

# REPORT

## North Taranaki Visitor Centre Traffic Impact Assessment

for RCP

Rev A - 18/08/2023



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	Reviewed	
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# 1 INTRODUCTION

BTW Company Ltd (BTW) has been engaged by RCP Ltd on behalf of their client, Te Kotahitanga o Te Atiawa, to provide a traffic impact assessment for the proposed North Taranaki Visitor Centre (NTVC) upgrade within Te Papakura o Taranaki (Egmont National Park).

This Traffic Impact Assessment (TIA) has been prepared on behalf of RCP and Te Kotahitanga o Te Atiawa. It supports the Concession application to the Department of Conservation for occupation of Te Papakura o Taranaki. This TIA has been prepared at the preliminary design phase, and it is expected that the design will continue to mature through the remain design and project phases.

The new visitor centre facilities will be located in the general vicinity of the existing visitor centre carparks and facilities, which are jointly situated on Part Egmont National Park Survey Office Plan 10039, Part Section 2 Block XIV Egmont SD, and New Plymouth District Council (NPDC) road reserve.

Refer Figure 1.1 for an aerial image of the existing site.

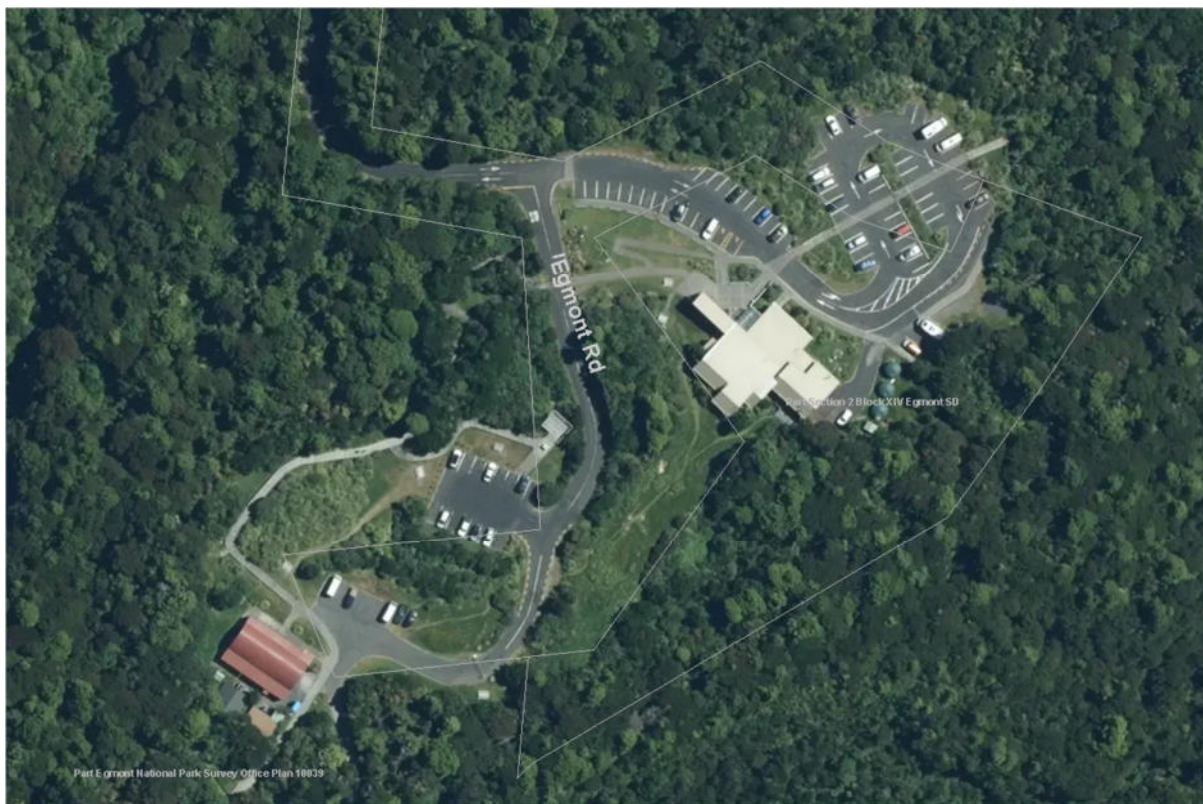


Figure 1.1: Aerial image of existing visitor centre area showing land boundaries

## 1.1 Site location and context

The site is located at the end of Egmont Road, Figure 1.2 within Te Papakura o Taranaki (Egmont National Park). The site is well elevated at approximately 940 metres above sea level, meaning that the road environment is unique and isolated. Egmont Road has a steep grade to the site (described further in Section 2.2), and due to elevation, remoteness and position within a National Park means that there are alpine conditions, steep roads and adjacent land to the site / carparks and a variety of users that frequent the site and surrounds.

Further description of these aspects are provided in subsequent sections of this report.

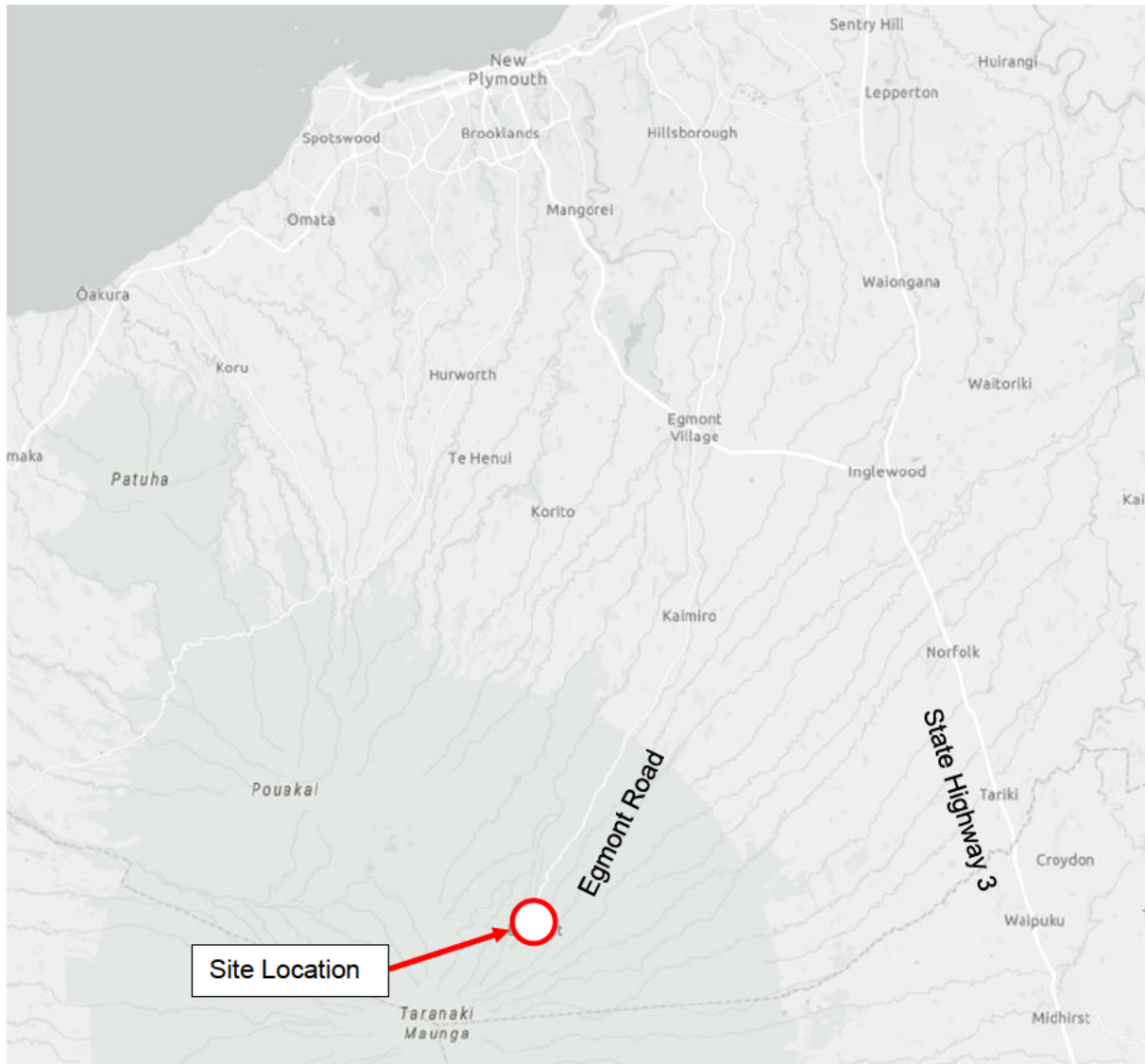


Figure 1.2: Site location

## 2 EXISTING ROAD ENVIRONMENT

The site is located at the end of Egmont Road.

Most traffic accessing the site will go through Egmont Road at Egmont Village – coming East or West from State Highway 3, or South from Egmont Road (north of Egmont Village).

### 2.1 State Highway 3

State Highway 3 between New Plymouth and Inglewood is the Highway linking New Plymouth in the north to Hawera in the south via several rural communities, including Egmont Village, Inglewood, Stratford and other townships. Egmont Road intersects State Highway 3 at the township of Egmont Village.

Adjacent to Egmont Road, State Highway 3 is reported to have 11,342 AADT, with 4 % Heavy Commercial Vehicles (HCV) (Mobile Roads - Dec 2022).

#### 2.1.1 Waka Kotahi NZTA Road Network

State Highway 3 is a Regional highway under the Waka Kotahi NZTA One Road Classification, Figure 2.1. This is the third highest category in the NZTA Classification.

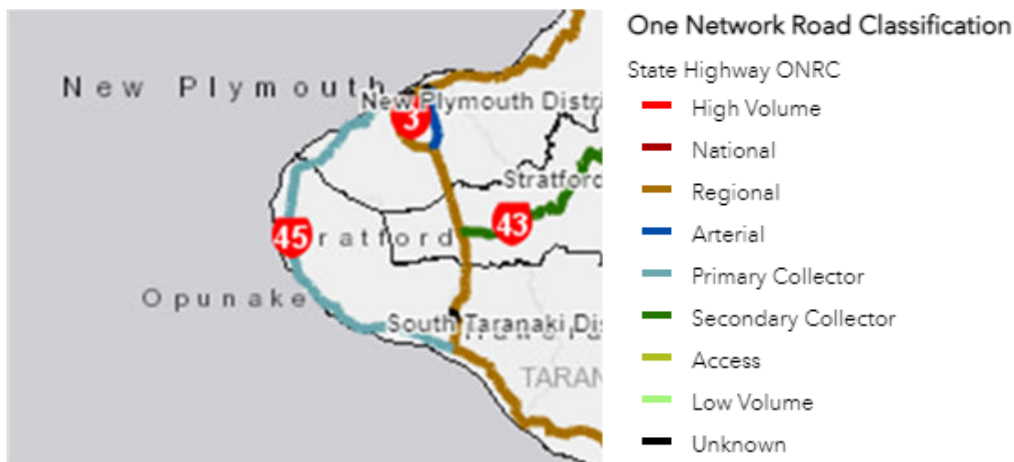


Figure 2.1: Waka Kotahi NZTA Road Network

### 2.2 Egmont Road

South of Egmont Village, Egmont Road is designated as a 'Collector Road' in the District Plan until the Park Boundary. In the RAMM (asset management) database it is classified as a 'Secondary Collector Road' in terms of the One Network Road Classification scheme. It is posted as a 100 km/hr road. The operating speed of Egmont Road from Egmont Village to the Park Boundary is estimated to be relatively high (80+ km/hr) amongst undulating and free-flowing curves and straights (with few tight curves) until the Park Boundary. Elevation climbs in elevation over the 9.2 km from Egmont Village to the Park by 260 metres (an average grade of 2.8%).

From the Park Boundary to the Site (6.6 km), the road climbs 480 metres in elevation – an average grade of 7.3%). From the Park Boundary the road has more horizontal curves of decreased radius, and combined with the significant gradient, the operating speed is much lower – approximately 50 to 60 km/hr.



There are great seasonal variations in daily traffic (a few large daily peaks sporadically through the year) in the traffic along Egmont Road. Average Traffic volumes of Egmont Road at the Park Boundary are 90 AADT (October 2021) (0% HCV) (Mobile Roads). Peak traffic is discussed within the assessment section of this report.

The road is generally a sealed, two-way, two-lane road – with approximately 6 - 7 m sealed width (generally narrowing toward the NTVC).

Egmont Road acts as a service road for farms below the Park Boundary, and also a thoroughfare for access to the NTVC and Walking Trails.

## 2.3 Crash history

A summary of the crash history of Egmont Road is provided below.

### 2.3.1 NTVC to Park Boundary

The Waka Kotahi NZTA Crash Analysis System (CAS) reports 11 crashes during the period from 2002 to 2022 over the 6.6 km road length.

Table 2.1: Crash statistics summary – NTVC to Park Boundary

Crash Type	2002-2022
Fatal	0
Serious	1
Minor	1
Property Only	9
Total	11

The crash analysis undertaken showed that 8 of the 11 crashes involved single vehicle run off road / loss of traction crashes. Of these 8, there was one minor and one serious injury crash where the drivers were injured. The three crashes that involved two vehicles were all head on collisions caused by either loss of traction (1) by one vehicle or deliberate corner cutting by one vehicle (2).

The general trend is related to vehicles losing traction (generally downhill) which can be attributed to (largely) the steep downward grade which changes the handling behaviour of most vehicles to become more prone to oversteer around curves than on more level ground.

A graphical map of the reported crashes is displayed in Figure 2.2 below.

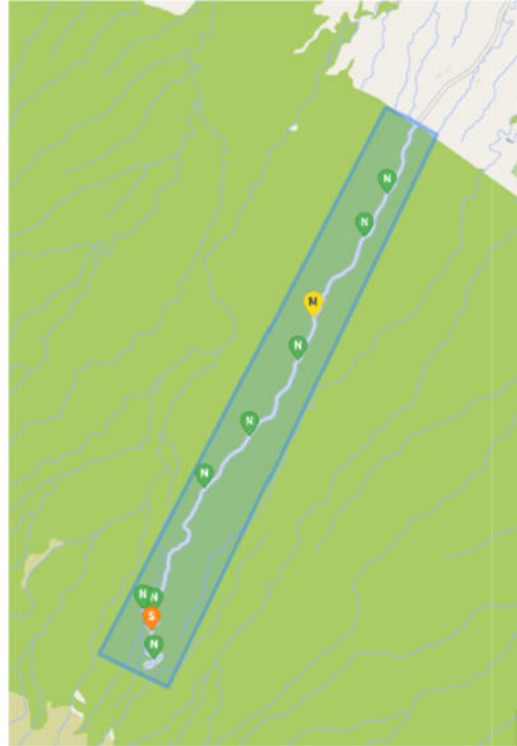


Figure 2.2: CAS – Crash History – NTVC to Park Boundary

A review of the crash history from 2002 to 2022 from the Park Boundary to Egmont Village town boundary was also undertaken.

Other than one crash that involved a car that hit a cow, all crashes were related to a single, light vehicle losing control. Some of those involved curves, some entering driveways and some on straight sections of road. A majority of the crashes were on dry roads, and most were also during the day. This trend suggests road user error, rather than any particular issue with the road. The lack of crashes involving two vehicles also suggests that the carriageway is appropriate for the volume of traffic that uses the Road.

A summary of the crashes and also map is provided in Table 2.2 and Figure 2.3.

Table 2.2: Crash statistics summary – Egmont Village to Park Boundary

Crash Type	2002-2022
Fatal	0
Serious	3
Minor	9
Property Only	15
Total	27

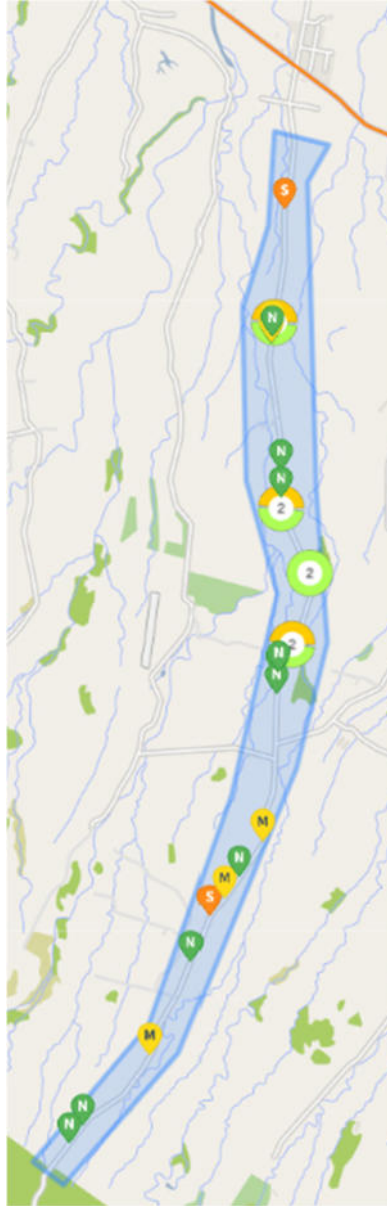


Figure 2.3: CAS – Crash History – Egmont Village to Park Boundary

## 2.4 Adjacent land / property

Property adjacent to Egmont Road below the Park Boundary is generally rural, with many dairy farms and rural residential dwellings accessed off Egmont Road. Most traffic generation on the section of road between Egmont Village and the Park Boundary will be related to agricultural operations, including low speed 40 – 60 km/hr speed restricted tractors and farm vehicles.

Beyond the Park Boundary, the road is lined with native bush and there are a number of carparks provided for trail walkers between the Park Boundary and NTVC. Due to the proximity of the native bush to the road, there is generally no ability to park on the road shoulders (without blocking either one of the live lanes). A summary of the walking trails and carparks is provided in the next section below.

## 2.5 National Park - Walking trails and carparks

Within the National Park there are a number of walking trails, and a number are accessed from Egmont Road. There are five carparks along Egmont Road, including the NTVC carpark. A summary of the existing NTVC carpark is discussed below, and also in greater detail in the assessment section of this report. The other carparks are used infrequently and do not see high numbers of traffic movements within any given hour beyond the visit by a group using multiple vehicles.

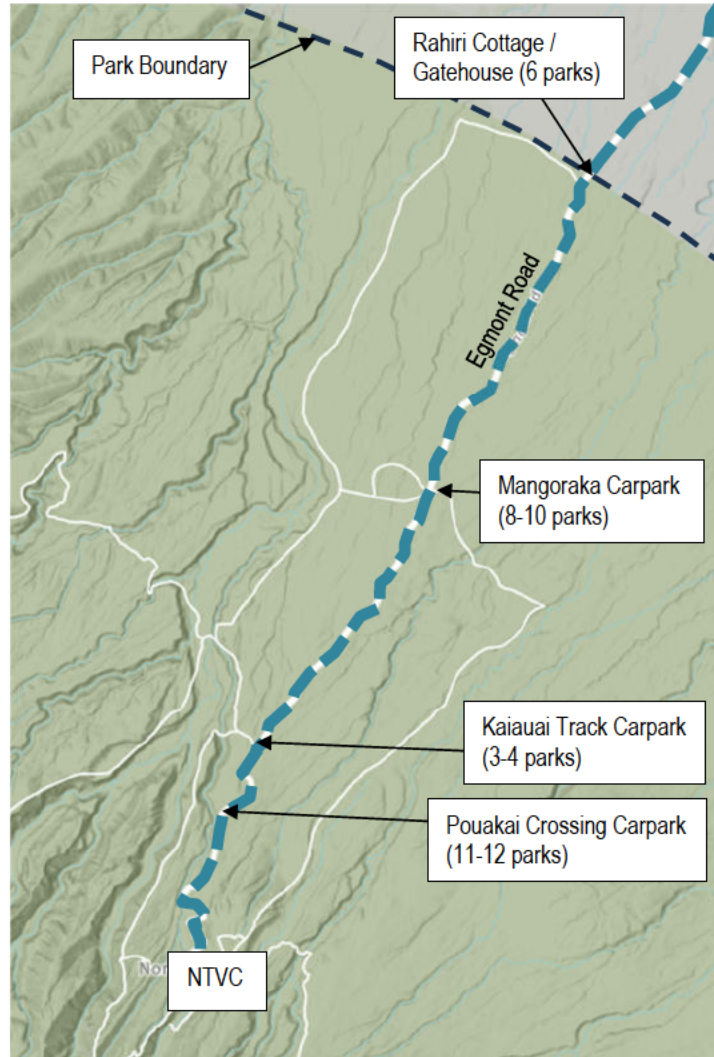


Figure 2.4: Carparks along Egmont Road (within National Park)

The existing carparks, excluding the NTVC, provide approximately 28-32 parks across the four (4) carparks shown in Figure 2.4.

## 2.6 North Taranaki Visitors Centre

The North Taranaki Visitors Centre is located at the end of Egmont Road, Figure 2.5, and provides a variety of functions to people visiting the area.



Figure 2.5: Existing NTVC including walking trails

The NTVC provides the following facilities and provides for:

- National Park Visitors
  - Day walkers
  - Overnight/multi day
  - Sightseeing or 'Snowfall' visitor
- Freedom campers

- Visitor Centre
  - Café – historically open Nov-March 8:00am-4.30pm daily April-Oct 8:30am-4:00pm
  - National Park Visitors gaining information
  - School Groups
- Staff
  - Café / visitor centre
  - Maintenance – Visitor Centre, camp house, National Park and Translator Track

A layout of the site is shown in Figure 2.6 below which indicates key aspects of the site.

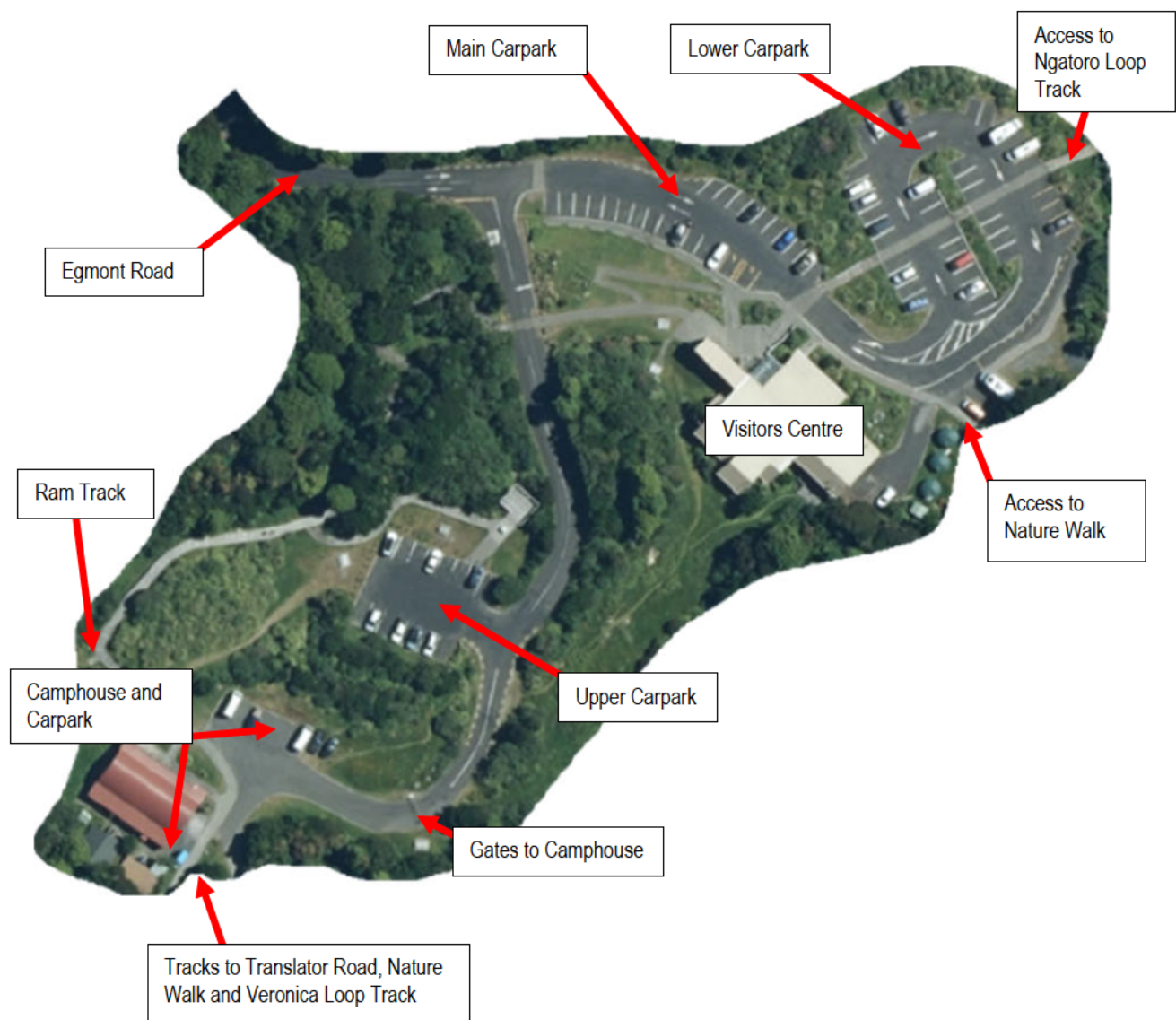


Figure 2.6: NTVC – current layout

In the main and lower carpark combined, there are 2 accessible parking spaces, 42 unrestricted car parks, 12 camper van parks, parking for buses, 4-5 staff parks and 13 short duration parks (3 hour). It would be reasonable to assume that during periods of high demand (and lack of signage) that the campervan parks would be used by other non-campervan light vehicles.

Preliminary assessment undertaken by BTW has indicated that the existing carpark layout does not provide safe manoeuvring for larger buses and coaches with increasing difficulty during periods of high usage where larger vehicles (i.e. camper vans, utes) occupy carparks.

### 2.6.1 Existing NTVC Carparks

The existing carparks at the site (including camphouse) provide for 95 carparks using the marked parks and ignoring parking on shoulders and on grass. Within the main, staff and lower carparks (including camper parks) there are 73 parks.

The carpark capacities are summarised below in Table 2.3.

Table 2.3: NTVC Existing Carpark capacity

Carpark area	Carparks	Accessible Carparks	Bus/Coach parks	Camper parks
Camphouse	7	-	-	-
Upper carpark	15	-	-	-
Main carpark	23*	2	-	-
Lower carpark	32		2	12
Staff parking	4	-	-	-
Total	81	2	2	12

\* 13 carparks provided with 3 hour time restriction.

While 9 parks are identified/IMPLIED as possible campervan parking areas through yellow linemarking, current signage visible to road users is not clear and obvious for those 9 camper parks. The 3 camper parks closer to the NTVC have a sign in front to indicate them as camper parks. Layout of the existing main and lower carpark is provided below in Figure 2.7.

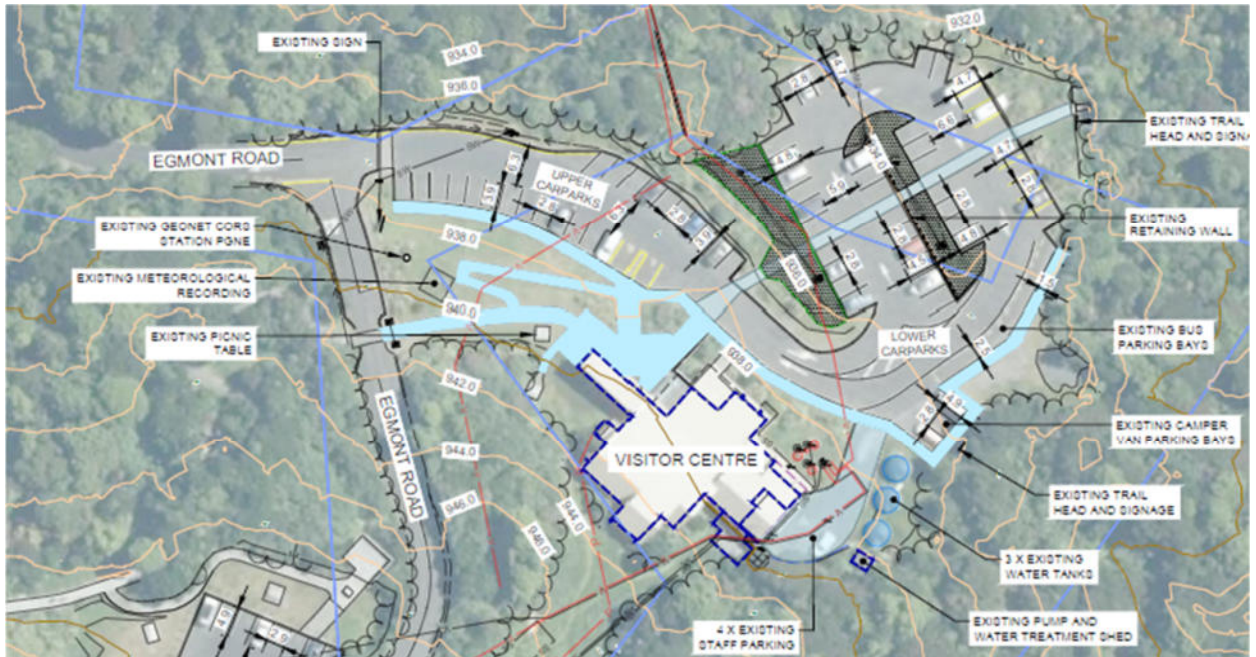


Figure 2.7: Existing main and lower carpark (extract from BTW DWG 230129-03 Sht C01)



### 3 PROJECT PROPOSAL

Te Kotahitanga o Te Atiawa (TKoTA) is planning to upgrade the North Taranaki Visitor Centre (NTVC), located within Te Papakura o Taranaki (Egmont National Park).

There is an existing NTVC in operation at the Site operated by the Department of Conservation (DOC). The description of the proposed upgrade is provided below as a summary description of the project proposal, and only describes aspects related to Traffic matters.

The proposed project scope relates to demolition of the existing building and construction of the proposed / upgraded NTVC. The new NTVC is to be cohabitated with DOC, and while many of the activities that occur in the existing building will continue in the new building, a new Manaaki area is proposed which will mean that there will be the ability to host groups in a conference and dining format, as well as providing for the option of overnighting at the venue – all of which are new compared to the existing operation.

The Application by TKoTA is for a DOC Concession to occupy and operate within the National Park. A summary relevant to traffic matters has described below.

#### 3.1 Background and site layout

BTW have been supplied the preliminary design draft drawings from Tāmaki Makaurau Office Architecture (TOA), who have been engaged for architectural design of the new visitor centre.

The preliminary design drawings indicate a main building containing visitor centre facilities, restrooms, a café, and a Whare Manaaki (hospitality area) situated in the approximate location of the current visitor centre, Figure 3.1.

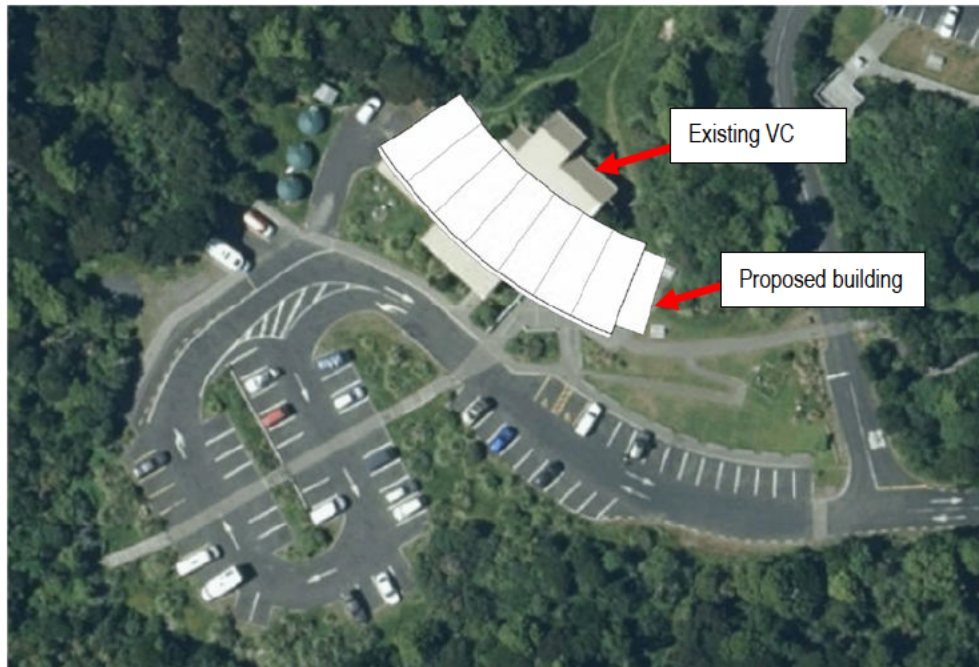


Figure 3.1: Preliminary layout plan

## 3.2 Proposed building and use

### 3.2.1 Proposed building

A layout and internal use of the building is shown below, Figure 3.2.

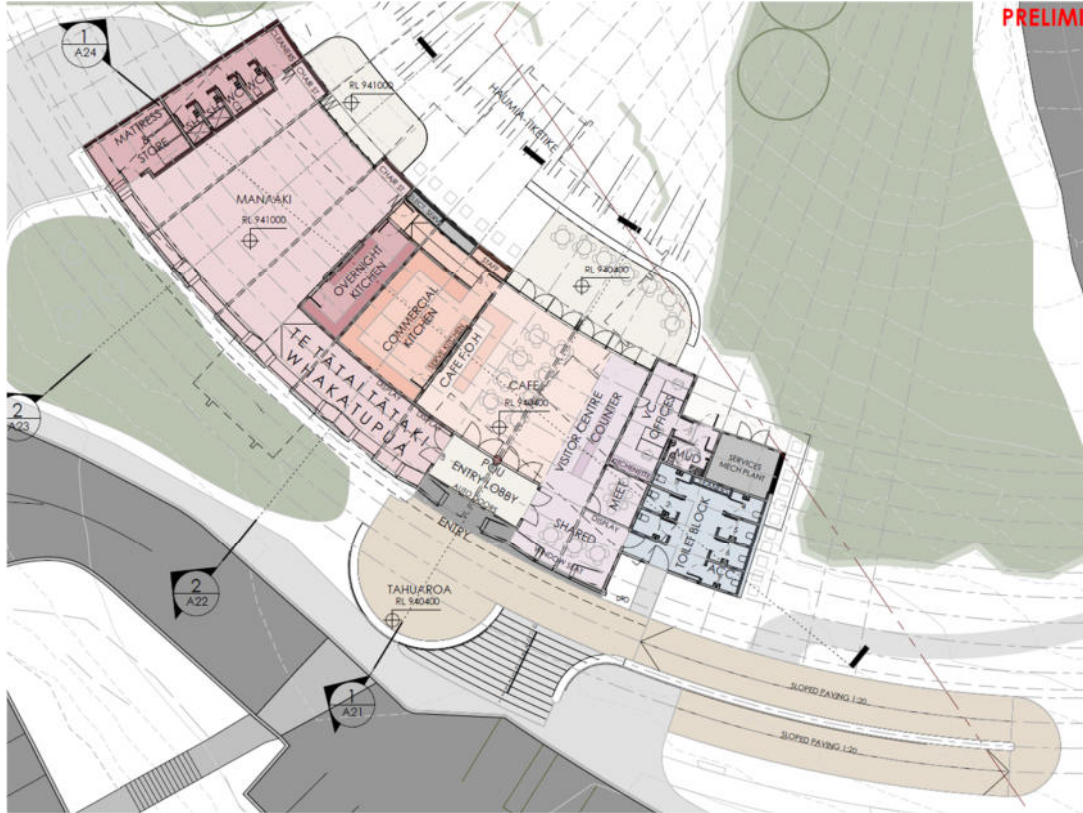


Figure 3.2: Internal layout of the proposed building

The proposed building will replace the existing structure, which currently provides a facility for Department of Conservation (DOC) staff and visitors. Co-habitation of the new building will be undertaken between DOC and TKoTA.

### 3.2.2 Proposed use

Discussions between DOC and TKoTA have been held through the design process to refine necessary activities at the building, and therefore suitable building footprint.

Below is a summary list of the building use:

- DOC - Visitor centre
  - Front of House (25 m<sup>2</sup>)
  - Staff offices (19 m<sup>2</sup>)
  - Meeting Room (9 m<sup>2</sup>)
  - staff facilities / toilet area (54 m<sup>2</sup>)
  - display area (shared with TKoTA) (25 m<sup>2</sup>)

- TKoTA
  - Commercial kitchen (BOH / FOH) and café (57 m<sup>2</sup>/ 25 m<sup>2</sup> and 50 m<sup>2</sup> respectively)
  - Manaaki (Conference / event facility) (151 m<sup>2</sup>)
  - Overnight kitchen (domestic for 10-15 people) (21 m<sup>2</sup>)
  - Mattress store and Toilet Facilities (Manaaki) (20 m<sup>2</sup> and 29 m<sup>2</sup>).

### 3.3 Manaaki

The proposed addition of the Manaaki is the largest difference and addition to the type of activities that are (or can be) currently undertaken on site.

The Manaaki allows for 3 main modes:

- Banquet / kai – 96 people
- Conference / classroom – 132 people
- Noho (overnighting) – 40 people.

An indicative layout of the 3 modes is shown below in Figure 3.3.

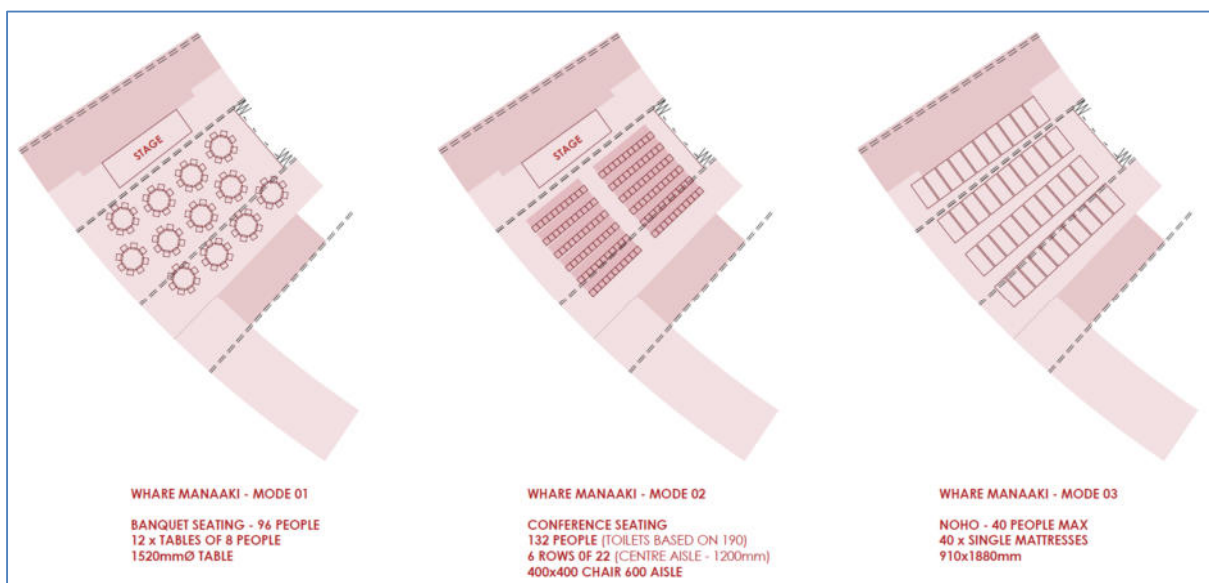


Figure 3.3: The 3 proposed modes of the Manaaki

The 3 modes represent three different demands from a transport perspective, though not necessarily independent of each other.

The frequency of use in each mode, including the total number and timing of such use, is not yet known, and assumed to be developed through the operation of the new facility. On this basis, future management (including traffic and event management) will need to be adaptive and work to core objectives agreed between key stakeholders (primarily TKoTA and DOC).

### 3.4 Proposed carpark upgrade

To support the development at the site, the existing lower carpark is proposed for an upgrade to support these key functions:

- Bus manoeuvring and parking
- Drop-off area / shuttle zone – ‘drop and go’
- Staff parking
- Maintain existing parking capacity.

These functions of the upgraded lower carpark are intended to provide a key component of mitigation for new activities at the site through use of the new Manaaki - such as conference / meetings and events. They are key as they allow management tools, such as scheduling of events, co-ordinated group drop-off and wider demand management to occur.

A plan showing the proposed carpark upgrade is shown below in Figure 3.4.

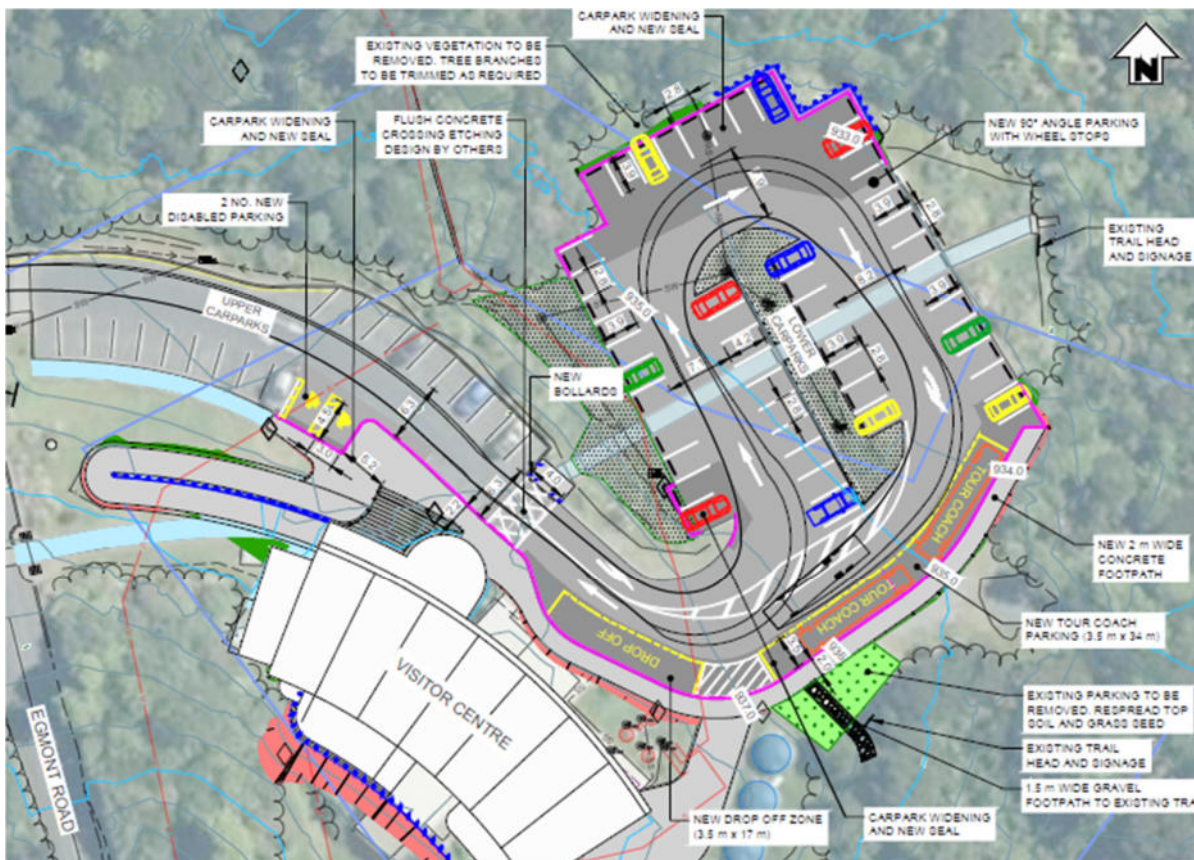


Figure 3.4: Proposed lower carpark upgrade (extract from BTW DWG 230129-03 Sht C02)

Features of the physical works upgrade include:

- Enhanced manoeuvring for larger vehicles such as buses and campervans.
- Maintain existing carpark provision (as a minimum)
- Drop off area
- Continued linkage of walking paths

#### 3.4.1 Carparks – upgraded carpark

The number of carparks following the proposed carpark upgrade are shown in Table 3.1, noting that the Camphouse and upper carparks remain with the same capacity, and are not shown in the Table below.

Table 3.1: Updated / proposed NTVC carpark capacities

Carpark area	Carparks	Accessible Carparks	Bus/Coach parks	Camper parks
Main carpark	20	2	-	-
Lower carpark	48 *	-	2 Drop off Zone added	TBC *
Staff parking	4-5	-	-	-
Total	74	2	2	TBC *

\* exact provision for camper parks yet to be determined

### 3.5 Construction – temporary Visitors Centre

During construction of the New Visitors Centre, a temporary Visitor Centre (approximately 30 m<sup>2</sup>) is to be established and located on the upper carpark.

The temporary centre will generally have 1-2 DOC staff based there (with more during peak times).

Staff parking will continue to be required during the construction activity.

## 4 TRAFFIC GENERATION

The site is currently used as a Visitor Centre (operated by DOC). The existing activities include the Café and carparking for users of the National Park (specifically Hikers/Trampers).

In recent years there has been a significant increase in visitors and therefore significant increase in traffic generation to the site and National Park (independent of any proposed NTVC development). Those existing activities are largely to remain.

The proposed building will add the Manaaki area and associated new activities.

A key consideration is the quantum and timing of both existing and proposed (new) activities. Potential effects and mitigation are discussed in the following Section 5.

### 4.1 Existing traffic generation.

There are well known anecdotal trends of traffic generation at the site and these are described in the Traffic Assessment undertaken by AMTANZ Ltd (Andy Skerrett) in 2020 for NPDC. The focus of that TIA is on peaks during the summer period. While these trends are known, traffic generation information related to the existing activities is not easily forecasted for specific peak days / weeks as they are influenced by weather conditions, and there is not a detailed history of carpark occupancy versus trip generation (meaning that a profile of parking demand is not currently known). The AMTANZ assessment is provided as Appendix B.

The anecdotal trends are described below.

- During peak times, such as in the summer, times of snowfall or holidays, the carpark capacity is insufficient to meet demand and visitors take to parking on the side of the road which is narrow and winding giving rise to congestion and safety issues.
- During such periods of excess demand, NPDC has historically operated a 'one in, one out' management policy utilising temporary traffic management at the entrance to the National Park on Egmont Road. Due to increasing demand year on year, NPDC has been reviewing needs and planning an additional carpark at the National Park boundary and utilise a shuttle service. This is further described in Section 5.1.1.
- Much of the year, the carpark operates below capacity – typically during weekday, outside times of school or public holidays and or snow fall.
- Most visitors arrive and depart the site during daylight hours, and traffic generation is therefore greatest during daylight – thus also greater in summer and less in winter. Traffic generation occurs throughout any given day.
- Campers visit the site – both as trampers and also freedom campers. There has been discussion between TKoTA and DOC on limiting or preventing freedom camping in the future, noting that it would not be practical to ban campers as many tourists (national and international) use campers to access the National Park walks and trails.
- Most traffic generation relates to light vehicles transporting people to enjoy activities described in Section 2.6.
- Daily traffic volumes vary significantly depending on the time of the season, day and weather conditions – therefore the timing and scale of traffic volumes and parking demand cannot be accurately reported or easily forecast (other than currently one in, one out), and therefore must be reviewed ongoing as the project develops and the new NTVC operation is commenced.

## 4.2 Proposed new activities and traffic generation

The upgraded NTVC will operate similar activities to the current NTVC (Section 3.2.2), and the main difference relates to the Manaaki and the three new activity types proposed for the site, being:

- Banquet / kai – 96 people
- Conference / classroom – 132 people
- Noho (overnighting) – 40 people.

Discussion on each activity is provided below.

### 4.2.1 *Banquet / kai*

When the Manaaki is used for banquet / kai, the area can accommodate seated groups of up to 96 people, supported by the commercial kitchen. Such gatherings could occur during the daytime or evening. Duration of the visit by those people will be dependent on whether the event is related to a broader conference or workshop activity, or a standalone session related to kai.

The duration and nature of traffic demand and associated carparking will be event specific, and therefore require operational planning and management of the activity to ensure that the traffic peaks created by the activity do not adversely affect the operation of the other activities at the site.

### 4.2.2 *Conference / classroom*

When the Manaaki is operated as a conference or a classroom format, there is potential for up to 132 people to participate. The duration of the visit by those people will be dependent on whether the event is related to a broader activity, such as having a formal kai before or after the conference format.

### 4.2.3 *Noho (overnighting)*

The proposed development has provision for up to 40 people to overnight in the Manaaki.

The duration of the visit by those people will be dependent on whether the event is related to a broader activity, such as having a formal kai before or after the conference format.

## 4.3 New activities – movements and parking

While individual traffic demand can be forecast for each of the new activities described above, the combination of them with other activities (or not) means that specific demand is difficult, if not impossible to accurately predict at this stage.

Some reasonable observations can be made based on trip generation and Mean Vehicle Occupancy (MVO) that will assist in the further traffic management of the site.

### 4.3.1 *Light vehicles*

Speaking to Mean Vehicle Occupancy of light vehicles in the first instance, a value of 1.8-1.9 people per vehicle for social visits is likely, with an upper maximum mean likely to be around 2.3 people per light vehicle. This equates to the traffic generation and total car numbers shown in Table 4.1 below and assumes that they are independent of each other.

**Table 4.1: Traffic generation related to light vehicle transport of Manaaki events (using MVO 1.8 - 2.3)**

Activity type	Total maximum attending	Vehicle movements (in/out)	Total vehicles / carpark peak
Banquet / Kai	96	84 - 108	42 – 54
Conference / classroom	132	118 – 148	59 – 74
Noho / overnighting	40	36 - 46	18 - 23

It is acknowledged that through significant event co-ordination the number of people per light vehicle (MVO) could be higher, and that the total movements and parking demand could be therefore reduced. That said, based on the typical values provided in Table 4.1, there is potential to create saturation of the main and lower carparks with the new activities – and that is before existing activities are added into the equation.

#### **4.3.2 Shuttles and buses**

Based on a co-ordinated event, buses and shuttles could be utilised to transport visitors. If maximum, or near maximum capacity shuttles and buses are utilised, the corresponding traffic generation and parking appears as shown in Table 4.2.

**Table 4.2: Traffic generation related to shuttle/bus transport of Manaaki events**

Activity type	Total maximum attending	Shuttle movements (9-10 people/vehicle excl driver) (in/out)	Shuttles parked (worst case)	Bus movements (48 people/vehicle excl driver)	Buses parked (48 seater)
Banquet / Kai	96	20 - 22	10-11	4	2
Conference / classroom	132	28 - 30	14-15	6	3
Noho / overnighting	40	8 - 10	4-5	2	1

The information provided above suggests that larger events nominally beyond 100 people will require a combination of buses and shuttles (if parked), a 'drop and go' service or a combination thereof.



## 5 TRAFFIC ASSESSMENT

A site visit was undertaken on 18<sup>th</sup> April 2023. The visit included Egmont Road, the NTVC, carparks and surrounds.

### 5.1 Background

The existing site has a number of geometric, topographic and environmental constraints and also experiences high volume events that exceed the capacity of the existing transport network.

From discussions with the DOC team, the desire is to see that the proposed development and new activities result in traffic operation that is 'no worse' than the current situation. To achieve this suitable mitigation will be required – and comprise of a combination of mitigation – both physical works/improvements and layout onsite, plus traffic management (mainly in the form of demand management).

Further, it is acknowledged by stakeholders that the current site has been the focus of potential improvements of traffic management during peak times. Historically, NPDC has administered a 'one in, one out' traffic management approach during peak times.

Recent plans by NPDC have also looked to add a carpark at the boundary of the National Park, done in co-ordination with the proposed Taranaki Crossing development.

The development of the National Park as an enhanced attraction and destination has been occurring for the last few years. For example, NPDC installed a new carpark at the top of Mangorei Road in 2018 to facilitate the parking and access of walkers to the Pouakai Track (which in turn links with tracks to the NTVC). The Mangorei Road carpark provides 67 carparks and 4 coach parks, and alleviated parking issues on the sides of Mangorei Road.

The planning of the proposed NPDC Egmont Road carpark (just outside the National Park Boundary) has progressed over recent times. NPDC has purchased land, and also a Traffic Assessment undertaken by AMTANZ Ltd (Andy Skerrett) in 2020 to consider the traffic effects of the proposed carpark. Key points from the assessment are provided below.

This information is provided as context to the current proposed NTVC development, and not to suggest that the NTVC development is contingent on the establishment of the Egmont Road carpark.

#### 5.1.1 *AMTANZ assessment key points and NPDC Egmont Road management*

The key points from the NPDC proposal, as described in the AMTANZ 2020 report:

- NTVC and the National Park is continuing to grow in its popularity.
- During peak times in the summer the carpark capacity is insufficient to meet demand and creates safety and efficiency issues.
- The proposal from NPDC is to develop a car park at the entrance to the national park and operate a shuttle (as full vehicles) to the visitors' centre during peak times.
- Traffic speed measurements have been undertaken and helps support the district wide speed limit review results which indicate the speed limit should be lowered on Egmont Rd to 80km/hr and 60 km/hr within the National Park.
- The proposed Egmont Road Carpark is to provide for up to 100 cars, campervans and buses.

The addition of the NPDC Egmont Road carpark would assist in the management of traffic during peak times, and also likely provide a future option for the upgraded NTVC to consider the carpark as a location to park vehicles and co-ordinate people and traffic to specific events at the NTVC.

The provision of any future Egmont carpark by NPDC is not assumed for the purposes of this assessment. Should the existing activities and associated traffic generation within the National Park continue at current levels, or continue to increase as they have over recent years, then ongoing traffic management will be required by NPDC / DOC to ensure the maximum utilisation of the facilities and National Park during peak period times (regardless of the proposed upgrade of the NTVC).

The proposed NTVC upgrade introduces the potential for additional traffic generation peaks (mainly due to the addition of the Manaaki and associated activities).

Ongoing demand and traffic management of Egmont Road and NTVC carparks will be required by stakeholders to ensure the efficient utilisation of the facilities (including the National Park trails).

## 5.2 Construction traffic considerations

The site is located at the end of Egmont Road. All Road Users that visit the site have made a deliberate decision to be there (generally for a specific activity in mind).

Given the challenging construction environment – elevated on the Mountain (Alpine with steep topography, surrounded by Native Bush with little available adjacent land) it would appear that some part of the existing carparks will be required as a laydown / construction area during the upgrade of the carpark and NTVC – meaning restricted carparking capacity for the construction duration.

Therefore, a discussion with stakeholders will be required to review the best approach to manage the construction site extents, access of existing users to the site (including National Park), and the construction duration. Following a discussion and development of a plan, communication to potential and existing users (including interest groups and the general public) will be required to explain the project and the effects on the availability and access to the site.

This communication will likely require (amongst a list of possible needs) public communication, information sharing and road signage on Egmont Road and the Site.

## 5.3 Alpine environment

The site is located at approximately 940 metres above Sea Level. This is well above the snow/freezing line and the upper sections of Egmont Road and NTVC experience several snow fall events per annum. While the proposed development of the NTVC does not change this, the consideration of snow and ice related to carpark geometry and layout needs to be considered. Specifically, provision for graders to be able to mechanically remove snow and ice periodically from the road/carpark surface, and also provide non-slip treatments for pedestrians in any high risk areas should be allowed for in the later phases of the design process.

It is recommended that consultation is undertaken with the roading and carpark maintenance contractor during the design process to ensure the proposed upgrades align with operation and maintenance requirements of the alpine carpark.

## 5.4 New Activities and enhanced carpark layout

The updated carpark layout (with the addition of kerb stops and some minor amendments) allows the increased aisle widths of the lower carpark, meaning that Coaches and larger vehicles are able to navigate the carpark with more certainty.

The geometry of the proposed lower carpark, in addition to the drop off area, allows for light vehicles to informally turnaround into the drop off area without navigating the entire lower carpark.

Based on the site constraints, the upgrade of the carpark results in nominally the same number of carparks, Table 5.1, with enhanced capability for shuttles and buses to drop off / pick up people at the site.

**Table 5.1: Comparison of existing and proposed NTVC carpark capacities**

Carpark area	Carparks			Accessible Carparks			Bus/Coach parks			Camper parks		
	Existing	Proposed	Change	Existing	Proposed	Change	Existing	Proposed	Change	Existing	Proposed	Change
Camphouse	7	7	-	-	-	-	-	-	-	-	-	-
Upper carpark	15	15	-	-	-	-	-	-	-	-	-	-
Main carpark	23 <sup>1</sup>	20	-3	2	2	-	-	-	-	-		
Lower carpark	32	48 <sup>2</sup>	+4 <sup>2</sup>	-	-	-	2	2	-	12	TBC <sup>2</sup>	TBC <sup>2</sup>
	Drop off Zone added											
Staff parking	4	4-5	-	-	-	-	-	-	-	-		
Total	81	74		2	2	-	2	2	-	12	TBC <sup>2</sup>	TBC <sup>2</sup>
<b>Total summary</b>	<b>95</b>	<b>96</b>	<b>+1</b>	<b>including Accessible and Campers</b>			<b>Drop off Zone added</b>					

Notes

<sup>1</sup> 13 carparks provided with 3 hour time restriction.

<sup>2</sup> Exact provision for camper parks yet to be determined

While at first glance the addition of one additional carpark does not seem significant, the reconfiguration of the lower carpark to allow the addition of a new drop-off area (including ability for light vehicles to be able to u-turn adjacent to the drop-off area) and enhanced large vehicle manoeuvring (including buses, campers and service vehicles) is notable.

The new configuration provides for the ability to re-define the provision and parking for campervans into more accommodating parks, and provide greater certainty to large coaches to be able to turn around, and drop-off groups – noting that the proposed NTVC will see an increased frequency organised groups and therefore coach and shuttle visits.

It is expected that future traffic management of the NTVC (related to existing and proposed activities) will utilise new options – potentially:

- an offsite carpark (such as what NPDC is contemplating on Egmont Road at the National Park boundary)
- Increased use of shuttle services (commercial/fee paying or complimentary/associated to NTVC events)
- Driverless technology – driverless cars and people movers (shuttles / buses)
- Special / new Public transport routes

The possibilities listed above are all facilitated by the increased onsite manoeuvring that the updated lower carpark provides for all vehicle types, and also the creation of the purpose-built drop-off / pickup area. These attributes of the updated lower carpark are key aspects of the future traffic performance and visitor experience into the future.

#### **5.4.1 Mitigation for existing activities**

Existing traffic peaks are created by activities that are undertaken in the National Park at present, and the management of that traffic is currently undertaken by DOC and NPDC. Ongoing management of the traffic generated by current activities which will continue into the future will be required.

Collaboration and co-ordination between DOC, NPDC and TKoTA is required to establish the new NTVC, and the addition of the new activities that the new NTVC will allow.

#### **5.4.2 Mitigation for new activities**

The scale of traffic generation related to the new activities of the Manaaki (Section □) means that there is potential for the new activities to fully occupy the available carparks. This means that management of larger events at the Manaaki will be required, and include mitigation as follows:

- Develop and maintain an operational traffic management plan (OTMP), which will include the aspects below.
- Development and refinement of objectives and strategies over time between key stakeholders to allow adaptive management for all activities.
- Manage peak demand – carpark capacity
  - Scheduling co-ordinated events in known periods of low demand – there is generally available carparking capacity most times of the year. Depending on how large the event is, and other activities within the National Park, management (at times) may need to consider a blend of management including some coaches and private transport (rather than just one or the other).
  - Utilisation of shuttles and coaches for larger events
- Record keeping
  - Maintain a record of scheduled events including duration, size and transport type
  - Record visitor numbers to NTVC with door counters or similar
  - Review parking utilisation – develop and maintain a periodic carpark record / survey (possibly surveyed or monitored with technology such as a carpark management system or time-lapse cameras).

- Allocation of parking
  - Establish location, size and allowable stay for different vehicle types and traffic demand
  - Clearly signposted / communicated carpark allocations to users
- Strategy of camper management – allowing them to site (and allocated parking), and also if freedom/overnight parking is allowed (and if so, any seasonal or timing restrictions)
- Review – periodic performance review of traffic management each year – including liaison with stakeholders DOC and NPDC. The periodic review will include the information listed above.

There will be other considerations not listed above, that will emerge through the development and use of the OTMP. This will be captured in the OTMP and reviewed/amended into the future, along with all other considerations in the OTMP.

## 6 CONCLUSION AND RECOMMENDATIONS

Based on the assessment completed, the following recommendations and conclusions are provided.

### 6.1 Recommendations

There are three main recommendations, being:

- Construction management – develop and operate the development traffic under a construction traffic management plan (CTMP)
- Undertake physical works / upgrade improvements onsite as described in the design drawings
- Develop, maintain and operate under an Operational Traffic Management Plan (OTMP).

These are further described below.

#### 6.1.1 Construction management

Construction of the NTVC upgrade will take several months to complete and will require construction room and suitable laydown. It is recommended that stakeholders agree on the best way to manage the construction activity, including the construction footprint and how visitors will be managed during the construction period.

It would seem that notification of possible visitors is a must, and the key consideration is the possible trade-off of footprint size versus effect on construction timeframes. It would appear inevitable that a period of restricted access will be required, and that this will need to be communicated clearly to users – including possibly public notifications, signage on Egmont Road and the like.

Planning, management and operation of construction traffic shall be documented within a Construction Traffic Management Plan.

#### 6.1.2 Undertake physical works / upgrade improvements onsite

It is recommended that the proposed physical works upgrades are undertaken on the lower carpark, generally in accordance with the BTW DWG 230129-03 Sheets C01-C05). The improvements are required to allow for carparking and drop off/pickup at the site – allowing for future operational options such as co-ordinated group transport.

#### 6.1.3 Ongoing operational traffic – Operational Traffic Management Plan

It is recommended that the facility prepares and operates under an Operational Traffic Management Plan. This plan should address traffic effects due to the operational aspects of the facility, including day-to-day operations, maintenance and any other tasks related to the operational phase of the project.

In addition to Section 5.4.2, objectives / principles would be:

- To operate the NTVC in harmony with all activities at the site (current and proposed), and that current peak traffic / carpark demand is not increased. This will be undertaken largely with demand management.

- Mitigation of traffic during peak traffic demand is undertaken. Mitigation in the form of scheduling events at the NTVC during times where there are not expected to clash with predicted peaks (fill between the peaks, and not add to them).

The operational traffic management plan should include the following considerations:

- Discussion / agreement between stakeholders on the management of carparking at the site, specifically including:
  - Allowance for campervans – allocated carpark areas, freedom camping
  - Management of buses including booking / scheduling – consideration of a booking system for larger vehicles. The purpose of a scheduling system would be to ensure that the parks were available for a planned event which is reliant on buses. With increased frequency of co-ordinated events (and therefore coaches) and the limited available bus parks at the site, the reliance on the 2 bus parks will be critical – noting many larger private campers are Heavy Vehicles (Bus / truck) and could occupy one or more bus parks if not managed accordingly.
  - When buses / shuttles are required (event size, timing) – event size and traffic thresholds
- Road safety, including minimising effects on existing activities
- Operational requirements including hours of operation
- Contingency planning
- Continuous improvement – ongoing review of activities including receiving feedback.

The plan should be prepared by a suitably experienced and qualified transport engineer in consultation with TKoTA and DOC.

## 6.2 Conclusions

The key consideration at the site relates to the addition of the proposed group activities to the existing activities, and the effect that this has on the existing activities and traffic / parking demand.

At many times through the year the carpark is underutilised, and the addition of the drop off area and keeping the bus parking means that the 'shoulders' of the traffic peak, when the carpark may be moderately busy, allows for the scheduling and operation of group events / activities at the site.

The addition of the drop off area also provides for the future – including being utilised with the proposed NPDC Egmont Road Carpark (National Park Boundary) and also future driverless car technology.

Overall, a key consideration is that this site is unique, and only a certain amount of traffic demand is both known and also possibly predictable (due to the range of activities within the National Park, and the factors that influence their scale and timing). Therefore, the use of an Operational Traffic Management Plan is required and must be adaptive to accommodate learnings from stakeholders, and there must be a clear set of objectives agreed and reviewed by stakeholders into the future – the management of campervans being one example that can significantly affect the operation of the facility.

With the mitigation undertaken as listed in the Recommendations above, the effects on the Road Network will not be more than minor, noting that the Operational Traffic Management Plan is adaptive. This ensures that any adjustments made in the operation or required management will be made in an ongoing fashion.

Following the recommendations within the report, the proposed activity is mitigated and, therefore, there is not an adverse effect on the safety and efficiency of the network.



## **7 DISCLAIMER AND LIMITATIONS**

### **7.1 Distribution**

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### **7.2 Limitations**

The recommendations made within this report have been concluded based on known information, including information supplied by RCP. This assessment has been undertaken for the purposes of a Resource Consent.

## APPENDIX A      CRASH HISTORY



Case No	Case Name	Case Type	Distance	Location	Latitude	Longitude	Lat Error	Long Error	ID	Date	Day of week	Time	Event	Case Facts	Surface	Weather	Direction	Count	Severity	Causality	Count	Severity	Case No
9812	EGMONT ROAD	3000S	149770	PETERS ROAD	-39.212193	174.127888	-0.000000	0.000000	149770	2019/05/24	Tue	09:52:42	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
9813	EGMONT ROAD	3000S	149770	PETERS ROAD	-39.212193	174.127888	-0.000000	0.000000	149770	2019/05/24	Tue	09:52:42	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
13893	EGMONT ROAD	1200N	149781	EGMONT ROAD	-39.21864	174.13524	-0.000000	0.000000	149781	2019/05/27	Tue	09:29:03	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	012
17028	EGMONT ROAD	1200N	149824	PETERS ROAD	-39.205051	174.13006	-0.000000	0.000000	149824	2019/05/27	Tue	09:29:03	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
13895	EGMONT ROAD	1200N	149800	PETERS ROAD	-39.205051	174.13006	-0.000000	0.000000	149800	2019/05/27	Tue	09:29:03	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
10055	EGMONT ROAD	670S	149812	PETERS ROAD	-39.205051	174.13006	-0.000000	0.000000	149812	2019/05/27	Tue	09:29:03	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
10130	EGMONT ROAD	270S	149876	PETERS ROAD	-39.14997	174.14388	-0.000000	0.000000	149876	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
3330N	EGMONT ROAD	1800S	149870	LEPPER ROAD UPPER	-39.15499	174.14388	-0.000000	0.000000	149870	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
1845	EGMONT ROAD	1800S	149870	LEPPER ROAD UPPER	-39.15499	174.14388	-0.000000	0.000000	149870	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
1800S	EGMONT ROAD	1800S	149870	LEPPER ROAD UPPER	-39.15499	174.14388	-0.000000	0.000000	149870	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
1800S	EGMONT ROAD	1800S	149870	LEPPER ROAD UPPER	-39.15499	174.14388	-0.000000	0.000000	149870	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
2000S	EGMONT ROAD	2000S	149870	LEPPER ROAD UPPER	-39.15499	174.14388	-0.000000	0.000000	149870	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
2000S	EGMONT ROAD	2000S	149870	LEPPER ROAD UPPER	-39.15499	174.14388	-0.000000	0.000000	149870	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
513N	EGMONT ROAD	513N	149884	LEPPER ROAD UPPER	-39.17856	174.14426	-0.000000	0.000000	149884	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
513N	EGMONT ROAD	513N	149884	LEPPER ROAD UPPER	-39.17856	174.14426	-0.000000	0.000000	149884	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
1940N	EGMONT ROAD	3600S	149887	LEPPER ROAD UPPER	-39.17856	174.14426	-0.000000	0.000000	149887	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
3600S	EGMONT ROAD	3600S	149887	LEPPER ROAD UPPER	-39.17856	174.14426	-0.000000	0.000000	149887	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
2000N	EGMONT ROAD	2000N	149887	LEPPER ROAD UPPER	-39.17856	174.14426	-0.000000	0.000000	149887	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
2200N	EGMONT ROAD	2200N	149888	LEPPER ROAD UPPER	-39.17856	174.14426	-0.000000	0.000000	149888	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
800S	EGMONT ROAD	800S	149888	LEPPER ROAD UPPER	-39.17856	174.14426	-0.000000	0.000000	149888	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
12270	EGMONT ROAD	800S	149888	LEPPER ROAD UPPER	-39.17856	174.14426	-0.000000	0.000000	149888	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
10852	EGMONT ROAD	800S	149888	LEPPER ROAD UPPER	-39.17856	174.14426	-0.000000	0.000000	149888	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
29528	EGMONT ROAD	800S	149888	LEPPER ROAD UPPER	-39.17856	174.14426	-0.000000	0.000000	149888	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004
7260	EGMONT ROAD	4000S	149903	JUNCTION ROAD	-39.18074	174.1488	-0.000000	0.000000	149903	2019/05/28	Tue	07:02:48	Ca / Wagon 1 NDB on EGMONT ROAD	Ca / Wagon 1 NDB on EGMONT ROAD	Wet	Drizzle	N	0	0	0	0	0	004

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# APPENDIX B      AMTANZ 2020 REPORT – EGMONT ROAD TIA

# EGMONT RD CAR PARK



27 July 2020

Traffic Impact Assessment

Prepared for New Plymouth District Council by  
AMTANZ Ltd

## Revision History

Revision N°	Prepared By	Description	Date
A		Initial draft	23/4/20
B		Additional traffic control measures added	6/5/20
C		Supplementary traffic speed data added	6/8/20

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## Document Acceptance

Action	Name	Signed	Date
Prepared by			7 <sup>th</sup> August 2020
on behalf of	<b>AMTANZ Ltd</b>		

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## EXECUTIVE SUMMARY

The North Egmont Visitor Centre (NEVC) is becoming an increasingly popular destination for tourists and locals alike to access Egmont National Park and Mt Taranaki. The visitors centre is situated at the end of Egmont Rd and provides access to many walking tracks as well as having an information centre and café. It's appeal is across the board from those just wishing to partake of the views of the mountain and north Taranaki to those undertaking day and multi day tramps on the mountain.

There are a number of car parks along the road within the National Park providing access to various walks but the majority 94 being at the visitors centre. During peak times in the summer the carpark capacity is insufficient to meet demand and visitors take to parking on the side of the road which is narrow and winding giving rise to congestion and safety issues.

In recent time DoC and New Plymouth District Council have undertake to implement traffic control at the entrance to the park during peak times so once the parks are full vehicles are only allowed to enter as vehicles exit. Leading to delays and a diminished visitor experience.

The proposal is to construct a large car park at the entrance to the park and shuttle visitors to the NEVC during peak periods. Exact details of how this will be managed have yet to be determined.

The entrance to the car park has been located in the most suitable location available and provides ample visibility to the north. To the south visibility is restricted by a vertical curve and tunnel like effect of the trees adjacent to the road within the National Park.

Traffic speed measurements have been undertaken and helps support the district wide speed limit review results which indicate the speed limit should be lowered on Egmont Rd to 80kph and 60kph within the National Park. The reduced speed limits would lower speed to point where the difference between the required sight distance and the available sight distance is small enough that the risk can be mitigated by the installation of appropriate signage warning north bound vehicles of the car park entrance.

Whilst there is not a significant crash record on the road there have been three crashes in the past 5 years on the winding and steep section road below the visitors centre, caused by drivers crossing the centre line. The lowering of the speed limit and removal of up to 200 vehicles per day during peak times is likely to reduce the severity and likely hood of crashes occurring.

We therefore believe the effects of the car park on the local roading network will be less than minor and are likely to be positive overall.

## 1. INTRODUCTION.

The North Egmont Visitors Centre (NEVC) is located at the road end of Egmont Rd in the Egmont National Park. The centre is one of three locations in the National Park where visitors can access deep into the park by road. The other two locations being Dawson Falls Visitor Centre and the Manganui Ski Field.

The visitor centre has a café and information about the mountain and the fauna and flora within the national park. It is also the access to numerous walks including the summit track and access to the television translator tower, other communications equipment and the mountain club chalet.

With the increase in tourism the car parking at the visitors centre is now regularly exceeded with people parking in non-designated areas and at the side the road which is narrow, restricting access and is a potential safety issue.

In recent times when the car parks are full traffic is stopped at the entrance to the National Park and only allowed to enter as vehicles exit the park, thus controlling the parking demand.

The proposal is construct a car park at the entry to the National Park and shuttle people to the visitors centre during peak periods. This traffic impact assessment looks at the effects on the local roading network of the proposed car park.

## 2. EXISTING ENVIRONMENT

Egmont Road runs roughly north east to south west and is sealed with a 3m lane in each direction, on the approach to the national park there are no edge lines and unsealed shoulders. Within the national park the lanes typically have edge lines with little or no shoulders. There are a number of car parks along the route through the National Park as shown in the following aerial photograph:

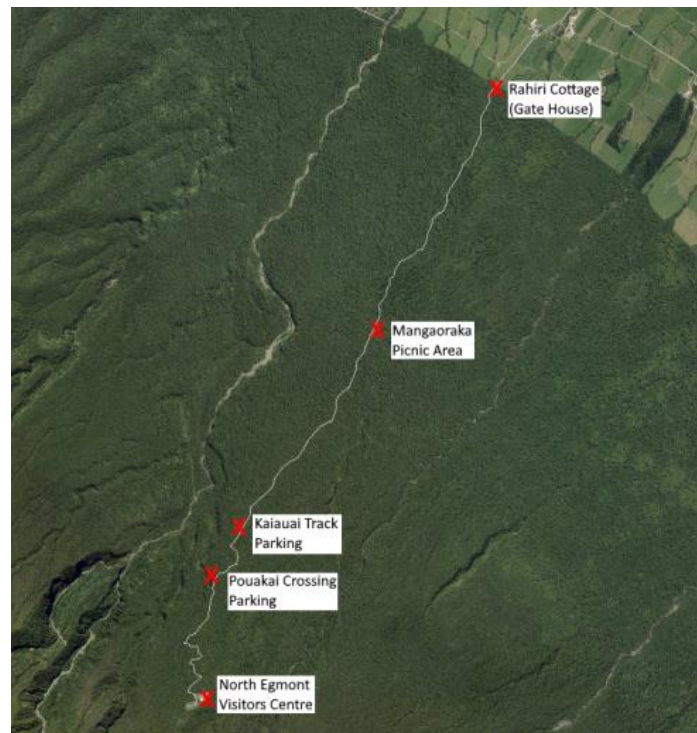


FIGURE 1 - EGMONT RD'S ROUTE TO THE VISTORS CENTRE

The Rahiri Cottage (Gate house) is situated as you enter the national park. The car park is used by trampers accessing the Waiwhakaiho Track and has room for approximately 6 cars. This is also where gates are used to control access to the park particularly following heavy snow falls.



**FIGURE 2 - RAHIRI COTTAGE PARKING**

The following photograph shows the location of the gates.



**FIGURE 3 - IMAGE OF THE ROAD GATES**

The second parking area is at the Mangoraka picnic area some 2.4km into the park here there are picnic tables and access to the Ngatoro and Waiwhakaiho tracks. There is space for approximately 8 cars to park as shown in the following photograph:



**FIGURE 4 - MANGORAKA AREA PARKING**

A further 2km into the park there is limited parking for 3-4 vehicles to access the Kaiiauai Track.



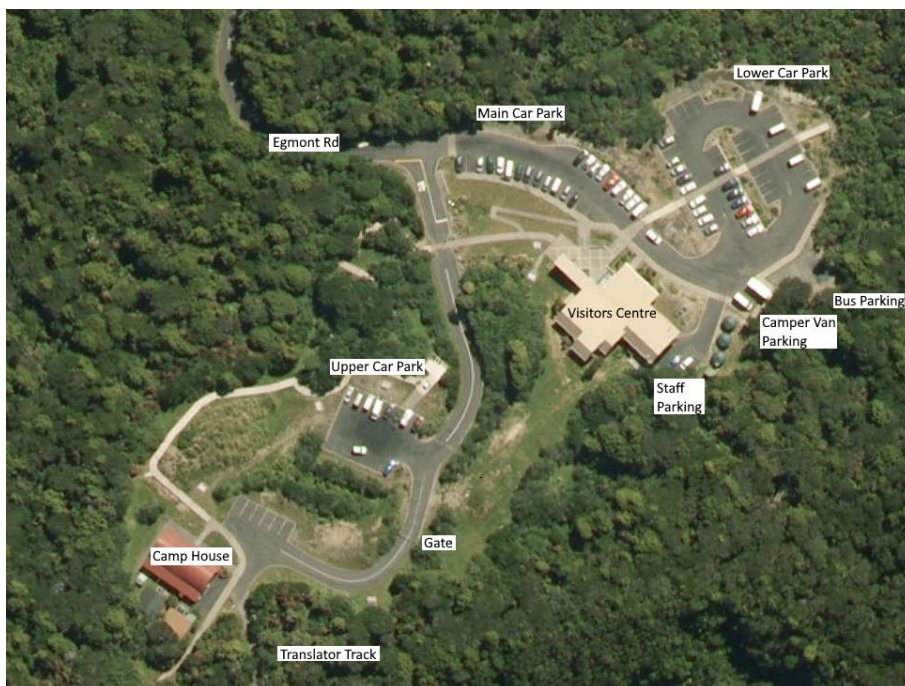
**FIGURE 5 - KAIIAUAI PARKING**

At this point the gradient of the road increases and the alignment becomes more tortuous. A further 600m up the road there is the car park for the Pouaki Crossing track which has recently been extended and can now cater for 11 or 12 cars.



**FIGURE 6 - POUAKAI CROSSING PARKING**

The road continues for a further 1.4 km to reach the NEVC where there are a number of carparks as shown in the following photograph:



**FIGURE 7 - NORTH EGMONT VISITORS CENTRE**

Visitors to the centre are encouraged straight into the main and lower car parking areas. Where there are 2 accessible parking spaces, 43 unrestricted car parks, 12camper van parks, parking for four buses, staff parking for 5 vehicles and 13 short duration (3 hour) parks although it is unclear if these are policed in any way.

The Upper Car Park tends to be used by people familiar to the site as it is not sign posted on the approach to the visitors centre and has the provision of 15 unrestricted parks.



**FIGURE 8 - APPROACH THE VISITORS CENTRE**

Access beyond the Upper Car Park to the Camp House and the translator track is controlled by a locked gate as shown below:



**FIGURE 9 - UPPER CAR PARK AND GATE**

A summary of the available parking is shown in the following table:

		Parking type					
		Unrestricted	Accessible	Short stay	Camper vans	Busses	
NEVC	Main Car park	10	2	13	-	-	94
	Lower Car park	33	-	-	12	4	
	Upper Car park	15	-	-	-	-	
	Staff parking	5	-	-	-	-	
	Sub- total	63	2	22	3	4	
Pouakai crossing	Car park	11	-	-	-	-	124
Kawai Track	Car park	5	-	-	-	-	
Mangoraka Picnic Area	Car park	8	-	-	-	-	
Rahiri Cottage	Car park	6	-	-	-	-	
<b>Total</b>		<b>93</b>	<b>2</b>	<b>22</b>	<b>3</b>	<b>4</b>	

### 3. THE PROPOSAL.

The proposal is to develop a car park at the entrance to the national park and operate a shuttle to the visitors centre during peak times. The following image shows a concept plan of the proposed car park.



FIGURE 10 - PROPOSED CAR PARK

The current proposal is to provide parking for up to one hundred cars, camper vans and buses with associated picnic area, public toilets and shelter. This will essentially double the available parking for this access to the National Park.

#### 4. DESCRIPTION OF THE SURROUNDING ENVIRONMENT.

Egmont Rd is classified as a secondary collector due to its link to the National Park. As described earlier it consists of two 3m sealed lanes, 0.75m unsealed shoulders falling into longitudinal table drains. The existing ground in the vicinity of the proposed car park is some 2m above the road level with a 1/4:1 steep cutting transitioning between the two, as shown in the following photograph taken from the approximate location of the car park entrance:



FIGURE 11 - VIEW OF EGMONT RD LOOKING NORTH EAST

It can also be seen in the photograph that there is a short vertical crest curve some 50m to the north east of the access and whilst the road surface is obscured vehicles would remain visible at all times. The visibility from the access is restricted by the horizontal curve some 390m to the north east.



The gradient of the road in vicinity of the car park entrance is 6%, some 50m to the south west of the car park entrance there is another short vertical crest curve and the road levels off to approximately 3%. This curves limits the visibility to the south west to 150m as shown in the following photograph:



**FIGURE 12 - VIEW TO SOUTH WEST FROM ACCESS**

As can be seen the overhanging tree canopy causes a tunnel effect that reduces the visibility of approaching cars. The opposite effect is true with cars emerging from park braking through into a brightly lit landscape as shown in the following photograph:



**FIGURE 13 - VIEW FROM NATIONAL PARK TO CAR PARK**

## Existing Traffic Volumes

DoC undertake monitoring of the vehicle numbers entering the park through the use of a simple single tube axle count at Rahiri Cottage, the results of which are shown below:

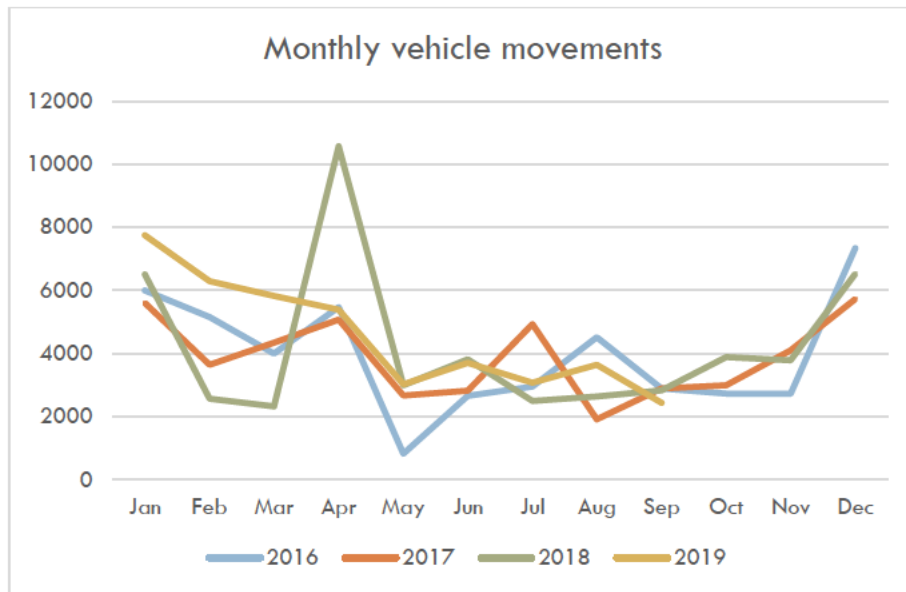


FIGURE 14 - DOC SURVEILLANCE COUNTS

From this graph it can be seen there is peak in activity around Christmas through to Easter with a quieter period through the winter, as one would expect. The 2018 data appears to be a little spurious with the volumes in February and March being lower than expected and April being particularly high. If these results are ignored then it can be seen there is growth in the number of vehicles entering the park during the summer period particularly around December and January.

If we consider the peak period growth during January we see the following:

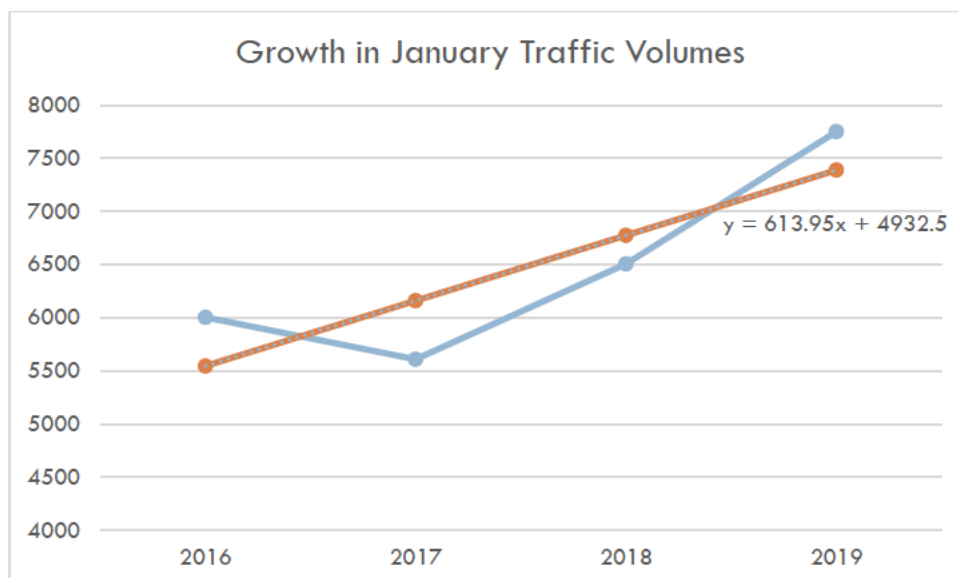


FIGURE 15 - JANUARY TRAFFIC GROWTH RATE

From the above we have derived an arithmetic growth rate of 8.3%.

In December 2019 and January 2020 New Plymouth District Council undertook traffic surveys using twin tube traffic counters these showed the following daily traffic flows:

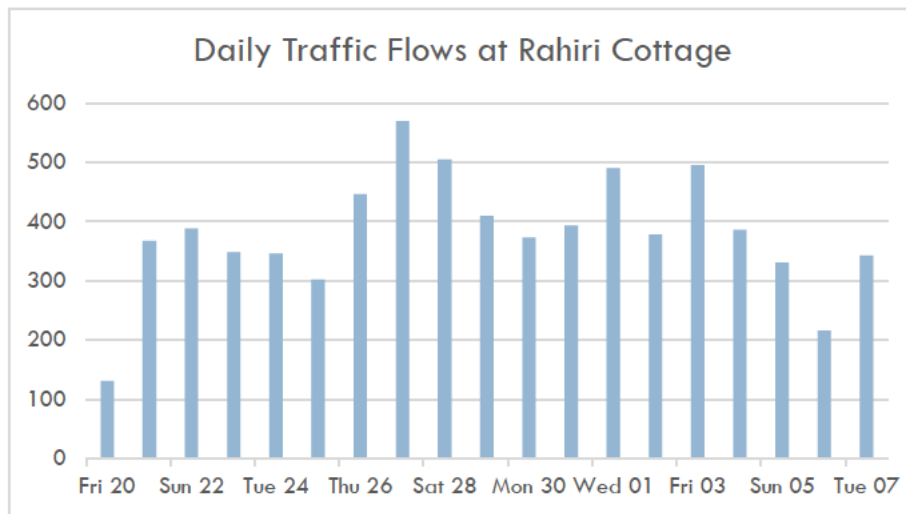


FIGURE 16 - NPDC 2019/20 TRAFFIC COUNT

Over this period the traffic volumes were an average of approximately 2800veh/week, this would drop for the remainder of January after the Christmas and New Year holiday period, but is likely to significantly exceed 2019 monthly total of 7750 vehicles to be close to the projected volume of 8,002 vehicles.

Due to the high tourist content in the traffic mix, Egmont Road does not follow the typical hourly flow pattern of traffic. The following graph shows the average hourly profile recorded over the period of the count compared to a typical profile.

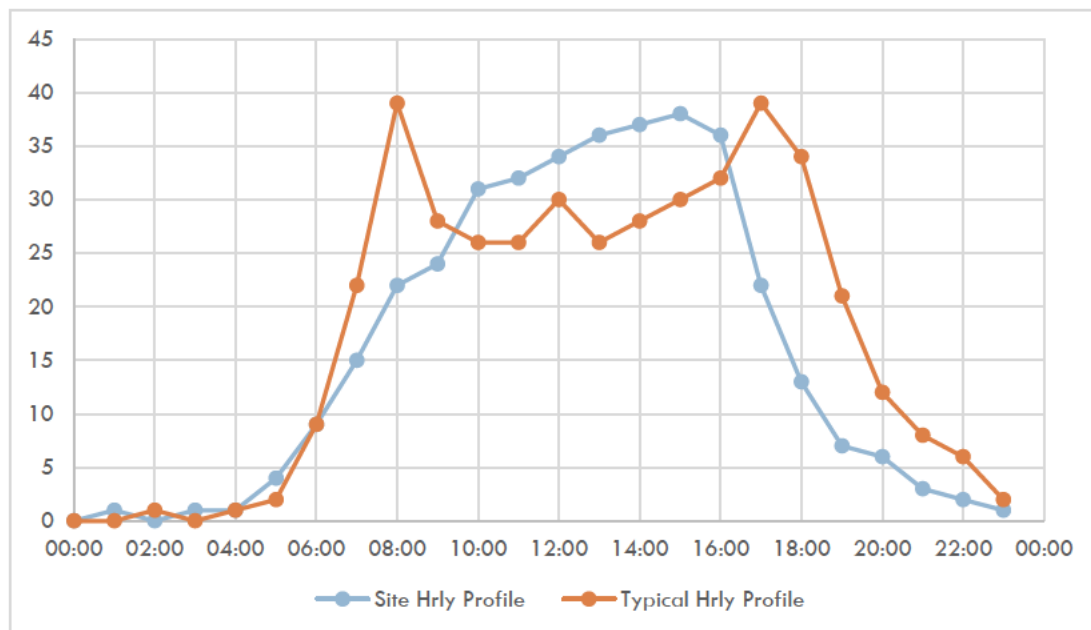


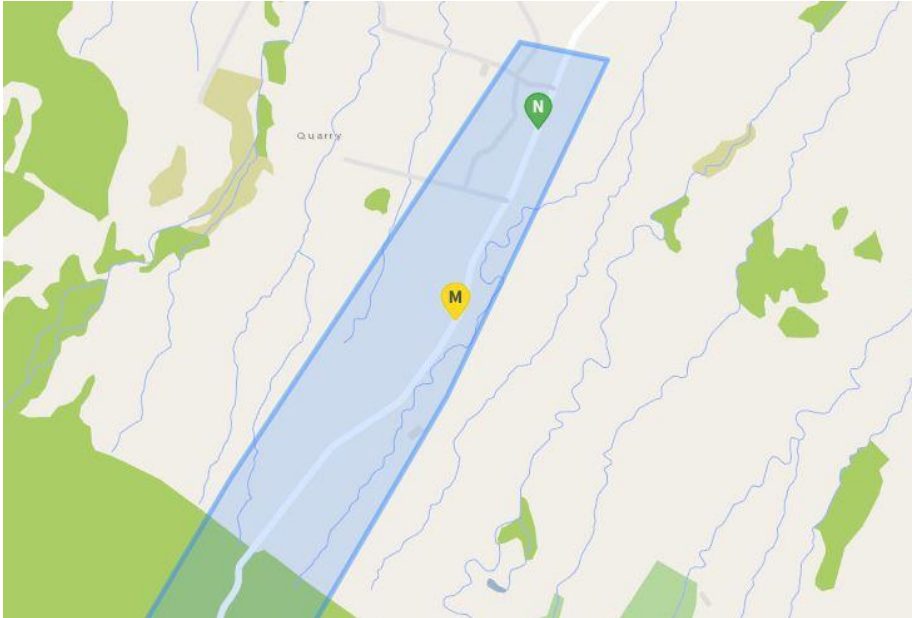
FIGURE 17 - AVERAGE HOURLY TRAFFIC DURING PEAK PERIODS

From this we can see a steadily increasing flow of vehicles entering the park during the morning to lunch time and a more concentrated flow of vehicles exiting the park between 4 and 6 o'clock in the afternoon. Which is consistent with people undertaking day tramps on the mountain.

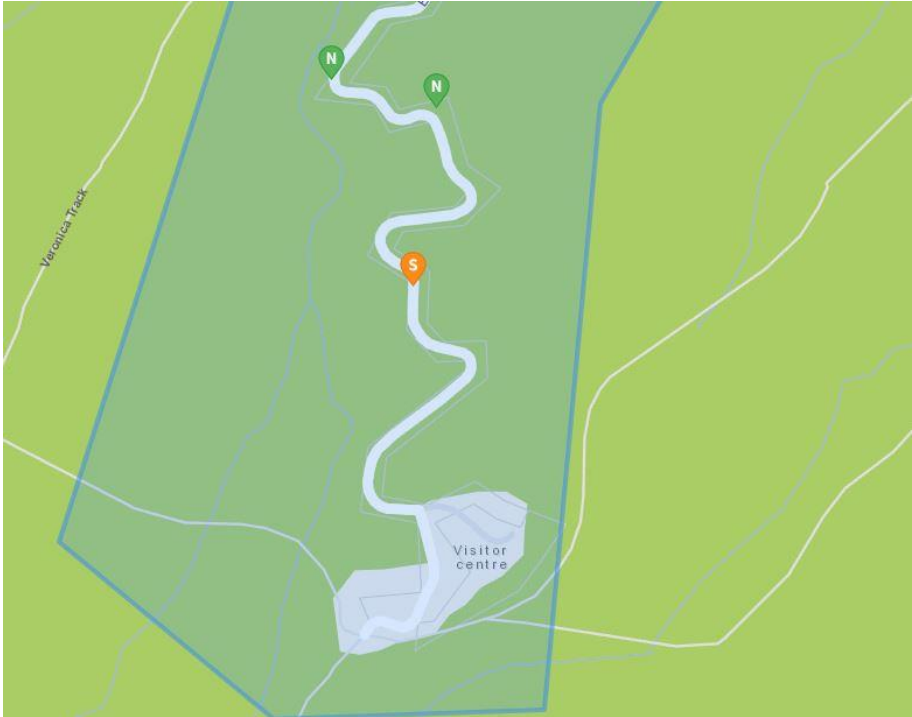
### Existing Crash Record

The national crash data base (CAS) indicates there have been five reported crashes in the past five years, one serious, one minor and three non-injury, between a point approximately 1 km below the proposed car park and the North Egmont Visitors Centre.

Two of the crashes occurred north of the car park site, both involved the driver being distracted one by the view and one by a bee in the car and losing control of their vehicle.



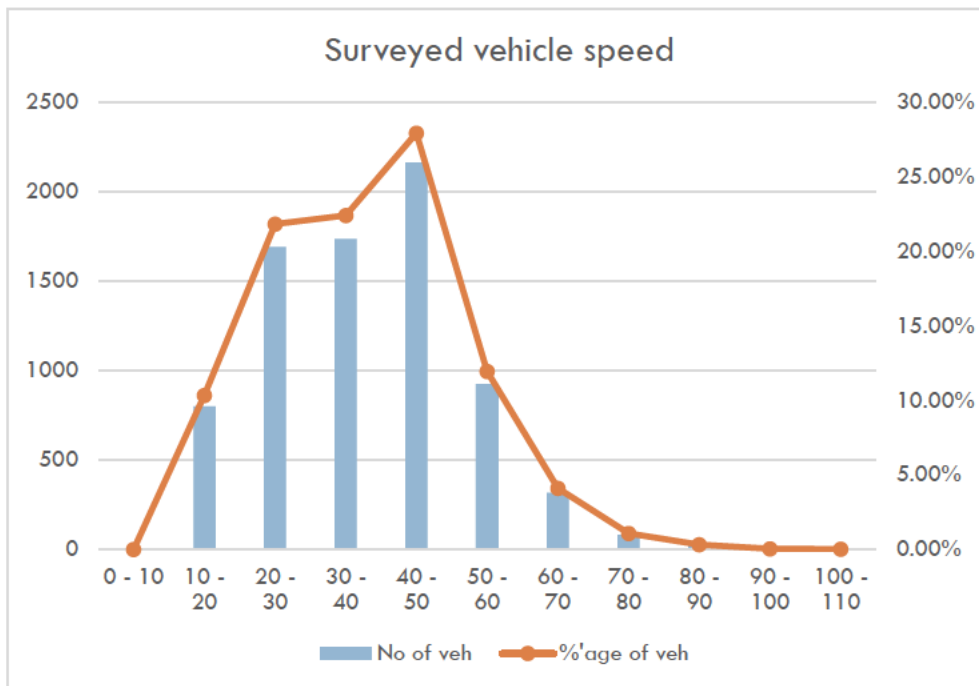
Three of the crashes occurred just below the visitors centre and all involved vehicles crossing the centre line on this steep and winding section of the road.



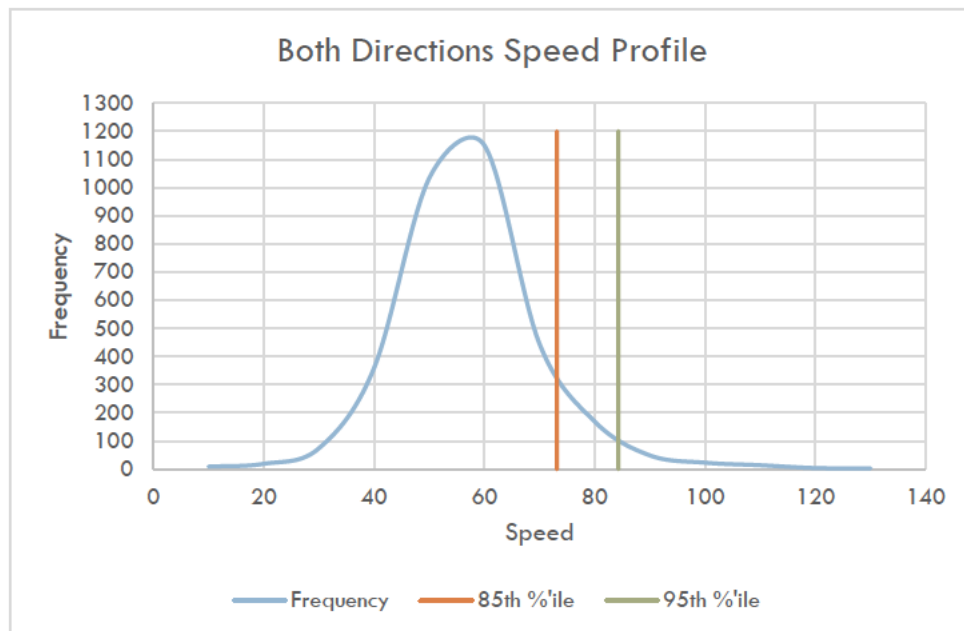
The serious crash involved a light truck that overturned, whilst avoiding a car that had crossed the centre line.

## Speed Environment

As part of the traffic survey at Rahiri Cottage the speed of vehicles was also determined and is shown below:

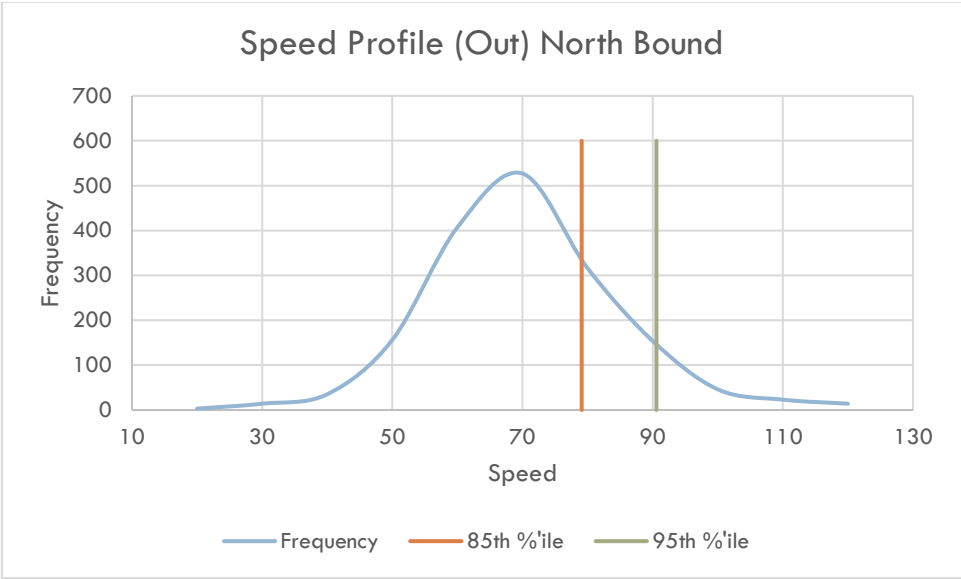


From this the mean speed of 38 kph and a 95<sup>th</sup> percentile of 61kph was determined. This count was undertaken within the National Park near the road gates. The lower than expected speeds were a function of traffic control being in place to control the numbers entering the park during some of the count period. A second traffic survey was undertaken at the same location in late May early June 2020 after the COVID 19 shutdown, the results are presented in the following graph:

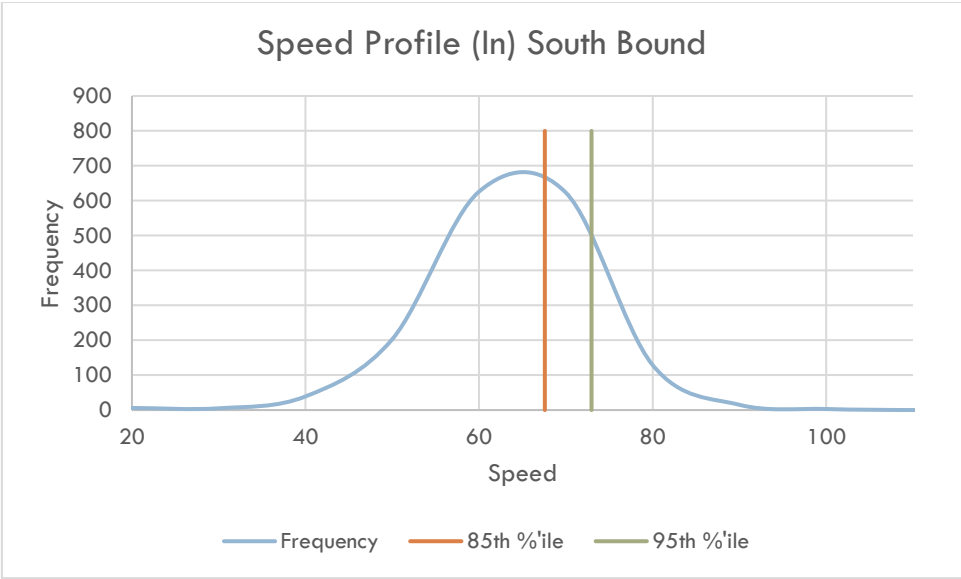


The 95<sup>th</sup> percentile speed was 84kph, the 85<sup>th</sup> percentile was 73kph and the mean or average speed was 62kph.

The data was then analysed for each direction with the following results:



The 95<sup>th</sup> percentile speed was 91kph, the 85<sup>th</sup> percentile was 79kph and the mean or average speed was 66kph.



The 95<sup>th</sup> percentile speed was 73kph, the 85<sup>th</sup> percentile was 68kph and the mean or average speed was 59kph.

Vehicles passing the proposed car park site entrance are expected to be travelling faster than this probably of the order of 20 to 30kph or so as the road is more open and visibility improved.

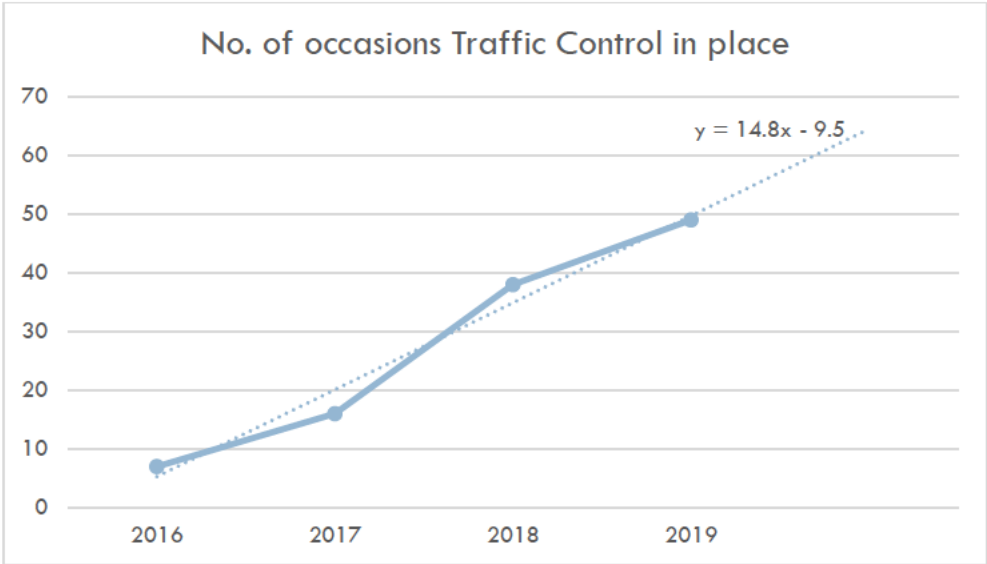
### Parking Demand

NPDC undertook a parking demand survey at the NEVC for five days between the 27<sup>th</sup> December and 31<sup>st</sup> December 2019. The survey was undertaken at 4 hourly intervals between 8:00 am and 6 pm each day. (The survey is included in Appendix A)

The results showed that on 3 of the five days the parking demand exceeded 90% typically between 10a.m. and 2p.m. Even at 8a.m. the average parking demand was 70% with presumably visitors setting off on tramps in the cool of the morning, as the visitor centre doesn't open until 8:30.

As mentioned previously when the car park becomes full traffic control is implemented at Rahiri Cottage in order to control demand on the car park on a one car out one in basis. This is likely to reduce the number of visitors visiting the site as people who can re schedule may choose to do so rather than wait in a traffic queue.

The following is a record of the number times traffic control has been implemented in recent years.



From the graph it can be seen that since 2016 there has been a steady increase in the need to implement the traffic control system.

## 5. DISCUSSION

In accordance with the New Plymouth District Plan the proposed car park access requires a sight distance of 250m in each direction, as the road has a posted legal speed limit of 100kph and carries more than 200 vehicles/day. This can be achieved to the north east but not to the south west where it is approximately 150m. The result of the district wide speed review indicates the speed limit on Egmont Rd should be lowered to 80kph and still further within the National Park to 60kph. This would reduce the required sight distance requirements to 175m which is nearly compliant.

The second traffic survey indicates that traffic speed just inside the national park heading north has a 95'thile speed of 91kph which compromises the sight distance to the car park entrance. If the lower speed limits are implemented then it is likely that the sight distance to the south will be sufficient.

It would also be appropriate to install suitable signage on the approaches to the car park to alert drivers of its presence and the possibility of vehicles manoeuvring in front of them.

It is difficult to predict the quantum of traffic that will utilise the new car park and shuttle service during the peak periods. The number of occasions the current measures are implemented has increased steadily and it was likely the growth would continue linearly for the short term say 3-5years. However the effects of COVID 19 and the lack of international tourists is likely to flatten

or delay the demand. However, we believe it will still be required daily over the Christmas and January period and from the end of January through to Easter it will be required at the weekends and on 2 or 3 weekdays every week.

The car park itself won't generate any additional traffic beyond the shuttle service, but will divert a portion of those heading to the visitors centre, thus reducing parking demand and the risk of drivers unused to the nature of the road making errors resulting in crashes. When it is operating we believe the car park and shuttle service would reduce the number of trips by up to 200 trips/day<sup>1</sup>, thus reducing the risk of crashes occurring.

Even during the peak hour of the peak period there is insufficient turning movements to meet a right turn bay warrant, in accordance with the Austroads Guide to Road Design. However, given the narrowness of the lane widths and lack of sealed shoulders it would be prudent to provide at a minimum some shoulder widening similar to a Diagram D in NZTA's Planning Policy Manual as shown below.

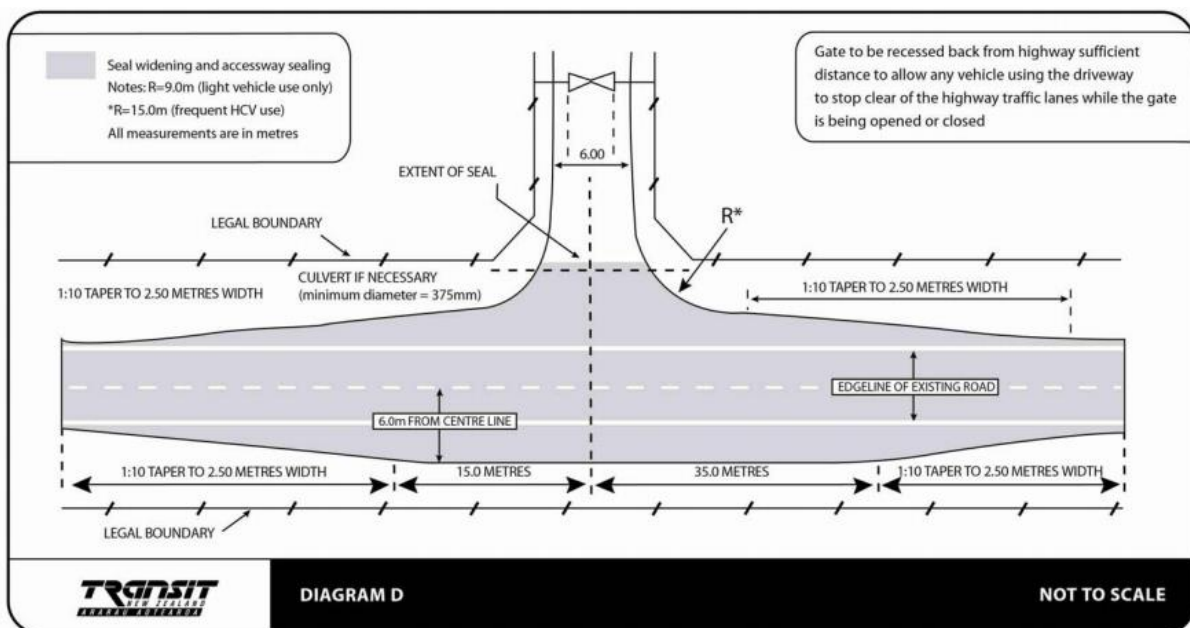


FIGURE 18 - RECOMMENDED SEAL WIDENING AT ENTRANCE

Given the height differential between the road and the site care will need to be taken to ensure the sight distances are not restricted by earthworks by creating visibility splays either side of the access. The width of the access should also be of sufficient width at the boundary to accommodate the turning curve of the largest vehicle likely to access the car park i.e. a coach.

## 6. CONCLUSION

The proposed car park has the potential to reduce the likelihood for crashes to occur within the national park. It will also improve the visitor experience as there will be reduced likelihood of delays at peak times. The access to the car park has limited sight distance to the south west but this can be overcome with the proposed changes to the speed limits in the area and signage. We therefore consider the effects of the proposed car park are less than minor or even positive in terms of the local roading environment.

<sup>1</sup> Based on a turnover of 2 vehicle parks /day



## **Appendix A**

### Car Parking Survey





## APPENDIX C      BTW DWG 230129-03

# NORTH TARANAKI VISITOR CENTRE

## NORTH TARANAKI VISITOR CENTRE UPGRADE PRELIMINARY DESIGN DRAWINGS

### TE KOTAHITANGA O TE ATIWA

**DRAWING REGISTER**

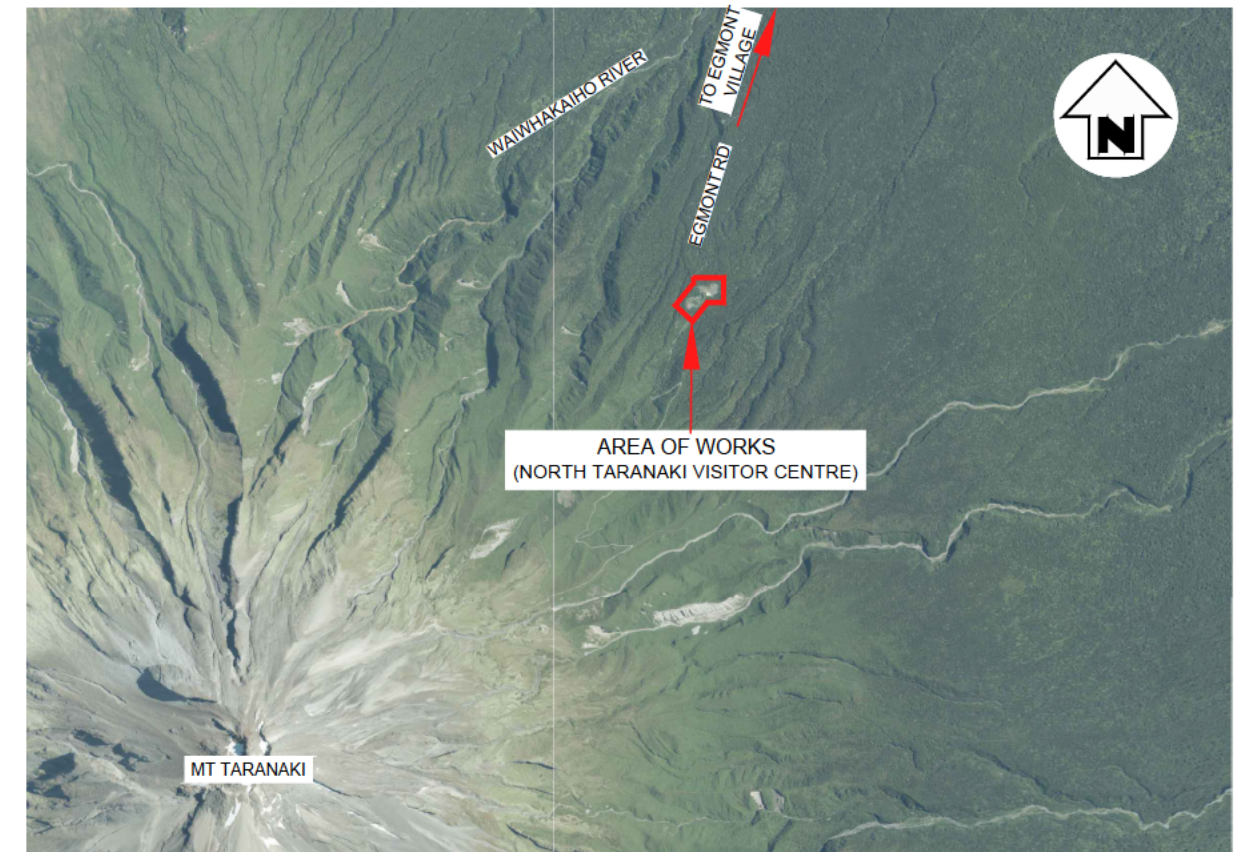
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			WD			
230129.03	C00	COVER SHEET	25/07/23			
230129.03	C01	EXISTING SITE LAYOUT PLAN	25/07/23			
230129.03	C02	CARPARK LAYOUT PLAN	25/07/23			
230129.03	C03	SITE GRADING PLAN	25/07/23			
230129.03	C04	EARTHWORKS PLAN	25/07/23			
230129.03	C05	EARTHWORK SECTIONS - 1	25/07/23			
230129.03	C06	EARTHWORK SECTIONS - 2	25/07/23			

**KEY**

WD	WORKING DRAFT	C	TENDER
A	APPROVAL	O	CONSTRUCTION
B	CONSENTS	AS	AS BUILT

**TRANSMITTAL**

TO	ATTENTION	DATE OF ISSUE / REVISION			
		WD			
OWNER / DEVELOPER	TE KOTAHITANGA O TE ATIWA	25/07/23			
ARCHITECT / DESIGNER					
QUANTITY SURVEYOR					
BUILDER / CONTRACTOR					
TERRITORIAL AUTHORITY	NEW PLYMOUTH DISTRICT COUNCIL				



**PROJECT LOCATION PLAN**  
SCALE N.T.S

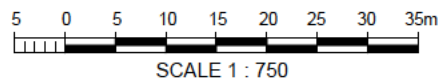
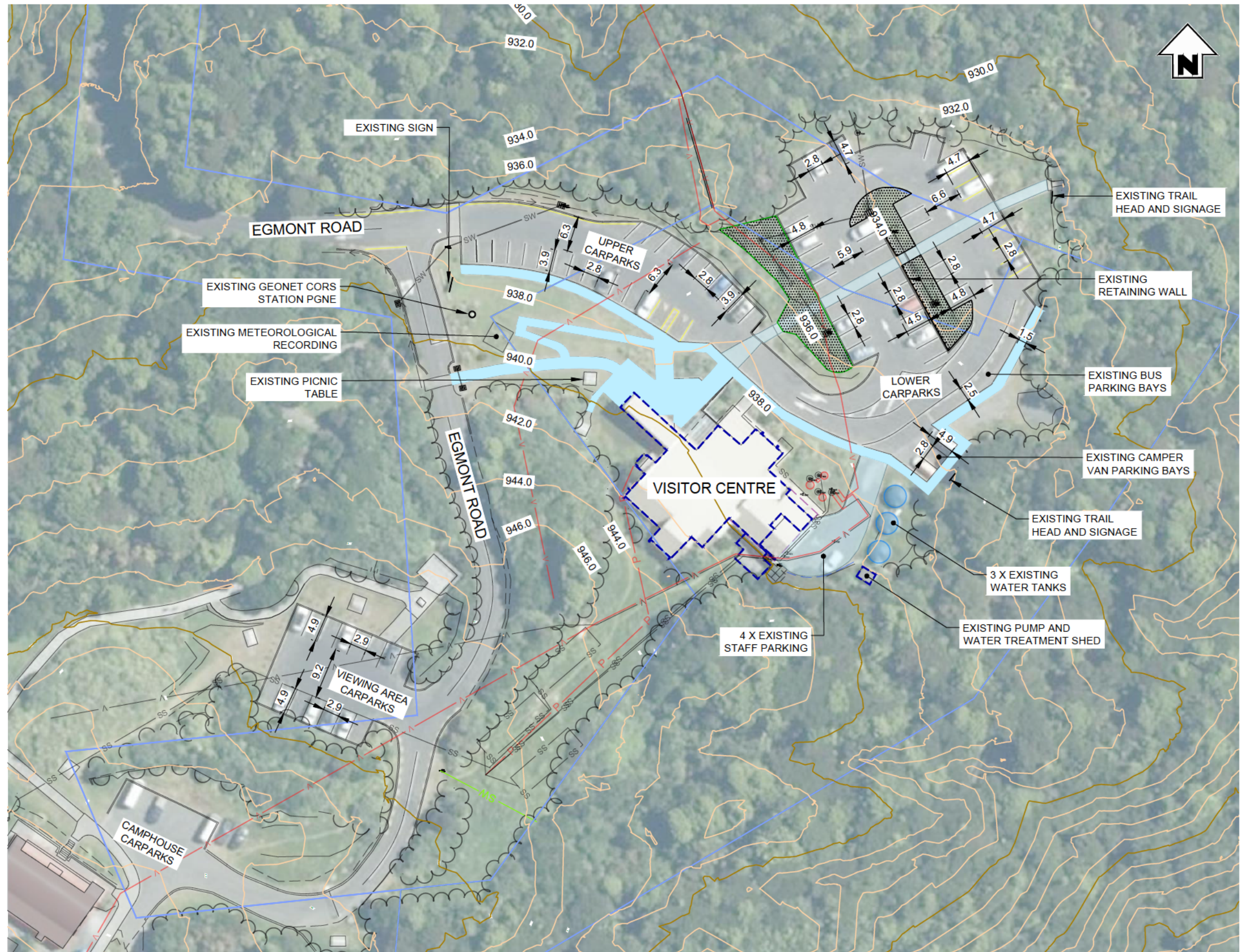
**GENERAL NOTES**

1. AERIAL IMAGE CIRCA 2022 MAY NOT BE FULLY REPRESENTATIVE OF THE SITE.
2. ALL SERVICES ARE SHOWN INDICATIVELY ONLY.

**LEGEND**

	EXISTING
MAJOR CONTOUR	
MINOR CONTOUR	
BOUNDARIES	
FLUSH NIB KERB	
EDGE OF SEAL	
POWER	
SEWER	
TREE DRIP LINE	
BOTTOM OF BANK	
NIWA DUCT	
SUBSOIL DRAIN	
MANHOLE	
SUMP	
BUILDING	
FOOTPATH	
RAINGARDEN	

	EXISTING CARPARKS
UPPER	23 + 2 (DISABLED PARKING) = 25
LOWER	44
VIEWING AREA PARKING	15
BUS PARKING	2
CAMPHOUSE	5
STAFF PARKING	4
TOTAL	95



Disclaimer:  
Areas and dimensions may be subject to scale error.  
Scaling from this drawing is at the users risk.

PLAN  
SCALE 1:750

**ISSUED FOR APPROVAL**



**SURVEYING  
ENGINEERING  
PLANNING  
ENVIRONMENT**

NO	DATE	BY	CHKD	APPR	OPER	DESCRIPTION	NUMBER	TITLE	
1	17/07/23	KA	SH	SH		ISSUED FOR APPROVAL			
REVISIONS							DESCRIPTION	NUMBER	TITLE
REFERENCE DRAWINGS									

GENERAL NOTES  
1. Coordinates in terms of : Geodetic Datum (Taranaki 2000)  
2. Elevations in terms of : NZ Vertical Datum 2016  
3. Contour interval is : 2m



LOCATION	NTVC
PROJECT No.	230129
A3 SCALE	AS SHOWN
SURVEYED	MCKINLAYS
DRAWN	KA
CHECKED	SH

TITLE  
**TE KOTA HITANGA O TE ATIWA  
NORTH TARANAKI VISITOR CENTRE UPGRADE  
EXISTING SITE LAYOUT PLAN**

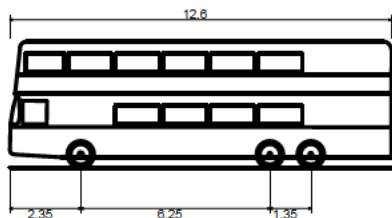
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**GENERAL NOTES**

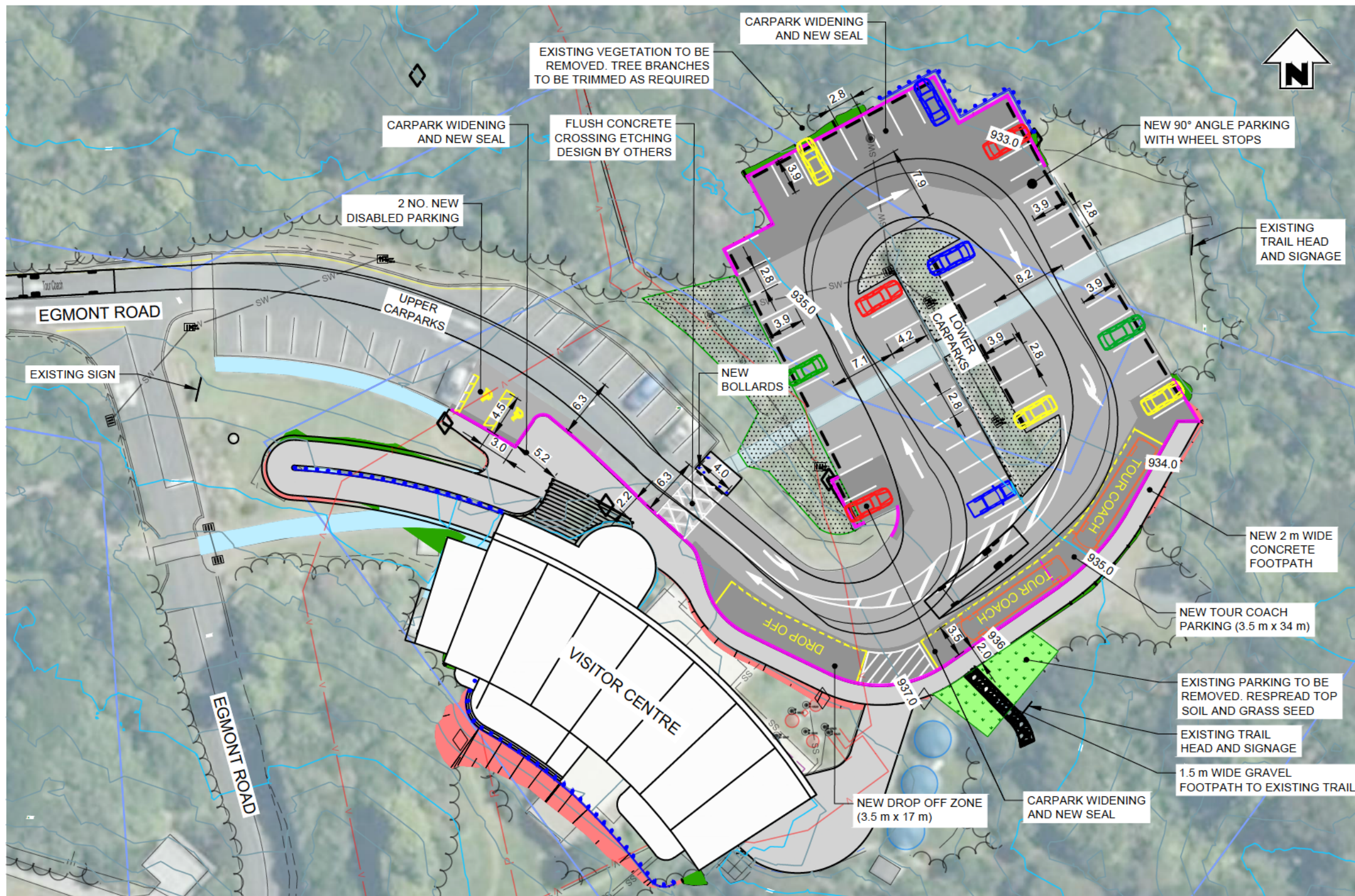
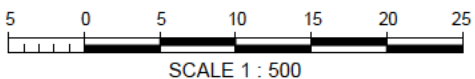
1. AERIAL IMAGE CIRCA 2022 MAY NOT BE FULLY REPRESENTATIVE OF THE SITE.
2. ALL SERVICES ARE SHOWN INDICATIVELY ONLY.
3. NEW SERVICES (THREE WATERS) ARE NOT SHOWN ON THIS PLAN.
4. EXISTING MARKINGS TO BE REMOVED AND REINSTATED.
5. ALL SIGNS AND PAVEMENTS ARE TO BE IN ACCORDANCE WITH THE NZTA MANUAL OF TRAFFIC SIGNS AND MARKINGS.

**LEGEND**

	EXISTING	PROPOSED
MAJOR CONTOUR		
MINOR CONTOUR		
BOUNDARIES		
FLUSH NIB KERB		
EDGE OF SEAL		
POWER		
SEWER		
TREE DRIP LINE		
BOTTOM OF BANK		
NIWA DUCT		
SUBSOIL DRAIN		
MANHOLE		
SUMP		
FOOTPATH		
RAINGARDEN		
ASPHALT / CHIPSEAL		
GRASS / PLANTED		
FILL BATTER		
CUT BATTER		



Tour Coach  
 Overall Length 12.600m  
 Overall Width 2.500m  
 Overall Body Height 4.164m  
 Min Body Ground Clearance 0.335m  
 Track Width 2.500m  
 Lock-to-lock time 6.00s  
 Wall to Wall Turning Radius 12.500m



	EXISTING CAR PARKING	PROPOSED CAR PARKING
UPPER	23 + 2 (DISABLED PARKING) = 25	20 + 2 (DISABLED PARKING) = 22
LOWER	44	48 (90 DEGREE)
BUS PARKING	2	2 (TOUR COACH) + 3 DROP OFF = 5
VIEWING AREA PARKING	15	15
CAMPHOUSE	5	5
STAFF PARKING	4	4
TOTAL CARPARKS	95	99

PLAN  
SCALE 1:500

Disclaimer:  
 Areas and dimensions may be subject to scale error.  
 Scaling from this drawing is at the users risk.

**ISSUED FOR APPROVAL**



**SURVEYING  
 ENGINEERING  
 PLANNING  
 ENVIRONMENT**

NO	DATE	BY	CHKD	APPR	OPER	DESCRIPTION	NUMBER	TITLE
1	17/07/23	KA	SH	SH		ISSUED FOR APPROVAL		

GENERAL NOTES  
 1. Coordinates in terms of: Geodetic Datum (Taranaki 2000)  
 2. Elevations in terms of: NZ Vertical Datum 2016  
 3. Contour interval is: 2m

TE KOTAHIANGA O  
**TE AT/AWA**

LOCATION	NTVC
PROJECT No.	230129
A3 SCALE	AS SHOWN
SURVEYED	MCKINLAYS
DRAWN	KA
CHECKED	SH
	17/07/2023
	17/07/2023

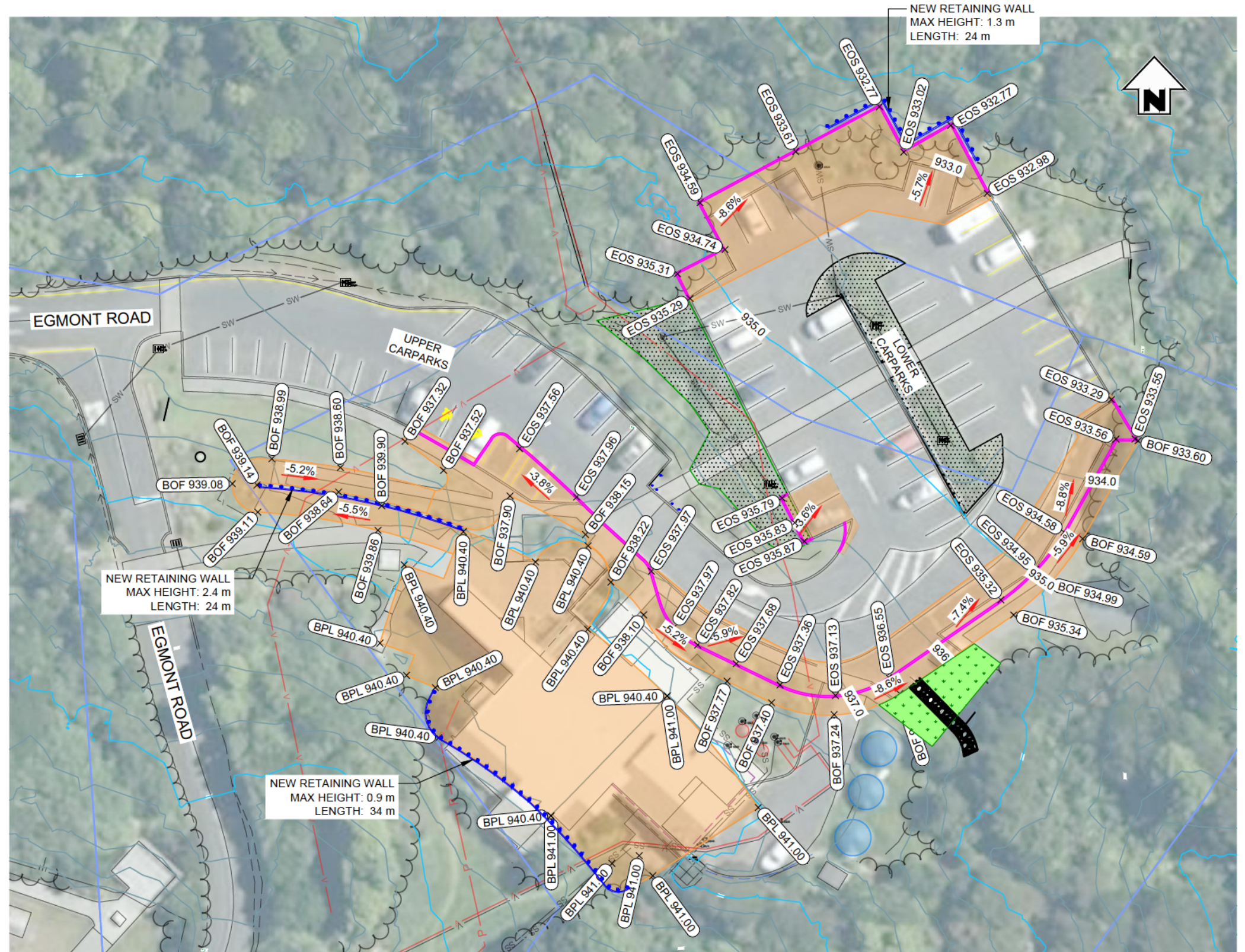
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		NORTH TARANAKI VISITOR CENTRE UPGRADE	
		CARPARK LAYOUT PLAN	
ORIGINAL SIZE	DRAWING No.	SHEET	REVISION
A3	230129-03	C02	WD

**GENERAL NOTES**

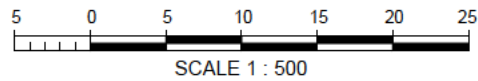
1. EOS = NEW EDGE OF SEAL LEVELS
2. BOF = NEW BACK OF FOOTPATH LEVELS
3. BPL = NEW BUILDING PAD LEVELS
4. TOTAL GRADING AREA = 1900 m<sup>2</sup>

**LEGEND**

- MAJOR CONTOURS
- MINOR CONTOURS
- FLUSH NIB KERB
- GRADING AREA



**PLAN**  
SCALE 1:500



Disclaimer:  
Areas and dimensions may be subject to scale error.  
Scaling from this drawing is at the users risk.

ISSUED FOR APPROVAL



**SURVEYING  
ENGINEERING  
PLANNING  
ENVIRONMENT**

NO	DATE	BY	CHKD	APPR	OPER	DESCRIPTION	NUMBER	TITLE

GENERAL NOTES  
1. Coordinates in terms of: Geodetic Datum (Taranaki 2000)  
2. Elevations in terms of: NZ Vertical Datum 2016  
3. Contour interval is: 2m

**TE KOTAHIANGA O  
TE ATIAWA**

LOCATION	NTVC
PROJECT No.	230129
A3 SCALE	AS SHOWN
SURVEYED	MCKINLAYS
DRAWN	KA
CHECKED	SH
	17/07/2023
	17/07/2023

TITLE		TE KOTAHIANGA O TE ATIWA NORTH TARANAKI VISITOR CENTRE UPGRADE SITE GRADING PLAN	
ORIGINAL SIZE	A3	DRAWING No.	230129-03
SHEET	C03	REVISION	WD

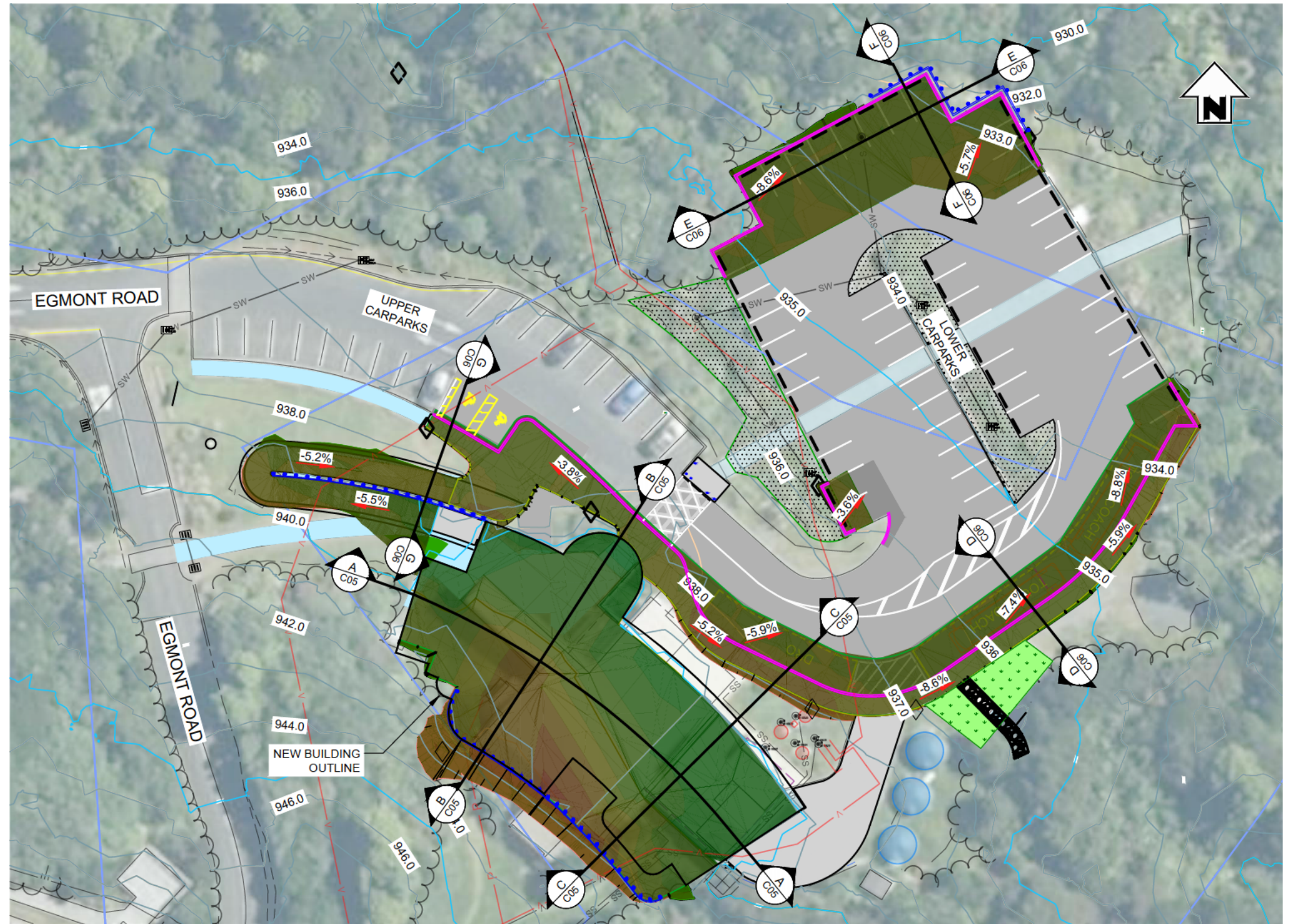


**GENERAL NOTES**

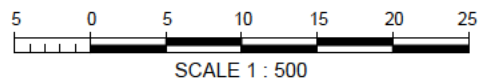
1. THE CONTRACTOR SHALL STABILISE EXPOSED SURFACES AS SOON AS PRACTICABLE.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NZS4404 UNLESS NOTED OTHERWISE.
3. EARTHWORK SECTIONS REFER TO SHEET C05 AND C06.
4. DESIGN CUT SLOPE 1V:1H & 1V:2H
5. DESIGN FILL SLOPE 1V:2H & 1V:8H
6. NEGATIVE NUMBERS = CUT
7. POSITIVE NUMBERS = FILL
8. TOTAL CUT VOLUME = 247 m³
9. TOTAL FILL VOLUME = 785 m³

**EARTHWORKS CUT AND FILL VOLUME TABLE**

Number	Color	Minimum Elevation (m)	Maximum Elevation (m)
1	Dark Brown	-2.000	-1.500
2	Brown	-1.500	-1.000
3	Light Brown	-1.000	-0.500
4	Olive Green	-0.500	0.000
5	Green	0.000	0.500
6	Light Green	0.500	1.000
7	Medium Green	1.000	1.500
8	Dark Green	1.500	2.000
9	Very Dark Green	2.000	2.500



**PLAN**  
SCALE 1:500



Disclaimer:  
Areas and dimensions may be subject to scale error.  
Scaling from this drawing is at the users risk.

**ISSUED FOR APPROVAL**



**SURVEYING  
ENGINEERING  
PLANNING  
ENVIRONMENT**

NO	DATE	BY	CHKD	APPR	OPER	DESCRIPTION	NUMBER	TITLE
						ISSUED FOR APPROVAL		
REVISIONS						REFERENCE DRAWINGS		

**GENERAL NOTES**

1. Coordinates in terms of : Geodetic Datum (Taranaki 2000)
2. Elevations in terms of : NZ Vertical Datum 2016
3. Contour interval is : 2m

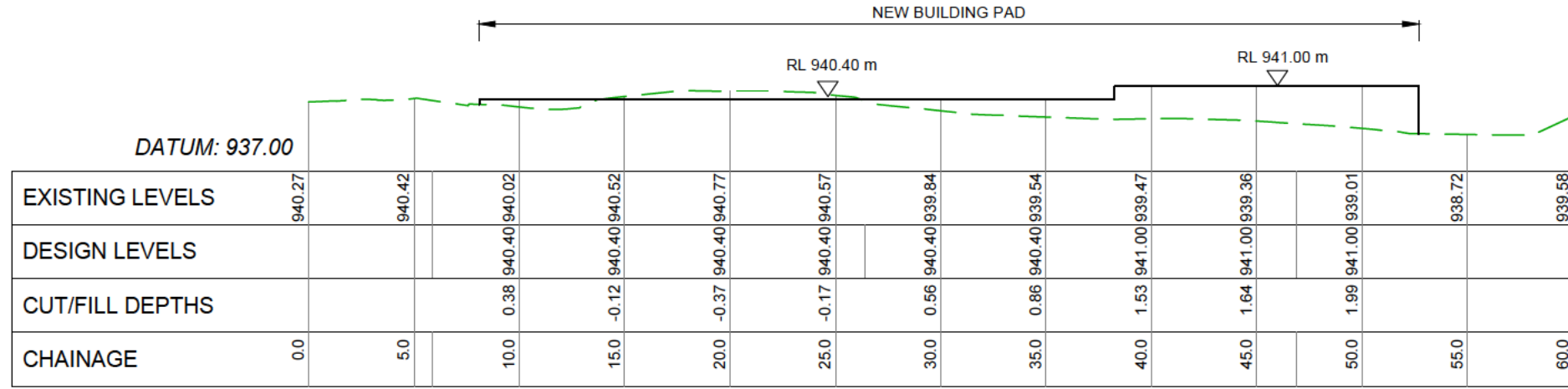
**TE KOTAHITANGA O TE ATIAWA**

LOCATION	NTVC
PROJECT No.	230129
A3 SCALE	AS SHOWN
SURVEYED	MCKINLAYS
DRAWN	KA
CHECKED	SH
	17/07/2023
	17/07/2023

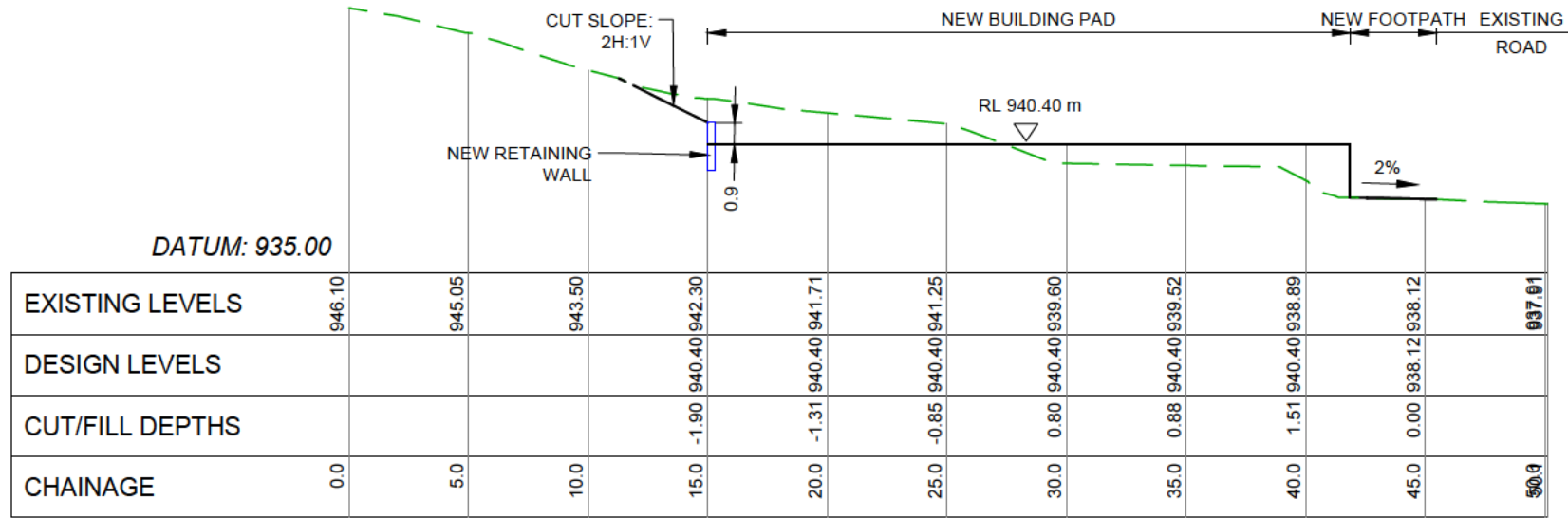
TITLE		TE KOTAHITANGA O TE ATIAWA	
		NORTH TARANAKI VISITOR CENTRE UPGRADE	
		EARTHWORKS PLAN	
ORIGINAL SIZE	DRAWING No.	SHEET	REVISION
A3	230129-03	C04	WD

**LEGEND**

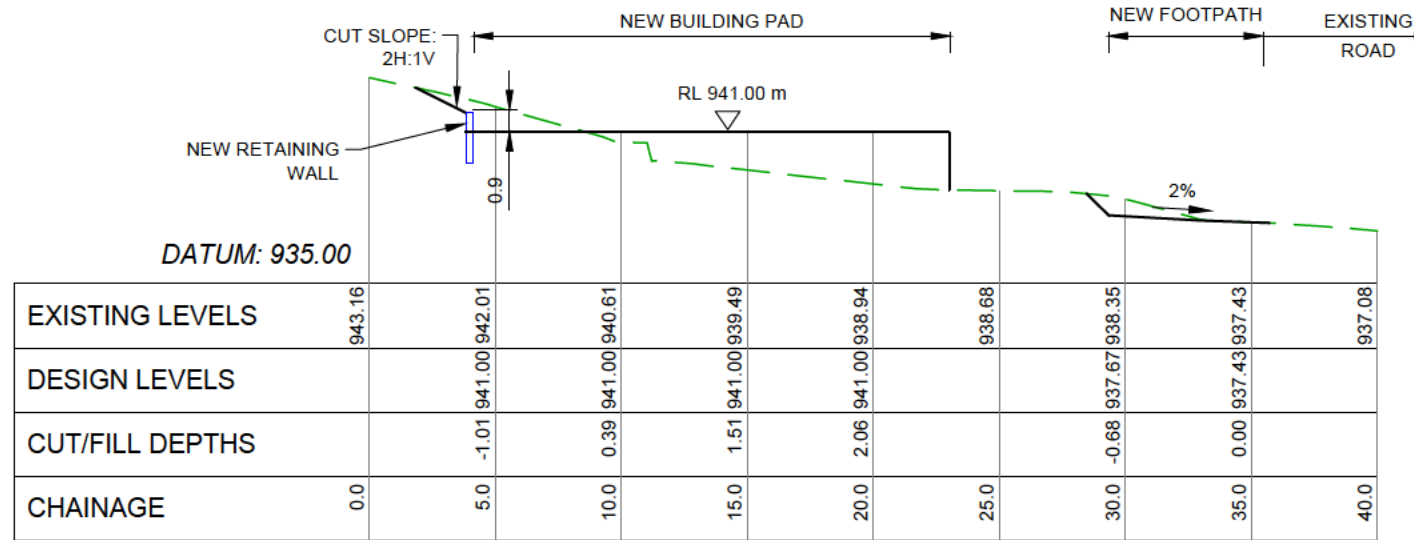
	EXISTING	PROPOSED
SURFACE LEVEL		



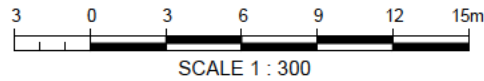
**A SECTION**  
C04 SCALE 1:300



**B SECTION**  
C04 SCALE 1:300



**C SECTION**  
C04 SCALE 1:300



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ENGINEERING  
PLANNING  
ENVIRONMENT**

NO	DATE	BY	CHKD	APPR	OPER	DESCRIPTION	NUMBER	TITLE
						ISSUED FOR APPROVAL		
REVISIONS							REFERENCE DRAWINGS	

GENERAL NOTES  
1. Coordinates in terms of : Geodetic Datum (Taranaki 2000)  
2. Elevations in terms of : NZ Vertical Datum 2016  
3. Contour interval is : NA

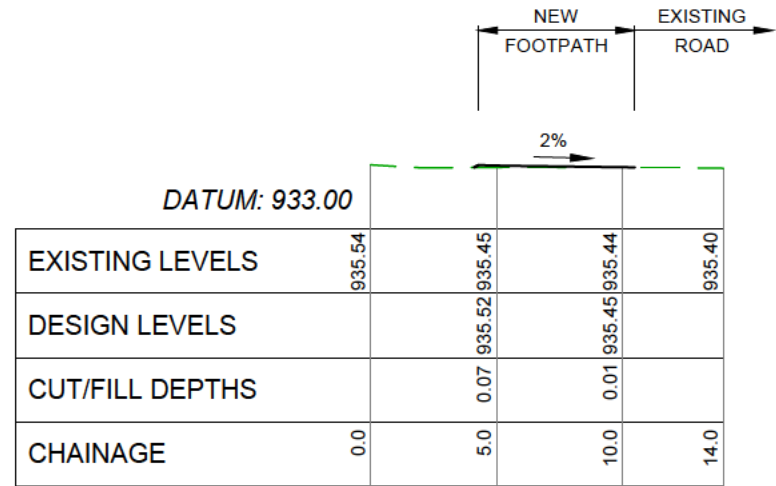


LOCATION	NTVC	
PROJECT No.	230129	
A3 SCALE	AS SHOWN	
SURVEYED	MCKINLAYS	-
DRAWN	KA	17/07/2023
CHECKED	SH	17/07/2023

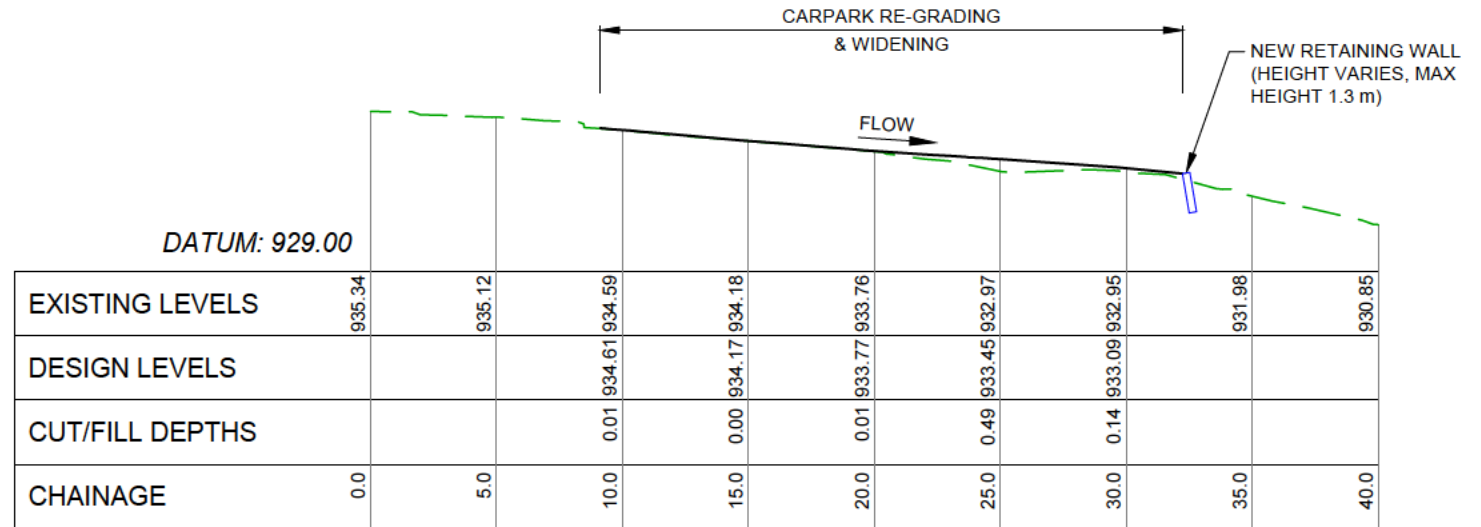
TITLE		TE KOTAHITANGA O TE ATIWA	
		NORTH TARANAKI VISITOR CENTRE UPGRADE	
		EARTHWORK SECTIONS - 1	
ORIGINAL SIZE	A3	DRAWING No	230129-03
SHEET	C05	REVISION	WD

**LEGEND**

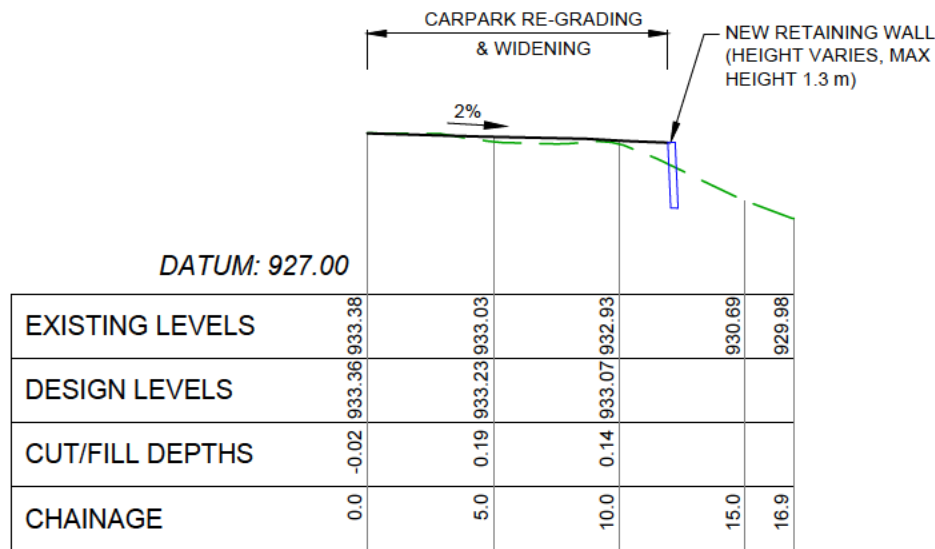
	EXISTING	PROPOSED
SURFACE LEVEL		



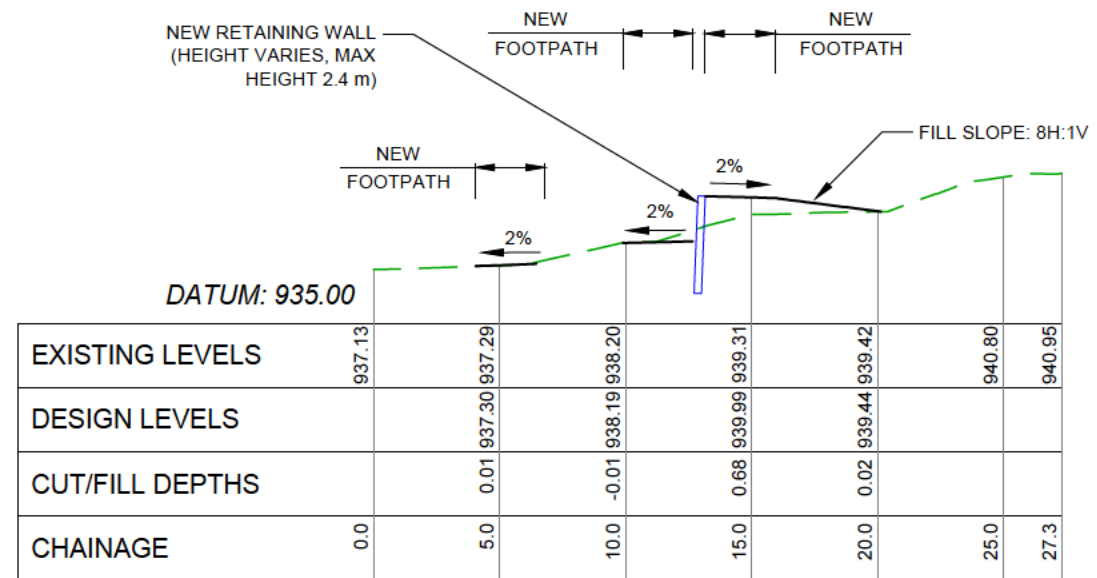
**D SECTION**  
C04 SCALE 1:300



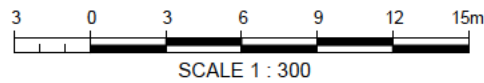
**E SECTION**  
C04 SCALE 1:300



**F SECTION**  
C04 SCALE 1:300



**G SECTION**  
C04 SCALE 1:300



**ISSUED FOR APPROVAL**



**SURVEYING  
ENGINEERING  
PLANNING  
ENVIRONMENT**

NO	DATE	BY	CHKD	APPR	OPER	DESCRIPTION	NUMBER	TITLE
						ISSUED FOR APPROVAL		
REVISIONS						REFERENCE DRAWINGS		

GENERAL NOTES  
1. Coordinates in terms of : Geodetic Datum (Taranaki 2000)  
2. Elevations in terms of : NZ Vertical Datum 2016  
3. Contour interval is : NA



LOCATION	NTVC	
PROJECT No.	230129	
A3 SCALE	AS SHOWN	
SURVEYED	MCKINLAYS	-
DRAWN	KA	17/07/2023
CHECKED	SH	17/07/2023

TITLE		TE KOTAHITANGA O TE ATIWA NORTH TARANAKI VISITOR CENTRE UPGRADE EARTHWORK SECTIONS - 2	
ORIGINAL SIZE	A3	DRAWING No.	230129-03
SHEET	C06	REVISION	WD