpose Reserve (Access)	Lot 703 DP 392593	398			398
N	Local Purpose Reserve (Access)	Lot 704 DP 412667	1,477			1,477
O	Local Purpose Reserve (Access)	Lot 705 DP 412667	279			279
P	Local Purpose Reserve (Access)	Lot 706 DP 473192	152			152
Q	Local Purpose Reserve (Access)	Lot 708 DP 470852	222			222
Totals			137,377	87,581	43,951	5,845



WANAKA
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Client & Location:

Infinity Investments
Peninsula Bay

Purpose & Drawing Title:

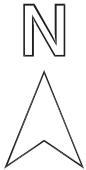
Reserves Vested to July 2016
From LT Plans

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Appendix C - Updated Preliminary Earthworks Plan

Peninsula Bay North – Wanaka

Indicative Earthworks Plan - 28 July 2016

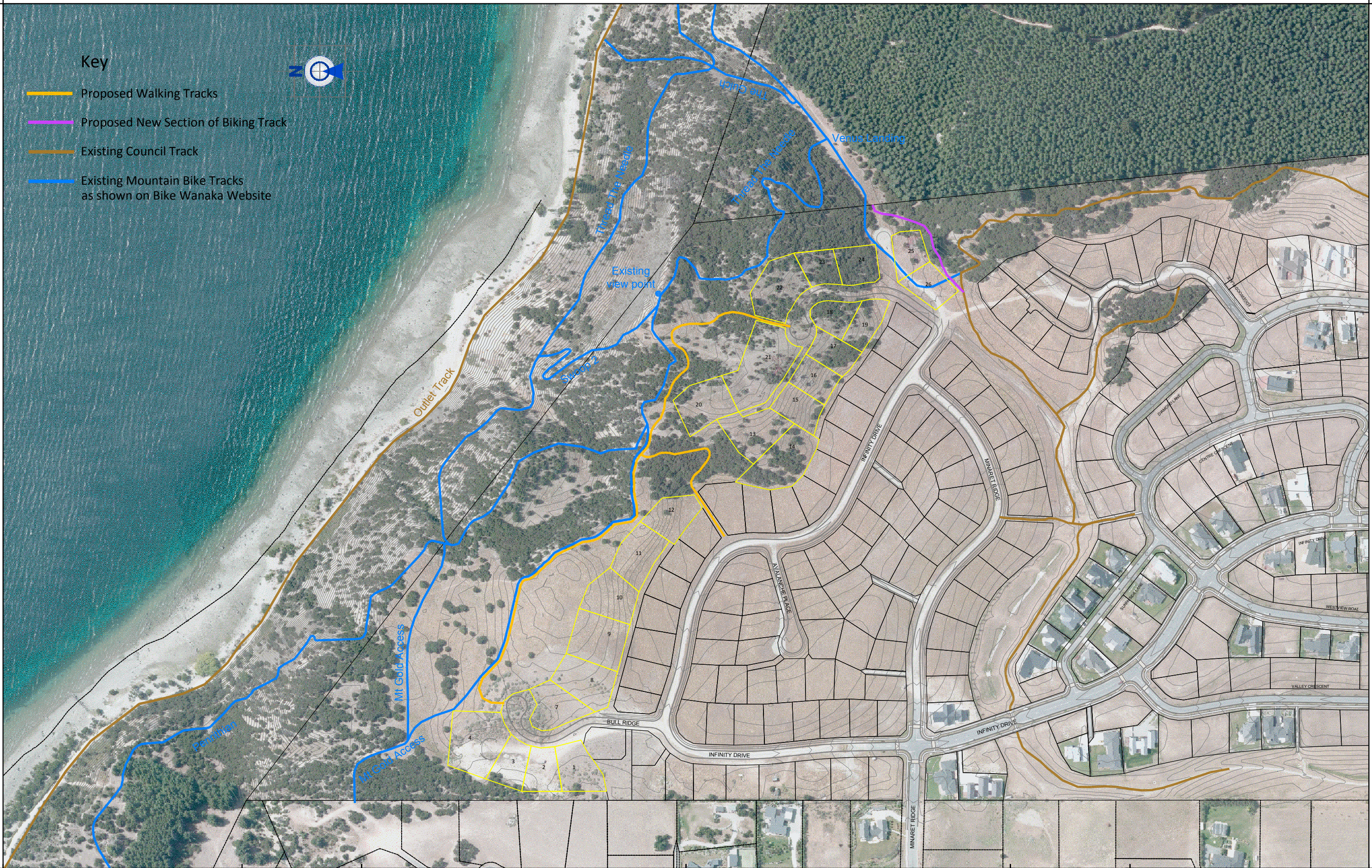


Key

- Earthworks Cut Area
- Earthworks Fill Area



Appendix D – Existing and Proposed Trails



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Purpose & Drawing Title:

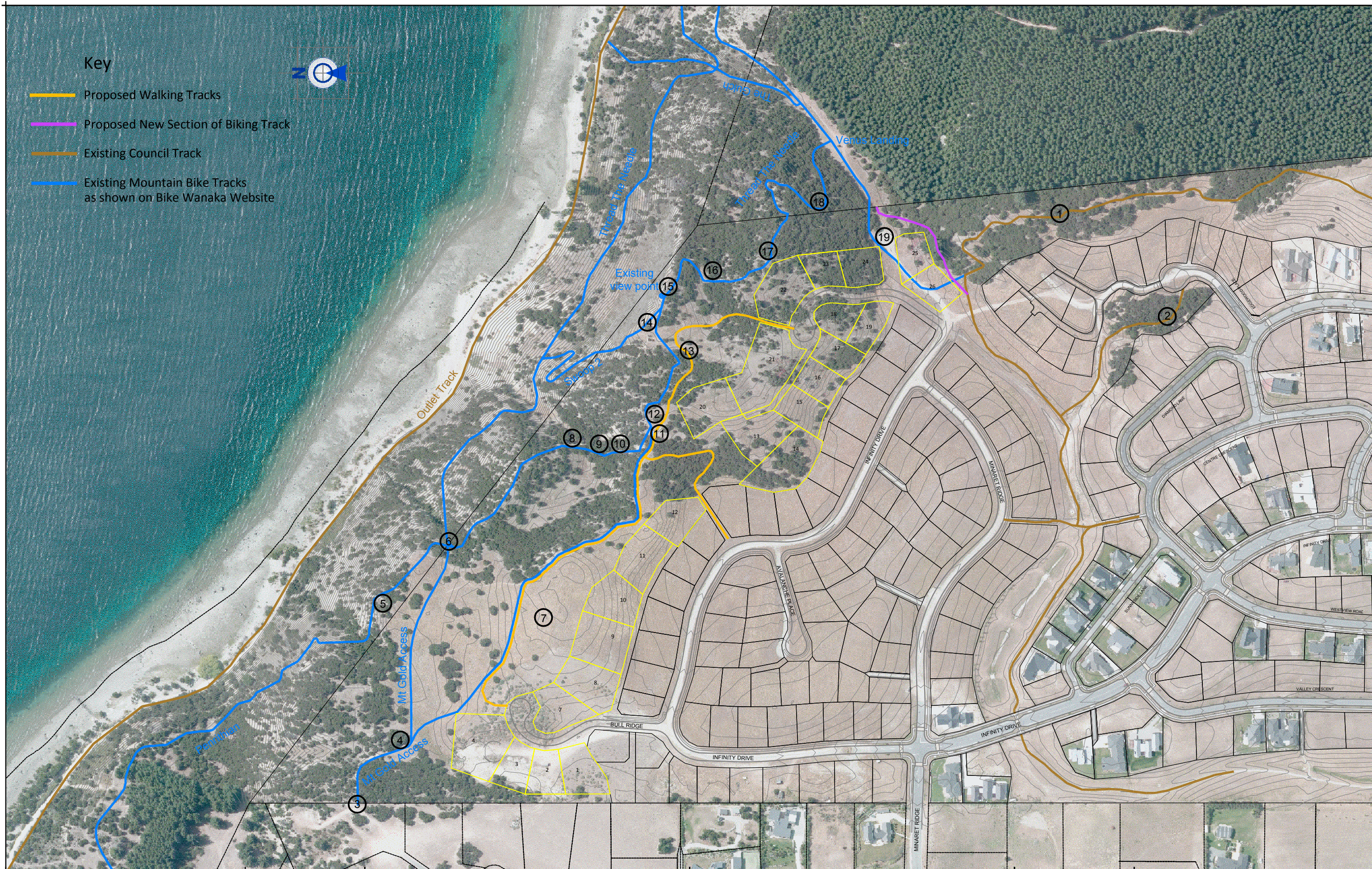
**Existing & Proposed Trail Plan
Peninsula Bay North End**

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Appendix E – Location Plan of Site Photographs



Key

- Proposed Walking Tracks
- Proposed New Section of Biking Track
- Existing Council Track
- Existing Mountain Bike Tracks as shown on Bike Wanaka Website



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Client & Location:

Infinity Investments
Peninsula Bay

Purpose & Drawing Title:

Location Plan of Site Photos
Peninsula Bay North End

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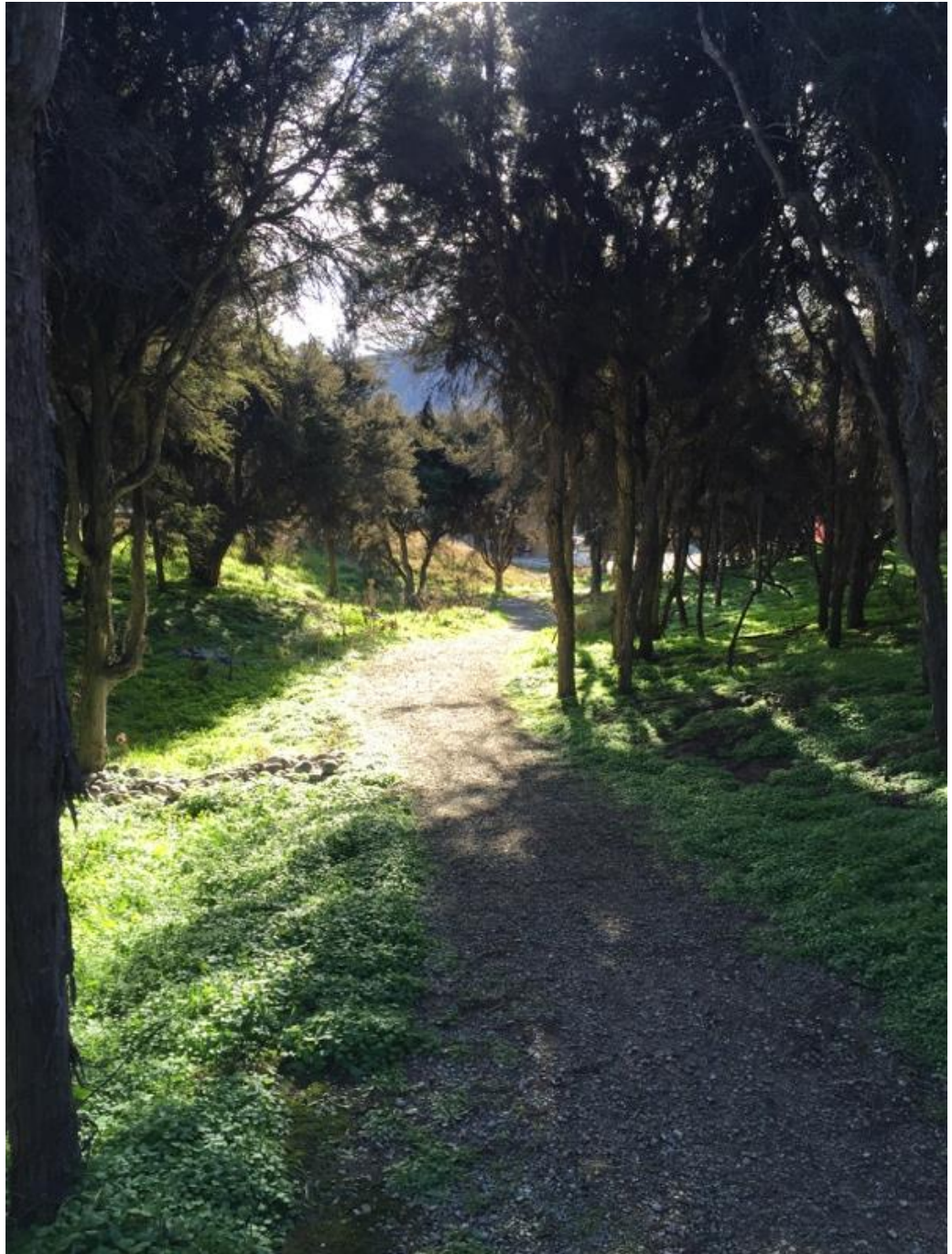
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Appendix F –Site Photographs



Photograph 1 – Example of track formation in Stage 3b of Peninsula Bay. Track formation is 1.5m. Removal of kanuka was keep to a minimum whilst still maintaining a canopy above the track by selective pruning of branches.



Photograph 2 – Another example of track formation in Stage 3a of Peninsula Bay. Track formation is 1.5m. Removal of kanuka was kept to a minimum whilst still maintaining a canopy above the track by selective pruning of branches.



Photograph 3 – Location of stile providing informal access from Mt Gold area into Peninsula Bay. Note this access point is referred to as the “Mt Gold Access” on the Bike Wanaka trail map.



Photograph 4 – Silt generated by runoff from informal track



Photograph 5 – View point from boundary of Peninsula Bay site from informal walking track (outside the plan change site).



Photograph 6 – Photograph of corner of Thread the Needle track on boundary of Peninsula Bay site showing ad hoc safety fence above a 10m vertical drop.



Photograph 7 – Photograph of informal grass track created since completion of bulk earthworks in 2008.



Photograph 8 – Photograph of silt from bike track erosion.



Photograph 9 – Photograph of erosion of bike track within gully below Lot 20. Track has been progressively widened by bikers avoiding rutted section.



Photograph 10 – Photograph of erosion of bike track within gully below Lot 20. Track has been progressively widened by bikers avoiding rutted section. Track has 0.5m to 1m vertical drops.



Photograph 11 – Photograph of intersection of the Mt Gold Access and the Thread the Needle bike tracks. The Thread the needle bike track heads off down the gully to the right.



Photograph 12 – Photograph of looking eastwards from the eastern end of the Mt Gold Access. The proposed upgrading of the Mt Gold Access to a grade 2 trail could be extended off to the right away from the Thread the Needle Track.



Photograph 13 – Photograph of looking westwards along the proposed route of the walking track. Note the removal of the broom and branch trimming of kanuka would allow gaps within the kanuka stands to be opened up to allow a track of 1.5m – 2m without the need for removal of kanuka trees.



Photograph 14 – Photograph from the original site of the proposed memorial overlooking Lake Wanaka.



Photograph 15 – Photograph from the viewpoint identified on the Bike Wanaka trail map. This is located approximately 30m to the east from the proposed memorial site.



Photograph 16 – Photograph towards the eastern end of the Thread the Needle track showing changes in the desire line of bikers probably due to the rutting of the tracks surface.



Photograph 17 – Photograph of the western end of the overhead power pole located near Lot 22. This pole was installed two years ago. Some clearance of the existing kanuka was required to enable the utility service to be upgraded by the power contractor working on Aurora Energy's network.



Photograph 18 – Photograph of the eastern end of the Thread the Needle Track with the Peninsula Bay site boundary demarcated by the old post and netting fence on the left hand side of this photograph.



Photograph 19 – Photograph of looking eastwards towards Option A carpark. There is sufficient room to create a carpark for 10 – 15 cars without the need to remove any kanuka trees. The gravel turning head is in the approximate position of an earlier approved location for the open space carpark.