4 Ledger Road,
Atawhai,
Nelson 7010
(W) 03 5451758
(M) 027 476 8002
(E) mark@rounce.co.nz

10 January 2025

Tasman District Council
Private Bag 4
Richmond
NELSON

RE: On-Site Wastewater Disposal Assessment Report – Proposed Rezoning T-114a.

1.0 INTRODUCTION

Rounce Project Solutions Ltd have been engaged by TDC to undertake a assessment of the above land with regards to suitability for on-site wastewater disposal to assist TDC determine a minimum Lot size should the land be rezoned from Rural 2 to Rural Residential (unserviced).

A rezoning conceptual plan supplied by the TDC shows the land being considered for rezoning (refer Figure 2-1) and includes part of 216 Champion Road, Richmond. This is taken from the preliminary planning document, and this report seeks to provide information to assist confirming a minimum Lot size.

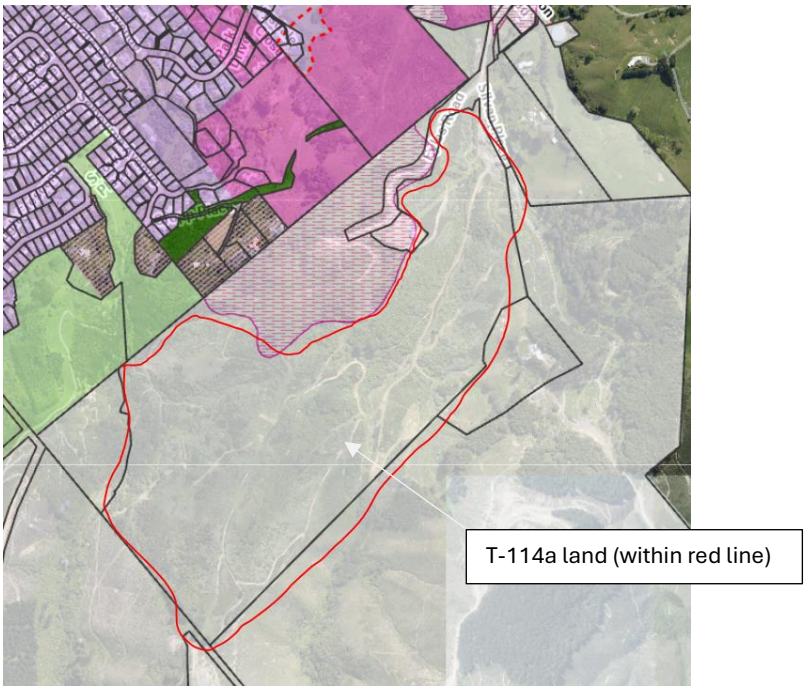


Figure 2-1: Site location

2.0 STATUTORY CONTEXT

There is no wastewater reticulation to this land and any rezoning will require any new residential lots to treat its own wastewater on site. The proposed rezoned land does not fall within The TDC designated the Special Domestic Wastewater Disposal Area (SSDWDA) or the Wastewater Management Area (WMA) and a new discharge of domestic wastewater into or onto land is a *permitted activity*, if it complies with the conditions listed in the TRMP Rule 36.1.2.4.

3.0 WASTEWATER ASSESSMENT

Wastewater water investigation included a desktop study of aerial mapping (Top of the South Maps) and soil maps (Soils and Agriculture of Waimea County New Zealand, DSIR) and site walkovers 13/01/25 and 14/01/25 considering wastewater LAA size, location and environmental constraints of slope and waterway positions.

3.1 Wastewater Loading

For this assessment it is assumed that a new house situated on the Lot BLA will have up to 4 bedrooms and reticulated water supply. From AS/NZS 1547:2012 the design throughput for a 4-bedroom house (design occupancy six people) is:

6 x 200L/d = 1200L/day.

3.2 Surface Conditions

The land is located in and around 216 Champion Road and is steep rugged country consisting of a number of ridgelines and drainage gullies.

We have attempted through the desk top study to identify and mark all potential waterways (continuously running or ephemeral) and TDC ecologist Matt Moss has also provided us with feedback on any wetlands relevant to this block of land.

3.3 Subsurface Conditions

A review of soil maps (Soils and Agriculture of Waimea County NZ) categorises soils to this block as Wantwood hill soils (and in terms of AS/NZS 1547:2012, **Category 4** *clay loams*) although a pockets of **Category 5** *light clays* are evident to some bank cuttings.

For the purposes of this assessment moderately structure **Category 5** Light Clays will be considered the limiting soil horizon.

3.4 Environmental Constraints

Following the surface and subsurface assessment, the Environmental Constraints listed in Table 3-1 need to be considered when determining areas where wastewater discharge can occur and these along with setbacks make up wastewater exclusion zones marked to Rounce Project Solutions Plan 7 'Proposed Rezoning T-114a', dated 10/01/25.

Table 3-1: Lot Environmental Constraints

Environmental Constraints	Risk Issue	Mitigation
Property boundaries	Off-site export of effluent	Min. 1.5m setback to allow for TRMP Rule 36.1.2.4 boundary setbacks and achieve a min. 10m separation between land application areas (LAA).
Groundwater	Pollution hazard	Min. 0.5m setback in accordance with Rule 36.1.2.4.

BLA and access routes	LAA damage	Wastewater system and LAA locations to avoid BLA/access routes.
Soil type and appropriate loading rates	Soil failure	Appropriate DIR/DLR in accordance with AS/NZS 1547 (adjusted for slope, if required).
Steeply sloping land and hillside surface drainage pathways	Off-site export of effluent	Install cut off drain uphill of any LAA to divert surface water away from nominated BLA area.
BLA construction fill	Possible instability risk	No placement of effluent to house supporting fill. No effluent disposal shall be sited where resultant saturation of earthfill can occur.
BLA/house stormwater flows	LAA flooding and off-site export of effluent	Shape BLA and water tank overflows to be diverted away from all LAA positions
Waterways	Pollution hazard and contaminant export	Min. 20m setback in accordance with Rule 36.1.2.4.
Wetlands	Pollution hazard and contaminant export	Min. 100m setback in accordance with NES Regulation 54.

4.0 WASTEWATER TREATMENT STANDARD/LAND APPLICATION SELECTION

It is important that an on-site wastewater management system is appropriate to the site, given the nature of the discharge and site conditions. Key design considerations for this land include:

- applying wastewater over a large area at low daily loading rates to match soil type and slopes.
- minimising soil disturbance during construction.
- minimising contamination pathway risk.

In order to mitigate against the above issues and identified environmental constraints, our assessment will be based on a secondary treatment system discharging to pressure compensated dripline designed in accordance with AS/NZS 1547:2012 by an approved wastewater consultant at time of building consent taking care of the need for conservative irrigation/soakage rates to avoid overloading the receiving soils.

5.0 LAND APPLICATION AREA SIZING

Land application area = Design Daily Flow Allowance (DFA)/Daily Irrigation Rate (DIR).

Table 5-1 sets out the area required for land application to match the design daily flow of 1200L/day.

Table 5-1: Minimum Land Application Area Requirements

Slope	DIR	Primary LAA Size	Reserve LAA Size*2	Total Area Reqd for Wastewater
$<5.7^0$	3.0mm/day	$400m^2$	$400m^2$	$800m^2$
5.7^0-11.7^0	2.4mm/day*1	$500m^2$	$500m^2$	$1000m^2$
$>11.70^0$	1.5mm/day*1	$800m^2$	$800m^2$	$1600m^2$

*1 – DIR reduction to allow for steepness of land (Table M2 AS/NZS 1547 2012)

*2 - In accordance with good design practice a Reserve LAA equal in size to the Primary Area is required to provide a contingency in the event of failure or the need to enlarge the Primary LAA.

6.0 MINIMUM LOT SIZES

Higher density consented sections exist on neighbouring properties following extensive earthwork creating flat sites and reducing the area for development. Allowing 500m^2 for building, carparking, driveway access, gardens and auxiliary buildings together with 800m^2 for wastewater discharge (on flat land or sloping land up to 5.7^0 refer Table 5-1 above) it would be possible to have sections of a min. size of 2000m^2 subject to detailed geotech and wastewater assessment at time of consent.

However, where land remains essentially undeveloped and allowing for the constraints of the shown wastewater exclusion zones on Plan 7, steepness of terrain/topography requiring LAA of 1600m^2, geotechnical constraints and difficulty of access larger Lots sizes will be required.

Yours faithfully,

Mark Rounce

Mark Rounce B.E. (Civil Hons) NZCE, Dip PM
Director and Wastewater Designer
Rounce Project Solutions Ltd

Limitations

(i) This report has been prepared for the particular purpose outlined in the project brief and no responsibility is accepted for the use in any other contexts or for any other purpose.

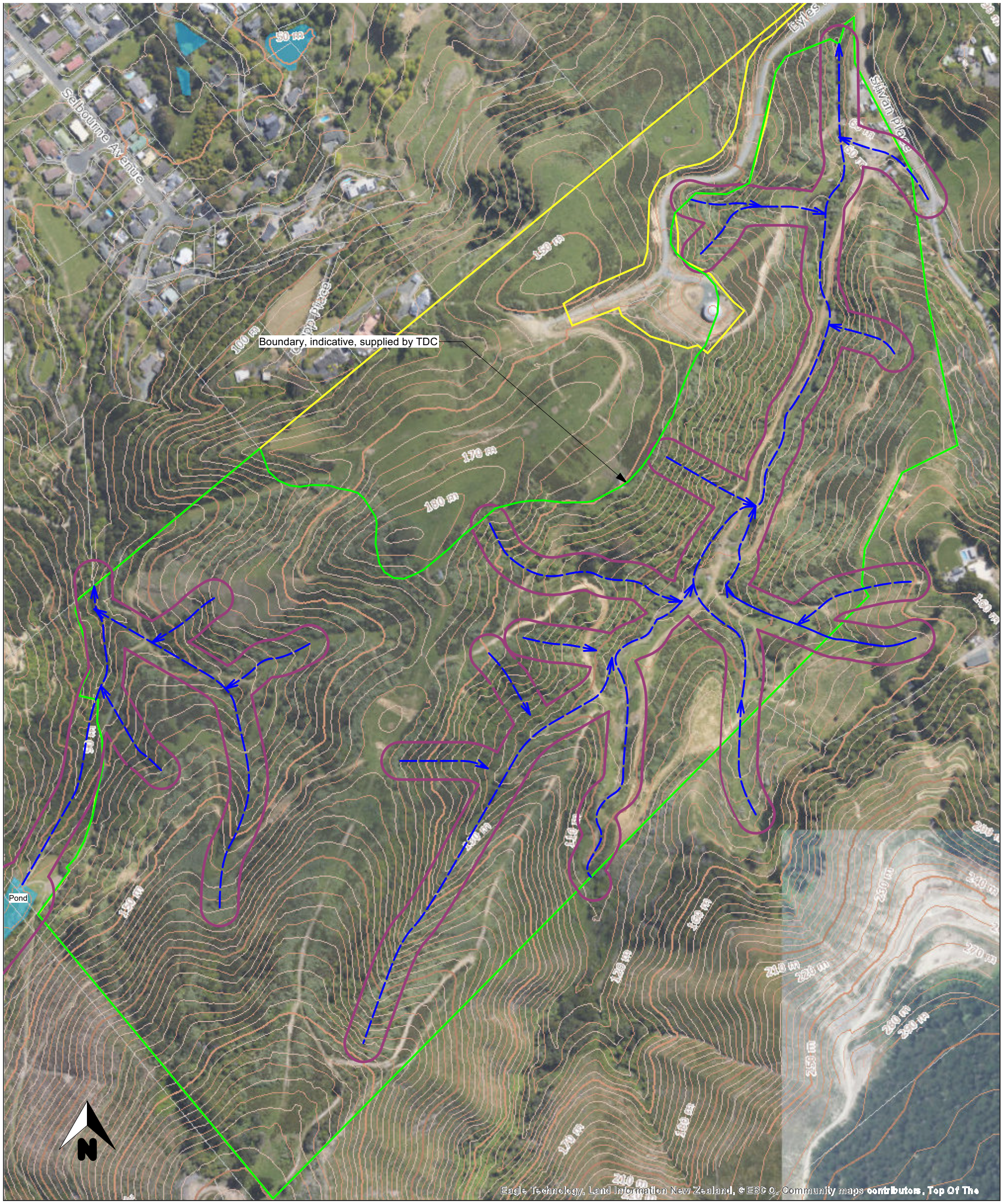
(ii) This report is based on a desktop assessment and 2 x short site visits only and Rounce Project Solutions did not perform a complete assessment of all possible conditions or circumstances that may exist at the site. Conditions may exist which were undetectable given the limited investigation. Therefore, this report and associated Plan can only be used as a guide. No warranty is included, either expressed or implied, that the actual conditions will conform to the assessments contained in this report.

(iii) Unless otherwise stated no assessment of ground stability and any instability that could result from the discharge of wastewater has been made. Rounce Project Solutions are not qualified to make this assessment, and it will be the Client's responsibility to get a qualified Geotechnical Engineer to make this assessment. No responsibility can be accepted by Rounce Project Solutions Ltd for instability that occurs.

(iv) Rounce Project Solutions is unaware of Council Development Rules (access, hazard overlays, flood overlays etc) outside that of wastewater and we have not considered any of these and their influence on wastewater treatment and discharge during this assessment.

(v) Where data supplied by the client or other external source, including previous site investigation data have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility can be accepted by Rounce Project Solutions Ltd for inaccuracies within data supplied by others.

(vi) This report is provided for the sole use by the Client and is confidential to him and his professional advisers. No responsibility whatsoever for the contents of this report will be accepted to any person other than the Client.



TITLE **Proposed Rezoning T-114a**	PLAN NUMBER 7 REVISION 1	DRAWN BY Viv Rounce
	SCALE 1:4000 A3	DATE 10/01/25
Site Plan Wastewater	ROUNCE PROJECT SOLUTIONS Creating Successful Projects	

Key

Waterway

Min LAA setbacks to waterways/ponds to be 20m

General Notes

This Plan to be read in conjunction with Rounce Project Solutions Wastewater Report dated 10 January 2025.

Boundaries are indicative only and have been positioned based on a TDC supplied Plan.

4 Ledger Road,
Atawhai,
Nelson 7010
(W) 03 5451758
(M) 027 476 8002
(E) mark@rounce.co.nz

10 July 2024

Tasman District Council
Private Bag 4
Richmond
NELSON

RE: On-Site Wastewater Disposal Assessment Report – Proposed Rezoning T-198.

1.0 INTRODUCTION

Rounce Project Solutions Ltd have been engaged by TDC to undertake a desktop assessment of the above land with regards to suitability for on-site wastewater disposal to assist TDC determine a minimum Lot size should the land be rezoned from Rural 1 to Rural Residential (unserviced).

Table 1-1: Property Information

Legal Description	Pt Lot 1 DP 7942, Lots 1, 2 and 3 DP 380879
Valuation Number	1937044800
Certificate of Title	355931 0/355932 0/355933 4A/299
Property Address	65 Higgins Road, Spring Grove
Lot Size	42.5067hectares (approx.)
Relevant TRMP rules	Rule 36.1.2.4 (Discharge of Domestic Wastewater)
Assumed Water Supply	Reticulated

A rezoning conceptual plan supplied by the TDC (Appendix A) shows the land being considered for rezoning (Figure 2-1). This is taken from the preliminary planning document, and this report seeks to provide information to assist confirming a minimum Lot size.

A review of the said property shows internal boundaries already exist (Pt Lot DP 7942, Lot 1 DP 380879, Lot 2 DP 380879 and Lot 3 DP 380879) created under RM050562 (2008) with RM 081064 allowing the construction of dwellings for Lots 2 and 3.

2.0 STATUTORY CONTEXT

There is no wastewater reticulation to this land and any rezoning will require any new residential lots to treat its own wastewater on site. The proposed rezoned land partly does not fall within The TDC designated the Special Domestic Wastewater Disposal Area (SSDWDA) or the Wastewater Management Area (WMA) and a new discharge of domestic wastewater into or onto land is a *permitted activity*, if it complies with the conditions listed in the TRMP Rule 36.1.2.4.

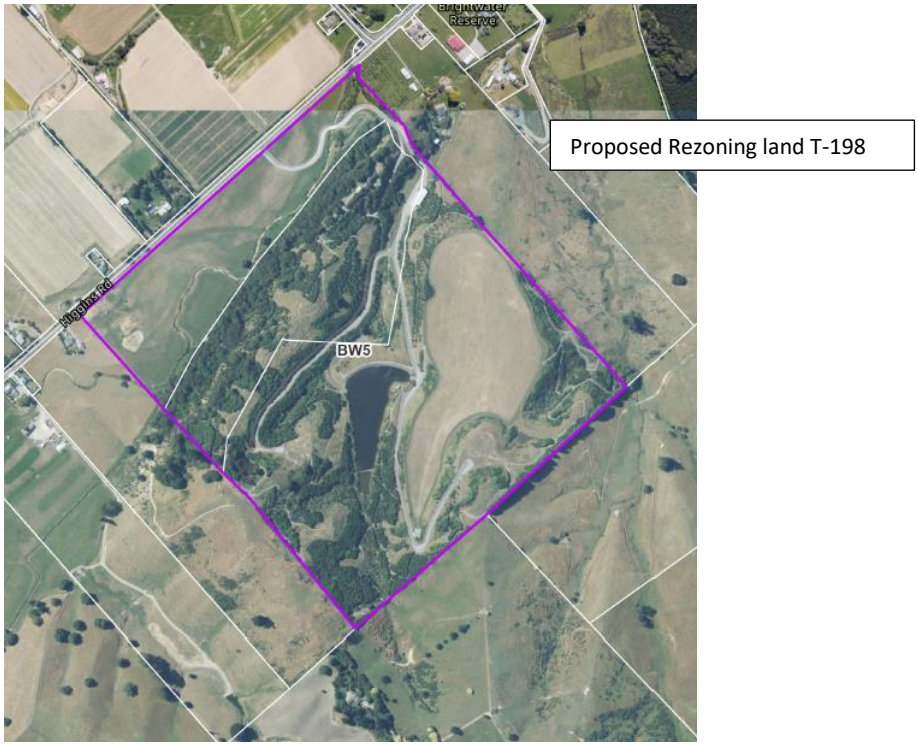


Figure 2-1: Site location

3.0 WASTEWATER ASSESSMENT

3.1 Wastewater Loading

For this assessment it is assumed that a new house situated on the Lot BLA will have up to 4 bedrooms and reticulated water supply. From AS/NZS 1547:2012 the design throughput for a 4-bedroom house (design occupancy six people) is:

6 x 200L/d = 1200L/day.

3.2 Surface Conditions

The land is located at the start and northeast end of Higgins Road, Spring Grove. The land parcel has internal boundaries dividing the block into 4 sections that includes flat land to the west adjacent Higgins Road and elevated land (balance, Lots 1, and 3) comprising 3 south north sloping ridgelines with moderately and steeply side slopes feeding a series of permanent and ephemeral waterways/ponds. An access road rises to an existing house located on Lot 1 and part way up the elevated land before rising up to the elevated ridgelines where flat building platforms have been formed on Lot 2 and Lot 3.

3.3 Subsurface Conditions

A review of soil maps (Soils and Agriculture of Waimea County NZ) categorises soils to Lots 1, 2 and 3 as Mapua Sandy Loams (and in terms of AS/NZS 1547:2012, **Category 5** *light clays*) and Pt Lot 1 DP7942 as Motupiko Loams (**Category 3** *silty loams*). Test pits undertaken during the site

and soil assessment under BC110401 (Lots 2 and 3, 2011) confirm the limiting soil layer is Category 5 light clay soils and recommends secondary treatment of wastewater before discharging to land via dripline land application.

3.4 Environmental Constraints

Following the surface and subsurface assessment Environmental Constraints listed in Table 3-1 need to be considered when determining areas where wastewater discharge can occur.

Table 3-1: Lot Environmental Constraints

Environmental Constraints	Risk Issue	Mitigation
Property boundaries	Off-site export of effluent	Min. 1.55m setback to allow for TRMP Rule 36.1.2.4 boundary setbacks and achieve a min. 10m separation between land application areas (LAA).
Groundwater	Pollution hazard	Min. 0.5m setback in accordance with Rule 36.1.2.4.
BLA and access routes	LAA damage	Wastewater system and LAA locations to avoid BLA/access routes.
Soil type and appropriate loading rates	Soil failure	Appropriate DIR/DLR in accordance with AS/NZS 1547 (adjusted for slope, if required).
Moderately/steeply sloping land and hillside surface drainage pathways	Off-site export of effluent	Install cut off drain uphill of any LAA to divert surface water away from nominated BLA area.
BLA construction fill	Possible instability risk	No placement of effluent to house supporting fill. No effluent disposal shall be sited where resultant saturation of earthfill can occur.
BLA/house stormwater flows	LAA flooding and off-site export of effluent	Shape BLA and water tank overflows to be diverted away from all LAA positions
Waterways	Pollution hazard and contaminant export	Min. 20m setback in accordance with Rule 36.1.2.4.

4.0 WASTEWATER TREATMENT STANDARD/LAND APPLICATION SELECTION

It is important that an on-site wastewater management system is appropriate to the site, given the nature of the discharge and site conditions. Key design considerations for this land include:

- applying wastewater over a large area at low daily irrigation rates.
- minimising soil disturbance during construction.
- minimising contamination pathway risk.

In order to mitigate against the above issues and identified environmental constraints, for Lots 1, 2 and 3, I concur with the wastewater assessment made under BC110401 and recommended that a secondary treatment system discharging to pressure compensated dripline be installed designed in accordance with AS/NZS 1547:2012 by an approved wastewater consultant at time of building consent taking care of the need for conservative irrigation/soakage rates to avoid overloading the receiving soils.

For Pt Lot 1 DP 7942 a primary treatment system discharging to soakage bed/trench or AES land application is likely to be possible.

5.1 Land Application Area Sizing

Land application area = Design Daily Flow Allowance (DFA)/Daily Irrigation Rate (DIR).

Table 5-1 sets out the area required for land application to match the design daily flow.

Table 5-1: Minimum Land Application Area Requirements

Lot No	DFA	DIR (50% slope reduction)	LAA Size
Lots 1, 2 and 3 DP 380879	1200L/day	1.5mm/day	800m^2
Pt Lot 1 DP 7942	1200L/day	10mm/day	120m^2

In accordance with good design practice a Reserve LAA equal in size to the Primary Area is required, to provide a contingency in the event of failure or the need to enlarge the Primary LAA.

5.2 Subdivision/Wastewater Plan

5.2.1 Lots 1,2 and 3

Following the existing internal boundaries existing access roads and building platforms created to Lots 2 and 3 and although not land development subdivision specialists we have attempted to identify further suitable BLA locations to ridges and elevated land to maximise views.

Allowing for other section land area use requirements of driveway access, BLA cut/fill earthworks, gardens and auxiliary buildings, and together with boundary and waterway setbacks we have on Rounce Project Solutions Plan 1 (Proposed Rezoning T-198, dated 10/07/24) identified minimum Lots sizes that will allow enough land for house and land development and wastewater discharge.

Note - For Lot 1 a house with wastewater treatment and disposal already exists but its size and location are unknown but is likely to fall outside the shown restrictive setbacks.

5.2.2 Pt Lot 1 DP 7942

Allowing 900m^2 for building, carparking, driveway access, BLA cut/fill earthworks, gardens and auxiliary buildings there is ample land available for wastewater discharge. Assuming access of Higgins Road is possible we have on Rounce Project Solutions Plan 1 (Proposed Rezoning T-198, dated 10/07/24) identified minimum Lots sizes that will allow enough land for house and land development and wastewater discharge.

6.0 CONCLUSION

To allow wastewater discharge indicative minimum Lots sizes vary from 1.8ha to 2.4ha for Pt Lot 1 DP 7942 and 1.9ha to 4ha for Lots 1, 2 and 3 DP 380879).

Yours faithfully,

Mark Rounce

Mark Rounce B.E. (Civil Hons) NZCE, Dip PM
Director and Wastewater Designer
Rounce Project Solutions Ltd

Limitations

(i) This report has been prepared for the particular purpose outlined in the project brief and no responsibility is accepted for the use in any other contexts or for any other purpose.

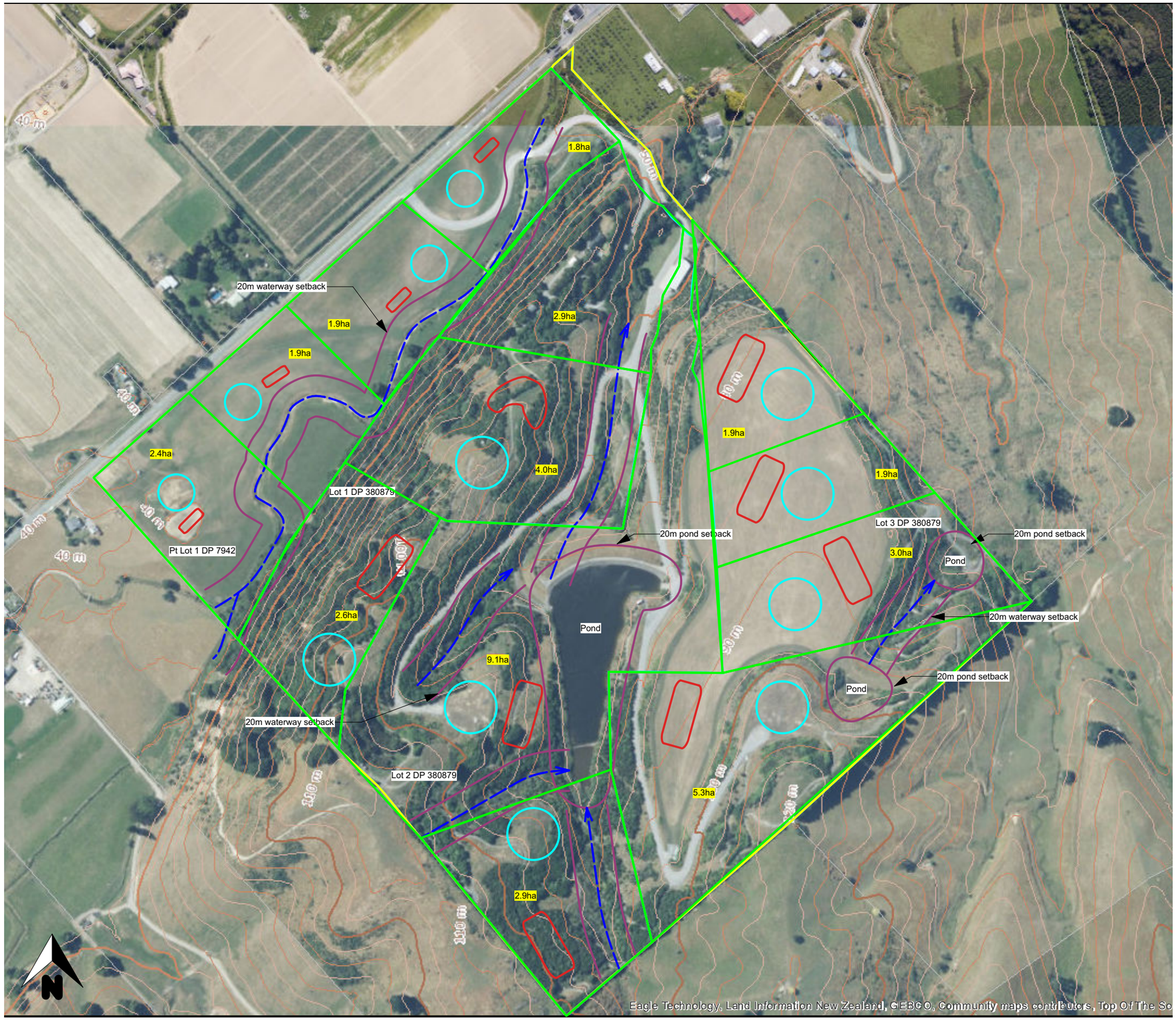
(ii) This report is based on a desktop assessment only and Rounce Project Solutions did not undertake a site visit or perform a complete assessment of all possible conditions or circumstances that may exist at the site. Conditions may exist which were undetectable given the limited investigation. Therefore, this report and associated Plan can only be used as a guide. No warranty is included, either expressed or implied, that the actual conditions will conform to the assessments contained in this report.

(iii) Unless otherwise stated no assessment of ground stability and any instability that could result from the discharge of wastewater has been made. Rounce Project Solutions are not qualified to make this assessment, and it will be the Client's responsibility to get a qualified Geotechnical Engineer to make this assessment. No responsibility can be accepted by Rounce Project Solutions Ltd for instability that occurs.

(iv) Rounce Project Solutions is unaware of Council Development Rules (access, hazard overlays, flood overlays etc) outside that of wastewater and we have not considered any of these and their influence on wastewater treatment and discharge during this assessment.

(v) Where data supplied by the client or other external source, including previous site investigation data have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility can be accepted by Rounce Project Solutions Ltd for inaccuracies within data supplied by others.

(vi) This report is provided for the sole use by the Client and is confidential to him and his professional advisers. No responsibility whatsoever for the contents of this report will be accepted to any person other than the Client.



Key

Lots 1, 2 & 3 DP 380879

- Indicative Building site location (2000m²)
- Indicative Field area (1600m²)

Pt Lot 1 DP 7942

- Indicative Building site location (900m²)
- Indicative Field area (240m²)

All Lots

- Min LAA setbacks to waterways/ponds to be 20m

General Notes

This Plan to be read in conjunction with Rounce Project Solutions Wastewater Report dated 10 July 2024.

Boundaries are indicative only and have been positioned based on a TDC supplied Plan.

TITLE

Proposed Rezoning T-198

Site Plan Wastewater

PLAN NUMBER	1	DRAWN BY	Viv Rounce
REVISION	1		
SCALE	1:4000 A3	DATE	10/07/24

ROUNCE PROJECT SOLUTIONS
Creating Successful Projects

4 Ledger Road,
Atawhai,
Nelson 7010
(W) 03 5451758
(M) 027 476 8002
(E) mark@rounce.co.nz

30 August 2024

Tasman District Council
Private Bag 4
Richmond
NELSON

RE: On-Site Wastewater Disposal Assessment Report – Proposed Rezoning T-17a.

1.0 INTRODUCTION

Rounce Project Solutions Ltd have been engaged by TDC to undertake a desktop assessment of the above land with regards to suitability for on-site wastewater disposal to assist TDC determine a minimum Lot size should the land be rezoned from Rural 2 to Rural Residential (unserviced).

A rezoning conceptual (Figure 1-1 below) supplied by the TDC shows the land being considered for rezoning and is land that borders Motueka Highway and College Street, Motueka. This is taken from the preliminary planning document, and this report seeks to provide information to assist confirming a minimum Lot size.

Figure 1-1: Site location

2.0 STATUTORY CONTEXT

There is no wastewater reticulation to this land and any rezoning will require any new residential lots to treat its own wastewater on site. The proposed rezoned land does not fall within The TDC designated the Special Domestic Wastewater Disposal Area (SSDWDA) or the Wastewater Management Area (WMA) and a new discharge of domestic wastewater into or onto land is a *permitted activity*, if it complies with the conditions listed in the TRMP Rule 36.1.2.4.

3.0 WASTEWATER ASSESSMENT

3.1 Wastewater Loading

For this assessment it is assumed that a new house situated on the Lot BLA will have up to 4 bedrooms and reticulated water supply. From AS/NZS 1547:2012 the design throughput for a 4-bedroom house (design occupancy six people) is:

6 x 200L/d = 1200L/day.

3.2 Surface Conditions

The Plan supplied by TDC shows much of the considered land has already been segmented into a number of sections varying in size (i.e. 277 College St – 1435m^2, 70 Stony Ridge Way – 18.36ha). Many of these sections due to size and topography/terrain limit further subdivision. We have however focussed on the larger section areas and have attempted through the desk top study to identify all potential environmental constraints (i.e. waterways, wetland etc) that would influence further subdivision.

3.3 Subsurface Conditions

A review of soil maps (Soils and Agriculture of Waimea County NZ) categorises soils to this block as being mostly Kaiteriteri Hill Soils (sandy loams on clay) and in terms of AS/NZS 1547:2012, **Category 4** *clay loams*.

For the purposes of this assessment weakly structure Category 4 Clay Loams will be considered the limiting soil horizon.

3.4 Environmental Constraints

Following the surface and subsurface assessment, the Environmental Constraints listed in Table 3-1 need to be considered when determining areas where wastewater discharge can occur and these along with setbacks make up wastewater exclusion zones marked to Rounce Project Solutions Plan 6 'Proposed Rezoning T-17a', dated 30/08/24.

Table 3-1: Lot Environmental Constraints

Environmental Constraints	Risk Issue	Mitigation
Property boundaries	Off-site export of effluent	Min. 1.55m setback to allow for TRMP Rule 36.1.2.4 boundary setbacks and achieve a min. 10m separation between land application areas (LAA).
Groundwater	Pollution hazard	Min. 0.5m setback in accordance with Rule 36.1.2.4.
BLA and access routes	LAA damage	Wastewater system and LAA locations to avoid BLA/access routes.

Soil type and appropriate loading rates	Soil failure	Appropriate DIR/DLR in accordance with AS/NZS 1547 (adjusted for slope, if required).
Steeply sloping land and hillside surface drainage pathways	Off-site export of effluent	Install cut off drain uphill of any LAA to divert surface water away from nominated BLA area.
BLA construction fill	Possible instability risk	No placement of effluent to house supporting fill. No effluent disposal shall be sited where resultant saturation of earthfill can occur.
BLA/house stormwater flows	LAA flooding and off-site export of effluent	Shape BLA and water tank overflows to be diverted away from all LAA positions
Waterways	Pollution hazard and contaminant export	Min. 20m setback in accordance with Rule 36.1.2.4.
Wetlands	Pollution hazard and contaminant export	Min. 100m setback in accordance with NES Regulation 54.

4.0 WASTEWATER TREATMENT STANDARD/LAND APPLICATION SELECTION

It is important that an on-site wastewater management system is appropriate to the site, given the nature of the discharge and site conditions. Key design considerations for this land include:

- applying wastewater over a large area at low daily loading rates to match soil type and slopes.
- minimising soil disturbance during construction.
- minimising contamination pathway risk.

In order to mitigate against the above issues and identified environmental constraints, our assessment has been based on a secondary treatment system discharging to pressure compensated dripline designed in accordance with AS/NZS 1547:2012 taking care of the need for conservative irrigation/soakage rates to avoid overloading the receiving soils.

4.1 Land Application Area Sizing

Land application area = Design Daily Flow Allowance (DFA)/Daily Irrigation Rate (DIR).

Table 4-1 sets out the area required for land application to match the design daily flow.

Table 4-1: Minimum Land Application Area Requirements

DFA	DIR (50% slope reduction) *1	LAA Size
1200L/day	1.75mm/day	686m^2

*1 – DIR further reduced to allow for steepness of land

In accordance with good design practice a Reserve LAA equal in size to the Primary Area is required, to provide a contingency in the event of failure or the need to enlarge the Primary LAA.

6.0 MINIMUM LOT SIZES

Allowing 2000m^2 for building, carparking, driveway access, BLA cut/fill earthworks, gardens and auxiliary buildings together with 1400m^2 for wastewater discharge it would be possible to have sections of a min. size of 3500m^2.

However, allowing for the constraints of wastewater exclusion zones, steepness of terrain/topography, geotechnical constraints and difficulty of access Lots sizes larger than this may be required.

Although not land development subdivision specialists we have on Project Solutions Plan 6 'Proposed Rezoning T-17a' dated 30/08/24, attempted to work within identified wastewater exclusion zones and identified possible BLA locations.

Yours faithfully,

Mark Rounce

Mark Rounce B.E. (Civil Hons) NZCE, Dip PM
Director and Wastewater Designer
Rounce Project Solutions Ltd

Limitations

(i) This report has been prepared for the particular purpose outlined in the project brief and no responsibility is accepted for the use in any other contexts or for any other purpose.

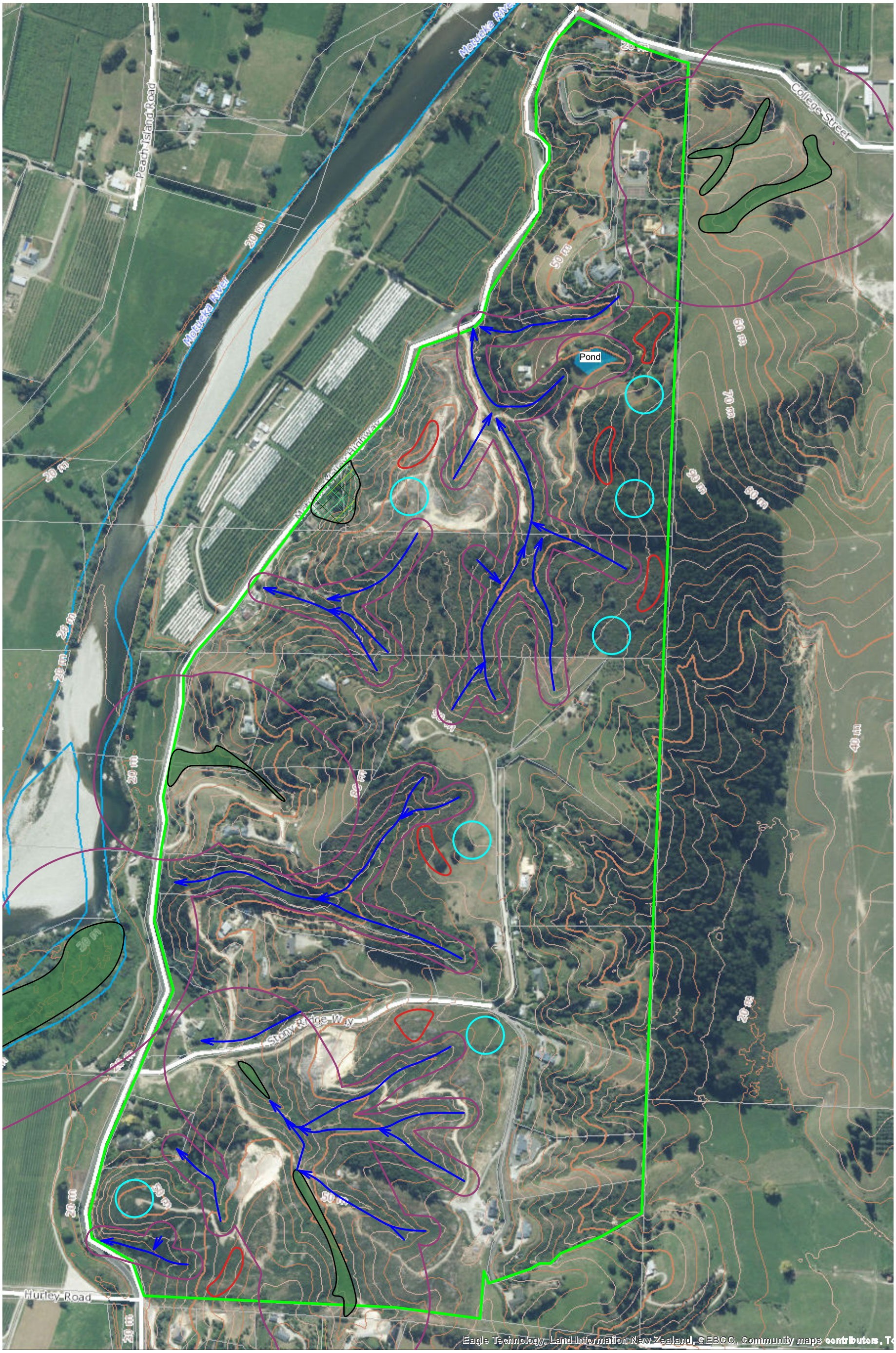
(ii) This report is based on a desktop assessment only and Rounce Project Solutions did not undertake a site visit or perform a complete assessment of all possible conditions or circumstances that may exist at the site. Conditions may exist which were undetectable given the limited investigation. Therefore, this report and associated Plan can only be used as a guide. No warranty is included, either expressed or implied, that the actual conditions will conform to the assessments contained in this report.

(iii) Unless otherwise stated no assessment of ground stability and any instability that could result from the discharge of wastewater has been made. Rounce Project Solutions are not qualified to make this assessment, and it will be the Client's responsibility to get a qualified Geotechnical Engineer to make this assessment. No responsibility can be accepted by Rounce Project Solutions Ltd for instability that occurs.

(iv) Rounce Project Solutions is unaware of Council Development Rules (access, hazard overlays, flood overlays etc) outside that of wastewater and we have not considered any of these and their influence on wastewater treatment and discharge during this assessment.

(v) Where data supplied by the client or other external source, including previous site investigation data have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility can be accepted by Rounce Project Solutions Ltd for inaccuracies within data supplied by others.

(vi) This report is provided for the sole use by the Client and is confidential to him and his professional advisers. No responsibility whatsoever for the contents of this report will be accepted to any person other than the Client.



N

TITLE

Proposed Rezoning T-17a

Site Plan Wastewater

PLAN NUMBER	6	DRAWN BY	Viv Rounce
REVISION	1		
SCALE	1:5000 A3	DATE	30/08/24

ROUNCE PROJECT SOLUTIONS
Creating Successful Projects

General Notes

This Plan to be read in conjunction with Rounce Project Solutions Wastewater Report dated 30 August 2024.

Boundaries are indicative only and have been positioned based on a TDC supplied Plan.

Key

- Indicative Building site location (2000m²)
- Indicative Field area (1400m²)
- Wetland areas
- Wetter soils area
- Min LAA setbacks to waterways/ponds to be 20m
- Min LAA setbacks to Wetlands are 100m

4 Ledger Road,
Atawhai,
Nelson 7010
(W) 03 5451758
(M) 027 476 8002
(E) mark@rounce.co.nz

10 July 2024

Tasman District Council
Private Bag 4
Richmond
NELSON

RE: On-Site Wastewater Disposal Assessment Report – Proposed Rezoning T-17c.

1.0 INTRODUCTION

Rounce Project Solutions Ltd have been engaged by TDC to undertake a desktop assessment of the above land with regards to suitability for on-site wastewater disposal to assist TDC determine a minimum Lot size should the land be rezoned from Rural 1 to Rural Residential (unserviced).

A rezoning conceptual plan supplied by the TDC shows the land being considered for rezoning (Lot 1 DP 1487 - 219 Hursthouse Street, Motueka). This is taken from the preliminary planning document and this report seeks to provide information to assist confirming a minimum Lot size.

2.0 STATUTORY CONTEXT

There is no wastewater reticulation to this land and any rezoning will require any new residential lots to treat its own wastewater on site. The proposed rezoned land does not fall within The TDC designated the Special Domestic Wastewater Disposal Area (SSDWDA) or the Wastewater Management Area (WMA) and a new discharge of domestic wastewater into or onto land is a *permitted activity*, if it complies with the conditions listed in the TRMP Rule 36.1.2.4.

3.0 WASTEWATER ASSESSMENT

3.1 Wastewater Loading

For this assessment it is assumed that a new house situated on the Lot BLA will have up to 4 bedrooms and reticulated water supply. From AS/NZS 1547:2012 the design throughput for a 4-bedroom house (design occupancy six people) is:

6 x 200L/d = 1200L/day.

3.2 Surface Conditions

The land is located at 219 Hursthouse Street and is a combination of rolling hills to the north and east otherwise gently sloping grazing paddocks.

We have attempted through the desk top study to identify all potential waterways (continuously running or ephemeral). TDC ecologist Matt Moss has also provided us with designated wetland areas in an around this block of land.

3.3 Subsurface Conditions

A review of soil maps (Soils and Agriculture of Waimea County NZ) categorises soils to this block as being a combination of Hau Stony Sandy Loams (and in terms of AS/NZS 1547:2012, **Category 2** *sandy loams*) and Sherry Sand and Sandy Loams (**Category 2** *sandy loams*).

For the purposes of this assessment moderately structure Category 2 Sandy Loams will be considered the limiting soil horizon.

3.4 Environmental Constraints

Following the surface and subsurface assessment, the Environmental Constraints listed in Table 3-1 need to be considered when determining areas where wastewater discharge can occur and these along with setbacks make up wastewater exclusion zones marked to Rounce Project Solutions Plan 3 'Proposed Rezoning T-17c', dated 10/07/24.

Table 3-1: Lot Environmental Constraints

Environmental Constraints	Risk Issue	Mitigation
Property boundaries	Off-site export of effluent	Min. 1.55m setback to allow for TRMP Rule 36.1.2.4 boundary setbacks and achieve a min. 10m separation between land application areas (LAA).
Groundwater	Pollution hazard	Min. 0.5m setback in accordance with Rule 36.1.2.4.
BLA and access routes	LAA damage	Wastewater system and LAA locations to avoid BLA/access routes.
Soil type and appropriate loading rates	Soil failure	Appropriate DIR/DLR in accordance with AS/NZS 1547 (adjusted for slope, if required).
Steeply sloping land and hillside surface drainage pathways	Off-site export of effluent	Install cut off drain uphill of any LAA to divert surface water away from nominated BLA area.
BLA construction fill	Possible instability risk	No placement of effluent to house supporting fill. No effluent disposal shall be sited where resultant saturation of earthfill can occur.
BLA/house stormwater flows	LAA flooding and off-site export of effluent	Shape BLA and water tank overflows to be diverted away from all LAA positions
Waterways	Pollution hazard and contaminant export	Min. 20m setback in accordance with Rule 36.1.2.4.
Wetlands	Pollution hazard and contaminant export	Min. 100m setback in accordance with NES Regulation 54.

4.0 WASTEWATER TREATMENT STANDARD/LAND APPLICATION SELECTION

It is important that an on-site wastewater management system is appropriate to the site, given the nature of the discharge and site conditions. Key design considerations for this land include:

- applying wastewater over a large area at low daily loading rates to match soil type and slopes.
- minimising soil disturbance during construction.
- minimising contamination pathway risk.

In order to mitigate against the above issues and identified environmental constraints, our assessment has been based on a secondary treatment system discharging to pressure compensated dripline designed in accordance with AS/NZS 1547:2012 taking care of the need for conservative irrigation/soakage rates to avoid overloading the receiving soils.

4.1 Land Application Area Sizing

Land application area = Design Daily Flow Allowance (DFA)/Daily Irrigation Rate (DIR).

Table 4-1 sets out the area required for land application to match the design daily flow.

Table 4-1: Minimum Land Application Area Requirements

DFA	DIR (50% slope reduction) *1	LAA Size
1200L/day	2.5mm/day	480m^2

*1 – DIR further reduced to allow for steepness of land

In accordance with good design practice a Reserve LAA equal in size to the Primary Area is required, to provide a contingency in the event of failure or the need to enlarge the Primary LAA.

6.0 MINIMUM LOT SIZES

Allowing 2000m^2 for building, carparking, driveway access, BLA cut/fill earthworks, gardens and auxiliary buildings together with 1000m^2 for wastewater discharge it would be possible to have sections of a min. size of 3000m^2.

However, allowing for the constraints of wastewater exclusion zones, steepness of terrain/topography, geotechnical constraints and difficulty of access Lots sizes larger than this may be required.

Yours faithfully,

Mark Rounce

Mark Rounce B.E. (Civil Hons) NZCE, Dip PM
Director and Wastewater Designer
Rounce Project Solutions Ltd

Limitations

(i) This report has been prepared for the particular purpose outlined in the project brief and no responsibility is accepted for the use in any other contexts or for any other purpose.

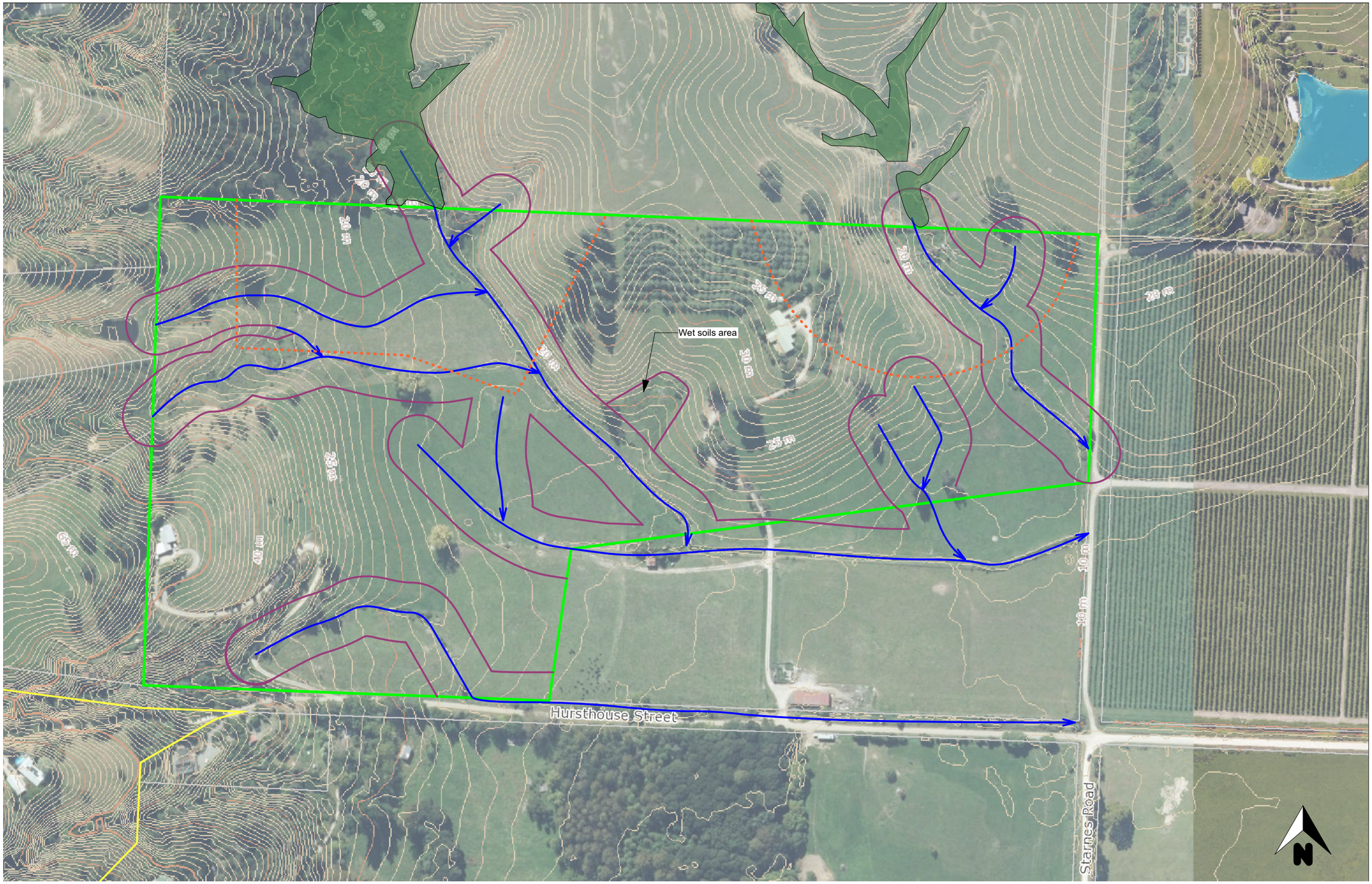
(ii) This report is based on a desktop assessment only and Rounce Project Solutions did not undertake a site visit or perform a complete assessment of all possible conditions or circumstances that may exist at the site. Conditions may exist which were undetectable given the limited investigation. Therefore, this report and associated Plan can only be used as a guide. No warranty is included, either expressed or implied, that the actual conditions will conform to the assessments contained in this report.

(iii) Unless otherwise stated no assessment of ground stability and any instability that could result from the discharge of wastewater has been made. Rounce Project Solutions are not qualified to make this assessment, and it will be the Client's responsibility to get a qualified Geotechnical Engineer to make this assessment. No responsibility can be accepted by Rounce Project Solutions Ltd for instability that occurs.

(iv) Rounce Project Solutions is unaware of Council Development Rules (access, hazard overlays, flood overlays etc) outside that of wastewater and we have not considered any of these and their influence on wastewater treatment and discharge during this assessment.

(v) Where data supplied by the client or other external source, including previous site investigation data have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility can be accepted by Rounce Project Solutions Ltd for inaccuracies within data supplied by others.

(vi) This report is provided for the sole use by the Client and is confidential to him and his professional advisers. No responsibility whatsoever for the contents of this report will be accepted to any person other than the Client.



TITLE **Proposed Rezoning T-17c**	PLAN NUMBER 3 REVISION 1	DRAWN BY Viv Rounce	
	SCALE 1:2500 A3	DATE 10/07/24	
Site Plan Wastewater	ROUNCE PROJECT SOLUTIONS Creating Successful Projects		

General Notes

This Plan to be read in conjunction with Rounce Project Solutions Wastewater Report dated 10 July 2024.

Boundaries are indicative only and have been positioned based on a TDC supplied Plan.

Key

- Wetland areas
- Min LAA setbacks to waterways/ponds to be 20m
- Min LAA setbacks to Wetlands are 100m

4 Ledger Road,
Atawhai,
Nelson 7010
(W) 03 5451758
(M) 027 476 8002
(E) mark@rounce.co.nz

10 July 2024

Tasman District Council
Private Bag 4
Richmond
NELSON

RE: On-Site Wastewater Disposal Assessment Report – Proposed Rezoning T-17d, T-213 and T-205.

1.0 INTRODUCTION

Rounce Project Solutions Ltd have been engaged by TDC to undertake a desktop assessment of the above land with regards to suitability for on-site wastewater disposal to assist TDC determine a minimum Lot size should the land be rezoned from Rural 2 to Rural Residential (unserviced).

A rezoning conceptual plan supplied by the TDC shows the land being considered for rezoning (refer Figure 2-1). This is taken from the preliminary planning document and this report seeks to provide information to assist confirming a minimum Lot size.

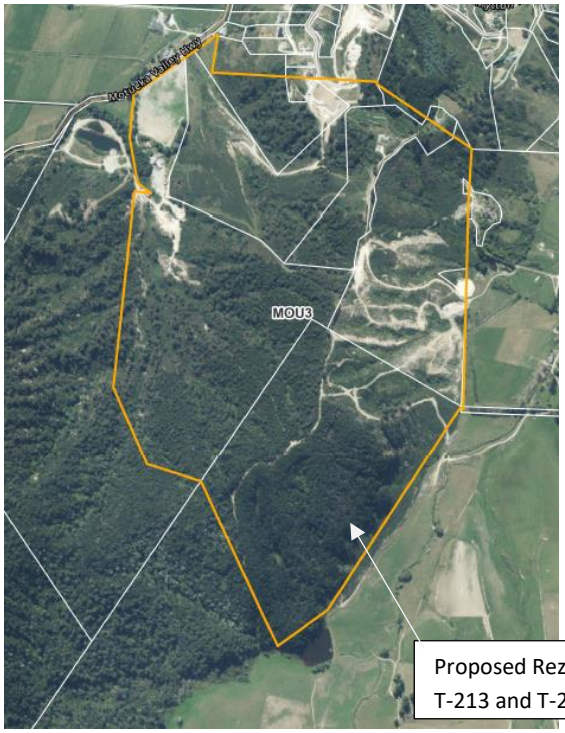


Figure 2-1: Site location

A review of the rezoned considered land shows internal boundaries already exist (Part of Lot 63 DP 536032, Lot 12 DP 536032, Part of Lot 71 DP 559945, Lot 1 DP 472456, Lot 1 DP 538424, Part of Lot 8 DP 342383, Lot 2 DP 391796 and Lot 1 DP 391796).

2.0 STATUTORY CONTEXT

There is no wastewater reticulation to this land and any rezoning will require any new residential lots to treat its own wastewater on site. The proposed rezoned land does not fall within The TDC designated the Special Domestic Wastewater Disposal Area (SSDWDA) or the Wastewater Management Area (WMA) and a new discharge of domestic wastewater into or onto land is a *permitted activity*, if it complies with the conditions listed in the TRMP Rule 36.1.2.4.

3.0 WASTEWATER ASSESSMENT

3.1 Wastewater Loading

For this assessment it is assumed that a new house situated on the Lot BLA will have up to 4 bedrooms and reticulated water supply. From AS/NZS 1547:2012 the design throughput for a 4-bedroom house (design occupancy six people) is:

6 x 200L/d = 1200L/day.

3.2 Surface Conditions

The land is located in and around 319 Motueka Valley Highway, Pineview Way, Mytton Heights, 170 McBrydie Road and 14 Waiwhero Road and is steep rugged country consisting of a number of ridgelines and drainage gullies.

We have attempted through the desk top study to identify all potential waterways (continuously running or ephemeral). TDC ecologist Matt Moss has also provided us with designated wetland areas.

3.3 Subsurface Conditions

A review of soil maps (Soils and Agriculture of Waimea County NZ) categorises soils to this block as Kaiteriteri Hill Soils (and in terms of AS/NZS 1547:2012, **Category 4** *clay loams*) although a small pocket and Pt Lot 1 DP7942 as Motupiko Loams (**Category 3** *silty loams*).

For the purposes of this assessment moderately structure Category 4 Clay Loams will be considered the limiting soil horizon.

3.4 Environmental Constraints

Following the surface and subsurface assessment, the Environmental Constraints listed in Table 3-1 need to be considered when determining areas where wastewater discharge can occur and these along with setbacks make up wastewater exclusion zones marked to Rounce Project Solutions Plan 2 'Proposed Rezoning T-17d, T-213 and T-205', dated 10/07/24.

Table 3-1: Lot Environmental Constraints

Environmental Constraints	Risk Issue	Mitigation
Property boundaries	Off-site export of effluent	Min. 1.55m setback to allow for TRMP Rule 36.1.2.4 boundary setbacks and achieve a min. 10m separation between land application areas (LAA).

Groundwater	Pollution hazard	Min. 0.5m setback in accordance with Rule 36.1.2.4.
BLA and access routes	LAA damage	Wastewater system and LAA locations to avoid BLA/access routes.
Soil type and appropriate loading rates	Soil failure	Appropriate DIR/DLR in accordance with AS/NZS 1547 (adjusted for slope, if required).
Steeply sloping land and hillside surface drainage pathways	Off-site export of effluent	Install cut off drain uphill of any LAA to divert surface water away from nominated BLA area.
BLA construction fill	Possible instability risk	No placement of effluent to house supporting fill. No effluent disposal shall be sited where resultant saturation of earthfill can occur.
BLA/house stormwater flows	LAA flooding and off-site export of effluent	Shape BLA and water tank overflows to be diverted away from all LAA positions
Waterways	Pollution hazard and contaminant export	Min. 20m setback in accordance with Rule 36.1.2.4.
Wetlands	Pollution hazard and contaminant export	Min. 100m setback in accordance with NES Regulation 54.

4.0 WASTEWATER TREATMENT STANDARD/LAND APPLICATION SELECTION

It is important that an on-site wastewater management system is appropriate to the site, given the nature of the discharge and site conditions. Key design considerations for this land include:

- applying wastewater over a large area at low daily loading rates to match soil type and slopes.
- minimising soil disturbance during construction.
- minimising contamination pathway risk.

In order to mitigate against the above issues and identified environmental constraints, our assessment will be based on a secondary treatment system discharging to pressure compensated dripline designed in accordance with AS/NZS 1547:2012 by an approved wastewater consultant at time of building consent taking care of the need for conservative irrigation/soakage rates to avoid overloading the receiving soils.

5.1 Land Application Area Sizing

Land application area = Design Daily Flow Allowance (DFA)/Daily Irrigation Rate (DIR).

Table 5-1 sets out the area required for land application to match the design daily flow.

Table 5-1: Minimum Land Application Area Requirements

DFA	DIR (50% slope reduction)*1	LAA Size
1200L/day	1.5mm/day	800m^2

*1 – DIR further reduced to allow for steepness of land

In accordance with good design practice a Reserve LAA equal in size to the Primary Area is required, to provide a contingency in the event of failure or the need to enlarge the Primary LAA.

6.0 MINIMUM LOT SIZES

Allowing 2000m^2 for building, carparking, driveway access, BLA cut/fill earthworks, gardens and auxiliary buildings together with 1600m^2 for wastewater discharge it would be possible to have sections of a min. size of 4000m^2.

However, allowing for the constraints of wastewater exclusion zones, steepness of terrain/topography, geotechnical constraints and difficulty of access Lots sizes a lot larger than this may be required.

Although not land development subdivision specialists we have on Project Solutions Plan 2 'Proposed Rezoning T-17d, T-213 and T-205' dated 10/07/24, attempted to work within identified wastewater exclusion zones and identified possible BLA locations.

Yours faithfully,

Mark Rounce

Mark Rounce B.E. (Civil Hons) NZCE, Dip PM
Director and Wastewater Designer
Rounce Project Solutions Ltd

Limitations

(i) This report has been prepared for the particular purpose outlined in the project brief and no responsibility is accepted for the use in any other contexts or for any other purpose.

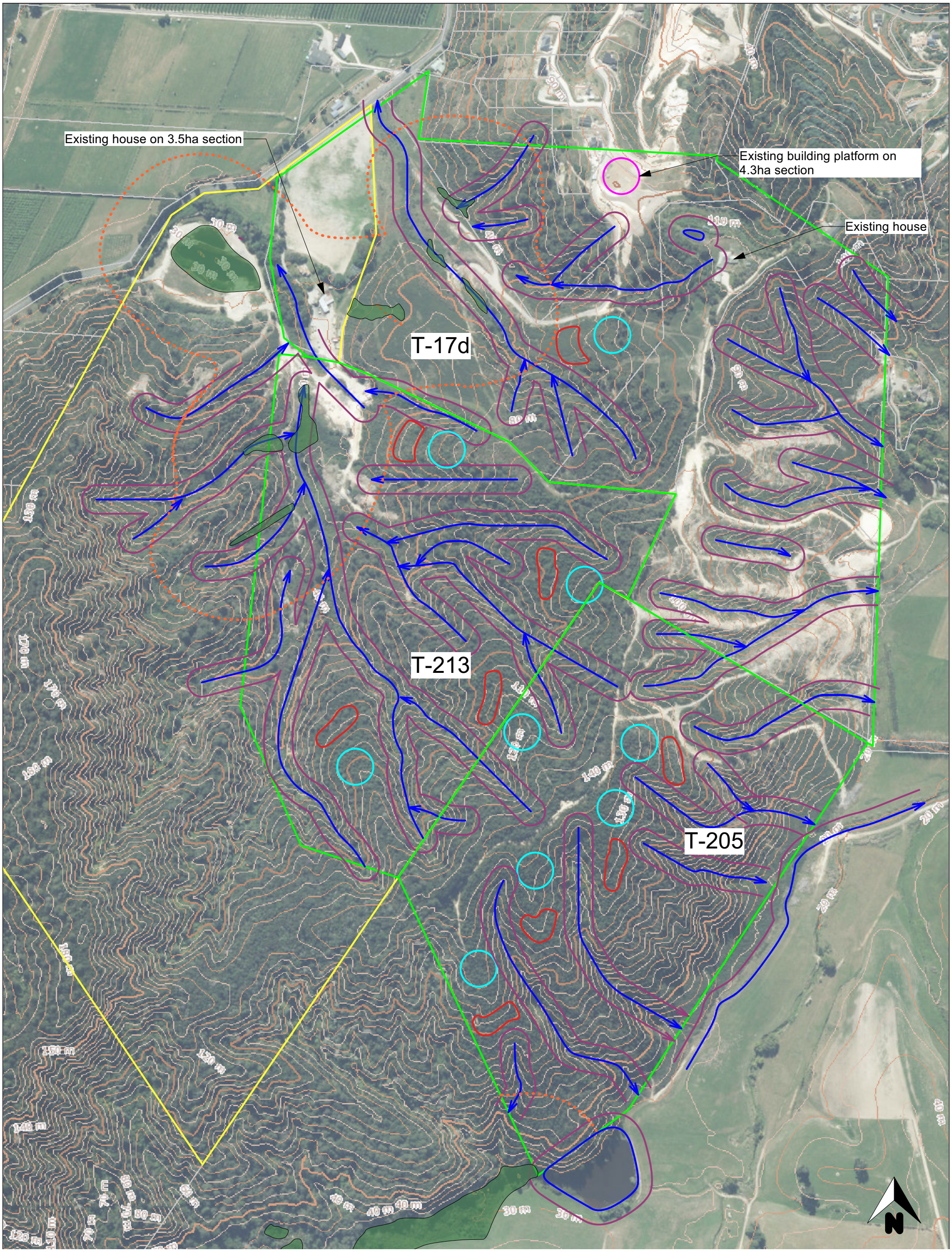
(ii) This report is based on a desktop assessment only and Rounce Project Solutions did not undertake a site visit or perform a complete assessment of all possible conditions or circumstances that may exist at the site. Conditions may exist which were undetectable given the limited investigation. Therefore, this report and associated Plan can only be used as a guide. No warranty is included, either expressed or implied, that the actual conditions will conform to the assessments contained in this report.

(iii) Unless otherwise stated no assessment of ground stability and any instability that could result from the discharge of wastewater has been made. Rounce Project Solutions are not qualified to make this assessment, and it will be the Client's responsibility to get a qualified Geotechnical Engineer to make this assessment. No responsibility can be accepted by Rounce Project Solutions Ltd for instability that occurs.

(iv) Rounce Project Solutions is unaware of Council Development Rules (access, hazard overlays, flood overlays etc) outside that of wastewater and we have not considered any of these and their influence on wastewater treatment and discharge during this assessment.

(v) Where data supplied by the client or other external source, including previous site investigation data have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility can be accepted by Rounce Project Solutions Ltd for inaccuracies within data supplied by others.

(vi) This report is provided for the sole use by the Client and is confidential to him and his professional advisers. No responsibility whatsoever for the contents of this report will be accepted to any person other than the Client.



TITLE **Proposed Rezoning T-17d, T-213 & T-205** **Site Plan Wastewater**	PLAN NUMBER 2 REVISION 1	DRAWN BY Viv Rounce	
	SCALE 1:5000 A3	DATE 10/07/24	

ROUNCE PROJECT SOLUTIONS
Creating Successful Projects

General Notes

This Plan to be read in conjunction with Rounce Project Solutions Wastewater Report dated 10 July 2024.

Boundaries are indicative only and have been positioned based on a TDC supplied Plan.

Key

- Indicative Building site location (2000m²)
- Indicative Field area (1600m²)
- Wetland areas
- Min LAA setbacks to waterways/ponds to be 20m
- Min LAA setbacks to Wetlands are 100m

4 Ledger Road,
Atawhai,
Nelson 7010
(W) 03 5451758
(M) 027 476 8002
(E) mark@rounce.co.nz

21 August 2024

Tasman District Council
Private Bag 4
Richmond
NELSON

RE: On-Site Wastewater Disposal Assessment Report – Proposed Rezoning T-140a.

1.0 INTRODUCTION

Rounce Project Solutions Ltd have been engaged by TDC to undertake a desktop assessment of the above land with regards to suitability for on-site wastewater disposal to assist TDC determine a minimum Lot size should the land be rezoned from Rural 2 to Rural Residential (unserviced). Additional to a desktop study a site drive over inspection and 3 test pits were undertaken on 24/07/24 and 17/01/25 respectively.

A rezoning conceptual plan supplied by the TDC shows the land being considered for rezoning (refer Figure 1-1). This is taken from the preliminary planning document, and this report seeks to provide information to assist confirming a minimum Lot size.

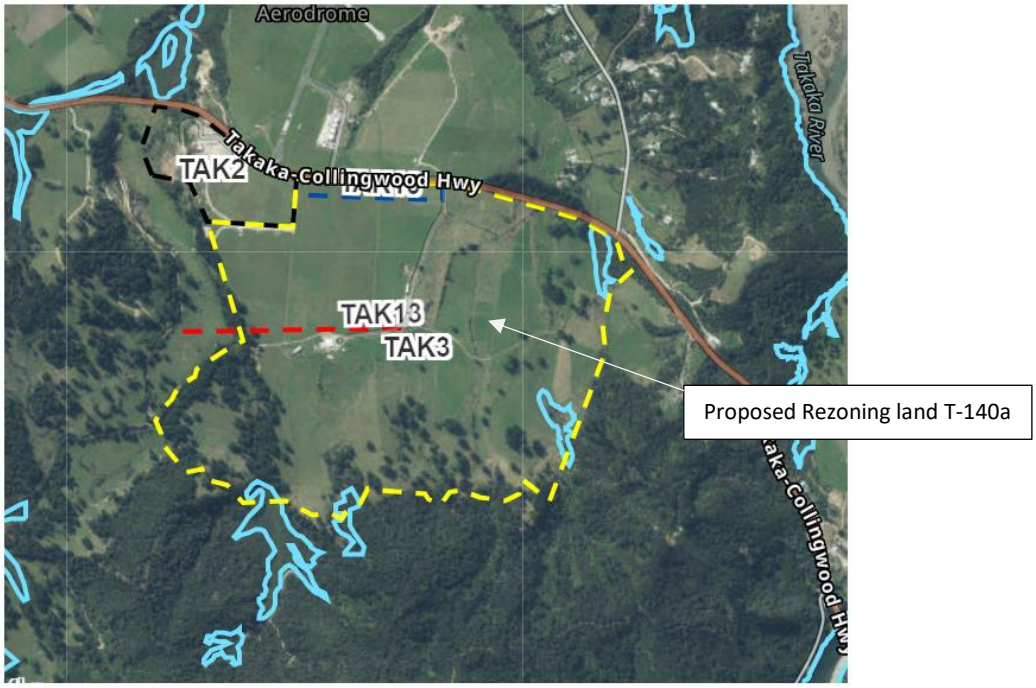


Figure 1-1: Site location

2.0 STATUTORY CONTEXT

There is no wastewater reticulation to this land and any rezoning will require any new residential lots to treat its own wastewater on site. The proposed rezoned land does not fall within The TDC designated the Special Domestic Wastewater Disposal Area (SSDWDA) or the Wastewater Management Area (WMA) and a new discharge of domestic wastewater into or onto land is a *permitted activity*, if it complies with the conditions listed in the TRMP Rule 36.1.2.4.

3.0 WASTEWATER ASSESSMENT

3.1 Wastewater Loading

For this assessment it is assumed that a new house situated on the Lot BLA will have up to 4 bedrooms and reticulated water supply. From AS/NZS 1547:2012 the design throughput for a 4-bedroom house (design occupancy six people) is:

6 x 200L/d = 1200L/day.

3.2 Surface Conditions

The land is located in and around 259 Takaka-Collingwood Highway and is located approx. 3.8km on the way to Collingwood from the township of Takaka. The land is a farm and contains a mix of landforms from flat paddocks to the north to rolling hills to the south, east and west of the property. On the property there exists and a number of creeks/streams and one river and many drainage ditches/swales formed to help drain farmland.

The current property owner resides in a house located centrally on the property and various farm buildings (an old milk shed etc) and access tracks support the farming operation be it scaled down compared to earlier years.

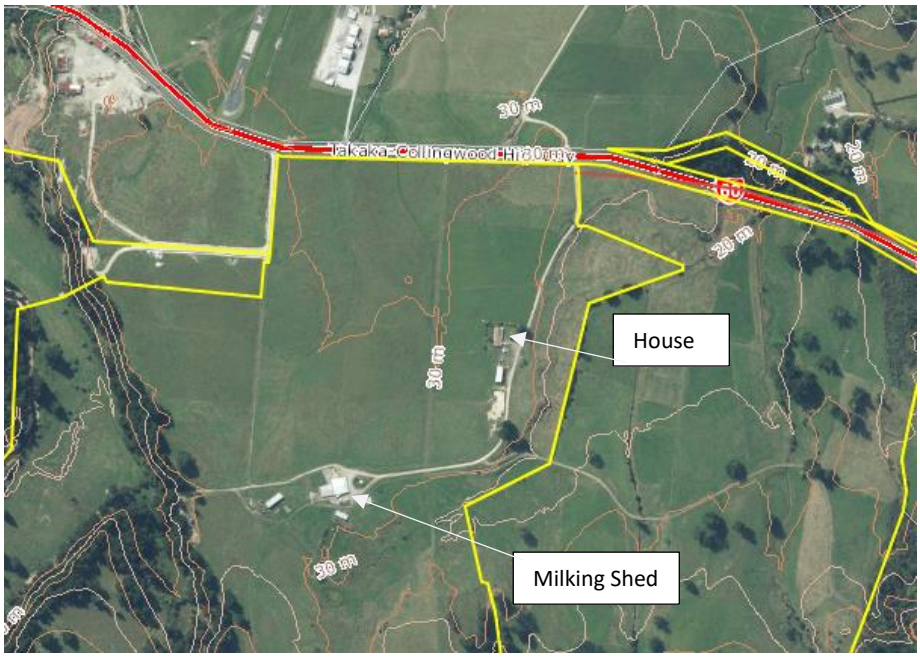


Figure 3-2: Buildings

Vegetation is a mix of paddock grasses to grazed farmland and thick bush and pine trees to steeper non-farmed land.

We have attempted through the desk top study and site visits to identify all potential waterways (continuously running or ephemeral). Wetland areas exist near the proposed rezoned land and have been identified on our Plan 5 'Proposed Rezoning T-140a'and included in our assessment.

3.3 Subsurface Conditions

An assessment of likely soil types has been made from site observations of bank cuttings, 3 test pits and review of a geotechnical report of land immediately to the northwest of the propped rezoned land (Tasman Consulting Engineers – 'Geotechnical Report – Proposed Subdivision – C Rose 259 Takaka-Collingwood Hwy, Puramahoi, Takaka', dated 12 April 2021).

The geotechnical report and test pit work identified a hardpan layer restricting water drainage resulting in periodic/long term soil saturation. Site vegetation (swamp reeds) and extensive paddock drainage swales/ditches/channels dug to assist land drainage would suggest this restrictive drainage layer exist to all the farm paddocks located between the Takaka-Collingwood Highway and the milking shed. White plastic clay soils that are evident close to the existing residence have been excavated and used for pottery. These soil conditions make wastewater discharge to land challenging. These poorer draining soils will also restrict treatment potential. For this land a soil Category of 6 applies.

For the purposes of the assessment of the balance land a land application area based on Category 5 soils will be used.

3.4 Environmental Constraints

Following the surface and subsurface assessment, the Environmental Constraints listed in Table 3-1 need to be considered when determining areas where wastewater discharge can occur and these along with setbacks make up wastewater exclusion zones marked to Rounce Project Solutions Plan 5 'Proposed Rezoning T-140a', dated 21/08/24 rev 2.

Table 3-1: Lot Environmental Constraints

Environmental Constraints	Risk Issue	Mitigation
Property boundaries	Off-site export of effluent	Min. 1.55m setback to allow for TRMP Rule 36.1.2.4 boundary setbacks and achieve a min. 10m separation between land application areas (LAA).
Groundwater	Pollution hazard	Min. 0.5m setback in accordance with Rule 36.1.2.4.
BLA and access routes	LAA damage	Wastewater system and LAA locations to avoid BLA/access routes.
Soil type and appropriate loading rates	Soil failure	Appropriate DIR/DLR in accordance with AS/NZS 1547 (adjusted for slope, if required).
Steeply sloping land and hillside surface drainage pathways	Off-site export of effluent	Install cut off drain uphill of any LAA to divert surface water away from nominated BLA area.
BLA construction fill	Possible instability risk	No placement of effluent to house supporting fill. No effluent disposal shall be sited where resultant saturation of earthfill can occur.
BLA/house stormwater flows	LAA flooding and off-site export of effluent	Shape BLA and water tank overflows to be diverted away from all LAA positions
Waterways	Pollution hazard and contaminant export	Min. 20m setback in accordance with Rule 36.1.2.4.

Wetlands	Pollution hazard and contaminant export	Min. 100m setback in accordance with NES Regulation 54.
Hardpan restrictive drainage soils	Poor drainage and treatment	Low application rates and high treatment standard prior to discharge to land.

4.0 WASTEWATER TREATMENT STANDARD/LAND APPLICATION SELECTION

It is important that an on-site wastewater management system is appropriate to the site, given the nature of the discharge and site conditions. Key design considerations for this land include:

- applying wastewater over a large area at low daily loading rates to match soil type and slopes.
- minimising soil disturbance during construction.
- minimising contamination pathway risk.

4.1 Treatment Standard

To mitigate against the above issues and identified environmental constraints Table 4-1 below sets out the required treatment standard.

Table 4-1: Treatment Standard

Location	Treatment Standard
Farm paddock land between the Takaka-Collingwood Highway and the raceway leading to the Milking Shed	Advanced secondary treatment (BOD_5/TSS <10mg/L) discharging to pressure compensated dripline
Elsewhere	Secondary treatment (BOD_5 <20mg/L and TSS <30mg/L) discharging to pressure compensated dripline

4.2 Land Application Area Sizing

Land application area = Design Daily Flow Allowance (DFA)/Daily Irrigation Rate (DIR).

Table 4-2 sets out the area required for land application to match the design daily flow.

Table 4-2: Minimum Land Application Area Requirements

Location	DFA	DIR	LAA Size
Farm paddock land between the Takaka-Collingwood Highway and the raceway leading to the Milking Shed	1200L/day	1.0mm/day	1200m^2
Elsewhere	1200L/day	1.5mm/day*1	800m^2

*1 – DIR further reduced to allow for steepness of land

In accordance with good design practice a Reserve LAA equal in size to the Primary Area is required, to provide a contingency in the event of failure or the need to enlarge the Primary LAA.

5.0 MINIMUM LOT SIZES

5.1 Farm paddock land between the Takaka-Collingwood Highway and the raceway leading to the Milking Shed

Allowing 1000m^2 for building, carparking, driveway access, BLA cut/fill earthworks, gardens and auxiliary buildings and taking into consideration the impact of hardpan soils restricting effluent drainage and treatment we recommend a min. Lot size of 4000m^2.

5.2 Elsewhere

Allowing 1500m^2 for building, carparking, driveway access, BLA cut/fill earthworks, gardens and auxiliary buildings together with 1600m^2 for wastewater discharge we recommend a min. Lot size of 3500m^2.

Allowing for the constraints of wastewater exclusion zones, steepness of terrain/topography, geotechnical constraints and difficulty of access Lots sizes larger than this may be required.

Although not land development subdivision specialists we have on Project Solutions Plan 5 'Proposed Rezoning T-140a' dated 21/08/24 rev 2, attempted to work within identified wastewater exclusion zones and identified possible BLA locations.

Yours faithfully,

Mark Rounce

Mark Rounce B.E. (Civil Hons) NZCE, Dip PM
Director and Wastewater Designer
Rounce Project Solutions Ltd

Limitations

(i) This report has been prepared for the particular purpose outlined in the project brief and no responsibility is accepted for the use in any other contexts or for any other purpose.

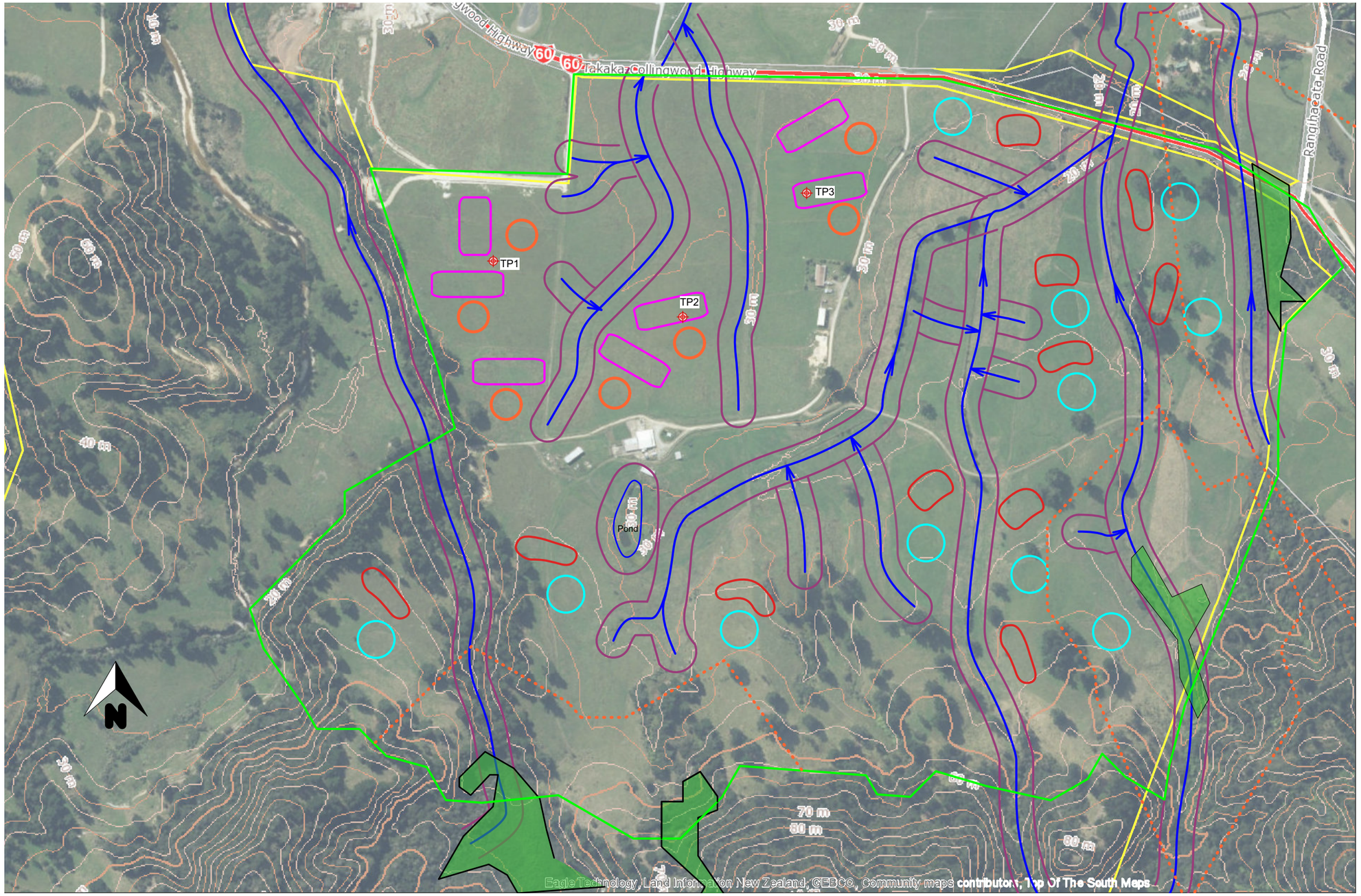
(ii) This report is based on a desktop assessment and two site visits and Rounce Project Solutions did not perform a complete assessment of all possible conditions or circumstances that may exist at the site. Conditions may exist which were undetectable given the limited investigation. Therefore, this report and associated Plan can only be used as a guide. No warranty is included, either expressed or implied, that the actual conditions will conform to the assessments contained in this report.

(iii) Unless otherwise stated no assessment of ground stability and any instability that could result from the discharge of wastewater has been made. Rounce Project Solutions are not qualified to make this assessment, and it will be the Client's responsibility to get a qualified Geotechnical Engineer to make this assessment. No responsibility can be accepted by Rounce Project Solutions Ltd for instability that occurs.

(iv) Rounce Project Solutions is unaware of Council Development Rules (access, hazard overlays, flood overlays etc) outside that of wastewater and we have not considered any of these and their influence on wastewater treatment and discharge during this assessment.

(v) Where data supplied by the client or other external source, including previous site investigation data have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility can be accepted by Rounce Project Solutions Ltd for inaccuracies within data supplied by others.

(vi) This report is provided for the sole use by the Client and is confidential to him and his professional advisers. No responsibility whatsoever for the contents of this report will be accepted to any person other than the Client.



TITLE **Proposed Rezoning T-140a**	PLAN NUMBER 5 REVISION 2	DRAWN BY Viv Rounce
	SCALE 1:5000 A3	DATE 21/08/24
Site Plan Wastewater	ROUNCE PROJECT SOLUTIONS Creating Successful Projects	

General Notes

This Plan to be read in conjunction with Rounce Project Solutions Wastewater Report dated 21 August 2024.

Boundaries are indicative only and have been positioned based on a TDC supplied Plan.

Key

- Indicative Building site location (1500m²)
- Indicative LAA (1600m²)
- Indicative Building site location (1000m²)
- Indicative LAA (2400m²)
- Wetland areas
- Min LAA setbacks to waterways/ponds to be 20m
- Min LAA setbacks to Wetlands are 100m
- Testpit locations

4 Ledger Road,
Atawhai,
Nelson 7010
(W) 03 5451758
(M) 027 476 8002
(E) mark@rounce.co.nz

10 July 2024

Tasman District Council
Private Bag 4
Richmond
NELSON

RE: On-Site Wastewater Disposal Assessment Report – Proposed Rezoning T-181a and T-219a.

1.0 INTRODUCTION

Rounce Project Solutions Ltd have been engaged by TDC to undertake a desktop assessment of the above land with regards to suitability for on-site wastewater disposal to assist TDC determine a minimum Lot size should the land be rezoned from Rural 2 to Rural Residential (unserviced).

A rezoning conceptual plan supplied by the TDC shows the land being considered for rezoning (refer Figure 2-1). This is taken from the preliminary planning document and this report seeks to provide information to assist confirming a minimum Lot size.

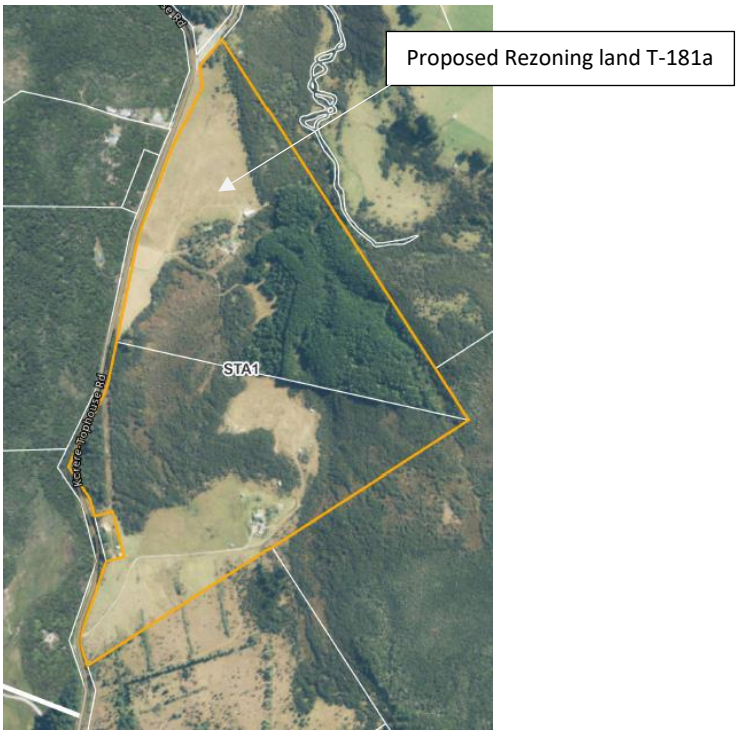


Figure 2-1: Site location

A review of the said rezone consideration land shows internal boundaries already exist (Lot 8 DP 12707 and Lot 7 DP 12705).

2.0 STATUTORY CONTEXT

There is no wastewater reticulation to this land and any rezoning will require any new residential lots to treat its own wastewater on site. The proposed rezoned land does not fall within The TDC designated the Special Domestic Wastewater Disposal Area (SSDWDA) or the Wastewater Management Area (WMA) and a new discharge of domestic wastewater into or onto land is a *permitted activity*, if it complies with the conditions listed in the TRMP Rule 36.1.2.4.

3.0 WASTEWATER ASSESSMENT

3.1 Wastewater Loading

For this assessment it is assumed that a new house situated on the Lot BLA will have up to 4 bedrooms and reticulated water supply. From AS/NZS 1547:2012 the design throughput for a 4-bedroom house (design occupancy six people) is:

6 x 200L/d = 1200L/day.

3.2 Surface Conditions

The land is located at 3177 and 3103 Korere-Tophouse Road is a combination of gently undulating rolling land located to the east and flattish land elsewhere. Korere-Tophouse Road forms the west boundary of the land being considered for rezoning.

Small creeks exist along the east side boundary, Motupiko River exists to the west side of Korere-Tophouse Road and Council identified wetland areas cover central areas of the proposed block.

Native forest covers over half the area with the balance cleared to allow rough sheep/cattle grazing.

3.3 Subsurface Conditions

A review of soil maps (Soils and Agriculture of Waimea County NZ) categorises soils to this block as Tophouse Stony Silt Loams Soils (and in terms of AS/NZS 1547:2012, **Category 4** *clay loams*). A review of the wastewater design for 3103 Korere-Tophouse Road confirmed use of this same soil classification for design.

For the purposes of this assessment moderately structure Category 4 Clay Loams will be considered the limiting soil horizon.

3.4 Environmental Constraints

Following the surface and subsurface assessment, the Environmental Constraints listed in Table 3-1 need to be considered when determining areas where wastewater discharge can occur and these along with setbacks make up wastewater exclusion zones marked to Rounce Project Solutions Plan 4 (Proposed Rezoning T-181a and T-219a, dated 10/07/24).

Table 3-1: Lot Environmental Constraints

Environmental Constraints	Risk Issue	Mitigation
Property boundaries	Off-site export of effluent	Min. 1.5m setback to allow for TRMP Rule 36.1.2.4 boundary setbacks and achieve a min. 10m separation between land application areas (LAA).
Groundwater	Pollution hazard	Min. 0.5m setback in accordance with Rule 36.1.2.4.
BLA and access routes	LAA damage	Wastewater system and LAA locations to avoid BLA/access routes.
Soil type and appropriate loading rates	Soil failure	Appropriate DIR/DLR in accordance with AS/NZS 1547 (adjusted for slope, if required).
Surface drainage pathways	Off-site export of effluent	Install cut off drain uphill of any LAA to divert surface water away from nominated BLA area.
BLA construction fill	Possible instability risk	No placement of effluent to house supporting fill. No effluent disposal shall be sited where resultant saturation of earthfill can occur.
BLA/house stormwater flows	LAA flooding and off-site export of effluent	Shape BLA and water tank overflows to be diverted away from all LAA positions
Waterways	Pollution hazard and contaminant export	Min. 20m setback in accordance with Rule 36.1.2.4.
Wetlands	Pollution hazard and contaminant export	Min. 100m setback in accordance with NES Regulation 54.

4.0 WASTEWATER TREATMENT STANDARD/LAND APPLICATION SELECTION

It is important that an on-site wastewater management system is appropriate to the site, given the nature of the discharge and site conditions. Key design considerations for this land include:

- applying wastewater over a large area at low daily loading rates to match soil type and slopes.
- minimising soil disturbance during construction.
- minimising contamination pathway risk.

In order to mitigate against the above issues and identified environmental constraints, our assessment will be based on a primary treatment system discharging to a soakage bed/trench or AES system designed in accordance with AS/NZS 1547:2012 by an approved wastewater consultant at time of building consent taking care of the need for conservative irrigation/soakage rates to avoid overloading the receiving soils.

5.1 Land Application Area Sizing

Land application area = Design Daily Flow Allowance (DFA)/Daily Loading Rate (DLR).

Table 5-1 sets out the area required for land application to match the design daily flow.

Table 5-1: Minimum Land Application Area Requirements

DFA	DIR	LAA Size
1080L/day	10mm/day	108m^2

In accordance with good design practice a Reserve LAA equal in size to the Primary Area is required, to provide a contingency in the event of failure or the need to enlarge the Primary LAA.

6.0 MINIMUM LOT SIZES

Allowing for identified wastewater exclusion zones we have identified an area of approximately 4.1ha in the north and 3.5ha in the south that could be developed (refer Rounce Project Solutions Plan 4 'Proposed Rezoning T-181a and T-219a', dated 10/07/24).

Allowing 900m^2 for building, carparking, driveway access, BLA cut/fill earthworks, gardens and auxiliary buildings together with 250m^2 for wastewater discharge and potential cumulative effects between developed sections it would be possible to have sections of a min. size of 2500m^2.

Yours faithfully,

Mark Rounce

Mark Rounce B.E. (Civil Hons) NZCE, Dip PM
Director and Wastewater Designer
Rounce Project Solutions Ltd

Limitations

(i) This report has been prepared for the particular purpose outlined in the project brief and no responsibility is accepted for the use in any other contexts or for any other purpose.

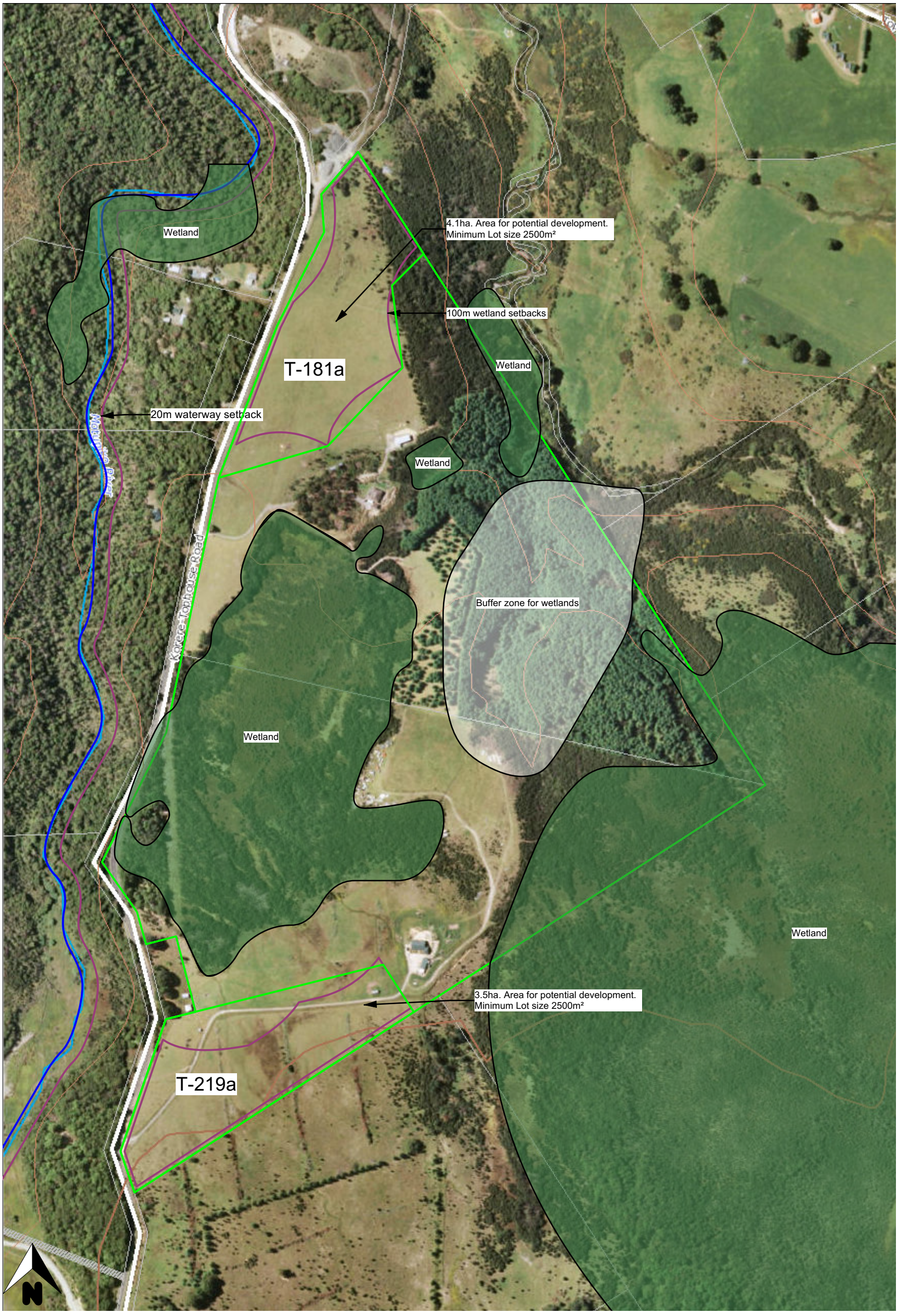
(ii) This report is based on a desktop assessment only and Rounce Project Solutions did not undertake a site visit or perform a complete assessment of all possible conditions or circumstances that may exist at the site. Conditions may exist which were undetectable given the limited investigation. Therefore, this report and associated Plan can only be used as a guide. No warranty is included, either expressed or implied, that the actual conditions will conform to the assessments contained in this report.

(iii) Unless otherwise stated no assessment of ground stability and any instability that could result from the discharge of wastewater has been made. Rounce Project Solutions are not qualified to make this assessment, and it will be the Client's responsibility to get a qualified Geotechnical Engineer to make this assessment. No responsibility can be accepted by Rounce Project Solutions Ltd for instability that occurs.

(iv) Rounce Project Solutions is unaware of Council Development Rules (access, hazard overlays, flood overlays etc) outside that of wastewater and we have not considered any of these and their influence on wastewater treatment and discharge during this assessment.

(v) Where data supplied by the client or other external source, including previous site investigation data have been used, it has been assumed that the information is correct unless otherwise stated. No responsibility can be accepted by Rounce Project Solutions Ltd for inaccuracies within data supplied by others.

(vi) This report is provided for the sole use by the Client and is confidential to him and his professional advisers. No responsibility whatsoever for the contents of this report will be accepted to any person other than the Client.



TITLE **Proposed Rezoning T-181a & T-219a**	PLAN NUMBER 4 REVISION 1	DRAWN BY Viv Rounce
	SCALE 1:5000 A3	DATE 10/07/24
Site Plan Wastewater	ROUNCE PROJECT SOLUTIONS Creating Successful Projects	

General Notes

This Plan to be read in conjunction with Rounce Project Solutions Wastewater Report dated 10 July 2024.

Boundaries are indicative only and have been positioned based on a TDC supplied Plan.