



## Queenstown MTB Trails- Stage 1 Design Plan

West Coast, Tasmania

West Coast Council  
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**Cover imagery: Matt Staggs Visuals**

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# 1 Executive Summary

The West Coast of Tasmania has a unique landscape that provides a profound opportunity to develop and promote a suite of mountain bike experiences that will attract riders from across Australia and around the world. The achievement of this objective will rely upon the development of trail experiences that are high-quality, iconic and unique, capitalising on the stunning West Coast landscape.

The mountains of the West Coast Range and specifically Mount Owen are well suited to the development of unique mountain bike trails that would allow Australian (and visiting international) mountain bike riders access to experiences they must currently travel to North America, South America and Europe to enjoy. A large range of elevation, and a unique, rugged landscape provide a highly-unique opportunity for trail development.

*Dirt Art* has designed a trail network that achieve the following strategic objectives;

- Sustainably showcase the unique West Coast environment
- Develop designs for a network of trails that has significant appeal for visiting riders
- Develop designs for a network of trails that caters for local riding community wants and needs
- Minimise ongoing maintenance and maximise the riding experience by carefully considering the local climate
- Maximise economic development opportunities for the region
- Work to reduce implementation complexity through careful analysis of land tenure and related factors
- Create a suite of 'hero trail experiences'
- Create trails for a broad market of riders
- Maximise the project budget
- Carefully consider operational aspects of the trails (including; safety management, maintenance, uplift etc.)

The resulting trail plan proposes 35.1km of new, purpose-built mountain bike trails through a unique mountainous landscape, offering approximately 810m of rideable vertical elevation. Ranging from beginner (green circle), through to advanced (double black diamond) difficulty trails, the trail network focuses on a strong intermediate-advanced audience. This focus is consistent with the exposure and remoteness and landscape, as well as catering for a market of riders who are not a strong focus of many other mountain bike destinations in Tasmania.

This document provides the detailed implementation and construction plans for the proposed network, feasibility and concept planning reports are available as separate documents. The document and attachments have been designed to facilitate a construction tender process.

## 2 Introduction

### 2.1 Project Overview

*Dirt Art* has been engaged by the *West Coast Council* to develop a mountain bike trail Design Plan that will guide the trail infrastructure development proposed for the first stage of the Mount Owen Trail Network in Queenstown.

The report provides detailed construction plans, to assist in statutory approvals and the procurement of construction services and delivery of the construction contract for the trails.

This document builds on previous reports authored by *Dirt Art* and *Trail Systems*.

### 2.2 Key Objectives

The key objective of this report is to develop a mountain bike strategy for the West Coast of Tasmania that:

- Sustainably showcase the unique West Coast environment
- Develop designs for a network of trails that has significant appeal for visiting riders
- Develop designs for a network of trails that caters for local riding community wants and needs
- Minimise ongoing maintenance and maximise the riding experience by carefully considering the local climate
- Maximise economic development opportunities for the region
- Work to reduce implementation complexity through careful analysis of land tenure and related factors
- Create a suite of 'hero trail experiences'
- Create trails for a broad market of riders
- Maximise the project budget
- Carefully consider operational aspects of the trails (including; safety management, maintenance, uplift etc.)

### 2.3 Project Background

The recent history behind this project will be detailed below. A more comprehensive background can be found in the concept plan report for this project, *Mountain Bike Trail Strategy- West Coast, Tasmania 2019 Dirt Art Pty Ltd*.

The concept of utilising the growing mountain bike tourism market to contribute economically to the West Coast region has been progressing steadily over the past several years. In 2019 the first formal, purpose-built mountain bike trail was developed in the region at Oonah Hill in Zeehan. This project was developed and funded by the Tasmanian Parks and Wildlife Service (PWS), and marks a shift in the mountain bike experience in the

area. While only relatively small in scale (approximately 4km of new trail development), the project has attracted new riders to the area, and has importantly begun establishing the West Coast region as a recognised mountain bike destination.

In early 2019, the West Coast Council engaged *Dirt Art* to develop a concept plan for the development of mountain bike trails within the Greater Queenstown area (Mountain Bike Trail Strategy- West Coast, Tasmania 2019 *Dirt Art*). The report proposed the development of a number of gravity-focused mountain bike trail concepts in the Mount Owen area. Several trail corridors were proposed, catering for a largely advanced rider audience.

*Dirt Art* has used the concept plan document as a base for this project, essentially retaining all proposed corridors from the concept planning process. Minor changes have been made within this stage of the project, including the addition of a larger volume of intermediate trails, and the addition of a larger network of loop trails. The addition of further intermediate trails is possible due to more appropriate landscape areas found during the detailed design process.

During the lead in to the 2019 federal election, the project received a \$2.5m funding commitment from the Coalition Government. The project is also set to utilise the residual funds from a \$500k project fund originally managed by the PWS. While the notional budget of approximately \$3m in funding is available for the project, it is the intention of the project team to reserve some funding for the investigation and design of stage two trail projects within the region.

## 2.4 Establishing the West Coast as a Mountain Bike Destination

To achieve success in an increasingly competitive mountain bike destination market, the West Coast must develop distinct and engaging trail experiences within Iconic West Coast landscapes that are of sufficient quality to ensure riders are willing to travel to what are contextually remote locations.

The West Coast region offers an excellent opportunity to develop mountain bike trail experiences that are not yet available in Australia for which there is significant, demonstrated demand both domestically and internationally. While the opportunity is great, the West Coast also presents unique challenges in its climate, geology, topography and distance from population centres which serve to define the types of trail infrastructure it is feasible to develop in the area, and the markets that may be targeted through trail infrastructure development.

This development plan focuses on the following trail styles;

- Big-mountain enduro/trail riding with uplift opportunities
- Long format descending trails set in unique West Coast environments
- Long format trail rides with significant elevation gain/loss accessing and connecting towns

Shorter, accessible trail loops suitable for riders not utilising and uplift service, and those with less mountain bike experience

## 3 Methodology

The project has engaged the following methodology;

### 3.1 Background Analysis

*Dirt Art* has undertaken a comprehensive background analysis for the project, including the review of all relevant previous plans and reports. Notably, the majority of relevant literature reviewed occurred during the concept design phase for the project, and can be found within the report, Mountain Bike Trail Strategy- West Coast, Tasmania 2019 *Dirt Art Pty Ltd*.

### 3.2 Stage 1 Consultation

The first stage of consultation has involved consultation with the following key groups;

- The West Coast Council (WCC)
- The Tasmanian Parks and Wildlife Service (PWS)
- Taswater
- Mountain Heights School
- Commercial Operators/Businesses
- The West Coast MTB Club (WCMTBC)
- The Project Advisory Group

This stage of consultation has assisted in the guiding the development of detailed trail designs in preparation for construction.

### 3.3 Desktop Analysis

*Dirt Art* has undertaken extensive desktop analysis to determine key areas of potential trail development. Utilising land management and cadastral overlays, *Dirt Art* has avoided areas such as; mining leases, water catchment and private land. All concepts investigated are based on the project concept plan proposed trail corridors.

*Dirt Art* has utilised desktop analysis to develop a range of trail concepts in readiness for field investigations. These concepts have sought out areas with a range of preferable characteristics, including but not limited to;

- Unwood areas: due to better resistance to the wet climate
- Prominent ridgelines: free draining, elevated areas perform better in wet conditions
- North facing slopes: perform better in wet conditions
- Functional trail heads and uplift servicing: the proposed network is functional, intuitive for users and maximises uplift opportunities

### 3.4 Field Analysis

*Dirt Art* has undertaken extensive field analysis to ground truth and refine proposed trail alignments. The field analysis has confirmed broad trail corridors and overall network structure, as well as determining the location and concept designs for major trail head infrastructure.

### 3.5 Detailed Trail Design

Detailed trail design has placed the proposed trails within a 50m construction corridor. *Dirt Art* suggests a 50m corridor is utilised for the project given the novel landscape, and high risk of sub surface rock and other geotechnical constraints during construction. The designed trails represent a 50m built footprint, allowing construction 25m either side of the designed centerline.

The field work and design stage for the project has been undertaken by Simon French and Robert Potter, two of Australia's most experienced mountain bike trail design professionals.

### 3.6 Stage 2 Consultation

The second stage of consultation includes a 6-week public consultation process led by the West Coast Council, along with further consultation with key project stakeholders. This consultation process will be reviewed in the final report.

Further consultation will also target key stakeholders, including land managers and the broader business community.

### 3.7 Report Preparation

Preparation of draft and final reports has provided a comprehensive overview of the proposed construction process.

## 4 Site Analysis

### 4.1.1 Overview

The West Coast is defined by the Southern Ocean to the West, Macquarie Harbour to its south, and mountain ranges to its north and east. Relative to the rest of Tasmania the West coast is characterised by high-relief and dominated by the mountains of the West Coast Range, which runs roughly north-south through the area and extends from the peaks of Mount Agnew, Mount Heemskirk north of Zeehan through to Mount Darwin and Sorrell south of Queenstown.

The focus of this stage of the project is on Mount Owen. Mount Owen is a mountain of the West Coast Range with a summit less than five kilometres from the centre of Queenstown. The mountains sparsely vegetated slopes have become an icon of the West Coast and are a legacy of historic mining activities. While the landscape of Mount Owen is largely a product of human activity, the aesthetic experience it offers is unique in Australia and provides an excellent setting for the development of distinct trail experiences that attend to an unmet demand in the mountain bike destination market.

At higher elevations Mount Owen will provide riders with almost constant views of the mountains of the West Coast Range and the Tasmanian Wilderness World Heritage Area to the east and south.

### 4.1.2 Topography

Mount Owen's summit is approximately 1,146 metres above sea level, and approximately 1,000 metres above the town of Queenstown. This elevation range, so close to a population centre is one of the key attributes that makes Mount Owen an excellent site for trail development. While the summit of the mountain is not a feasible place to construct trail during this stage of the project, a black diamond or double black diamond summit trail may be possible at a later project stage, notably with a very high development complexity and cost.

The north-eastern aspect of the Mountain contains most of the proposed trail development. This aspect is composed of a series of ridges and gullies that all descend toward Conglomerate Creek, beneath the Lyell Highway.

Horsetail Falls on Moore Creek is a significant natural feature of Mount Owen and one of the key areas the proposed trail development will provide riders the opportunity to experience.

North Owen Peak extends toward the north east and provides spectacular views of Lake Burbury and south toward Frenchmans Cap and the Tasmanian Wilderness World Heritage Area.

Much of the Mountain presents conditions in which it is either not possible or not practical to establish mountain bike trail. This is due to steep side-slopes, cliffs, and exposed bedrock that would prevent establishment of trail benches. Concept trail corridors have been identified within which establishing trail consistent with the proposed technical difficulty rating and construction approach will be possible.

The Mount Owen area is largely dominated by relatively steep topography, with average slopes in the 30-50% range. The mountain features many prominent ridge lines, which generally provide the best opportunities for trail development. *Dirt Art* has focused trail design on gentler slopes and prominent ridge lines where possible.

#### 4.1.3 Climate

The region has a high annual rainfall, with annual rainfall ranges between 2,000 and 3,000mm. The frequency and intensity of rainfall events, combined with the exposure and remoteness of elevated areas of the West Coast reflect an environment not particularly suitable for beginner riders. Experienced, competent riders will comfortably contend with the challenges provided by the West Coast climate to access trail experiences that are not available elsewhere. Notably, the challenging climate is part of the West Coast riding experience, and should be embraced through marketing and promotion of the trails rather than presented as a negative attribute of riding in the area.

While summer will by virtue be the most popular riding season, the trail designs developed in this project have been designed to allow for year-round riding potential (though noting that snow will affect the higher elevation areas of the project at times during winter).

#### 4.1.4 Geology

Absence of soils with high plasticity and prevalence of gravel makes it extremely difficult to develop beginner and low-intermediate trail experiences on the West Coast. The freely draining gravel of Mount Owen does allow an enjoyable year-round riding surface where other climatic conditions do not limit access.

The geology of Mount Owen is varied and includes areas of conglomerates, quartz, sandstone, siltstone, mudstone and glacial deposits. The gravelly surface of much of the Mountain will dictate the style of trail that can be developed, though a more rugged, rustic style of trail suited to the local geology is consistent with the recommended trail style across the development and reflective of the setting.

An excess of surface rock will make for a time-consuming construction process, involving the movement of significant volumes of rock.

The site features extensive areas of bed rock and, rock outcrops and cliff faces. While these have been avoided during the design process, it should be expected that during construction a few sub-surface rock areas will force adjustments in trail alignment.

#### 4.1.5 Vegetation

The West Coast is renowned for areas of dense, essentially impenetrable vegetation. There are however areas, natural and modified by human activities that are sparsely vegetated and good sites for the economic development of unique trail products.

Areas of dense vegetation has been avoided due to the increased construction and maintenance costs densely vegetated areas involve. Locating trails in sparsely vegetated areas will not only minimise establishment and maintenance costs, but is essential to provide a distinct experience that will showcase quintessential West Coast environments.

While areas of sparse vegetation have been targeted during design, it should be noted that these areas do potentially increase the risk to riders in the event of a fall. Without vegetation to restrict travel during a fall, or unplanned departure from the trail tread, there is potentially a higher risk to riders. This increased risk can be effectively managed by limiting rider speeds, and by avoiding steeper fall zones during the construction process.

#### 4.1.6 Environmental Values

Mount Owen is an iconic example of the extreme impact that early mining activity has had on West Coast landscapes. While the denuded landscape is not wilderness in a conventional sense, it is an incredible setting for the development of mountain bike experiences that will provide sensations of wilderness, exposure and its location within the West Coast and Tasmanian environment.

The sparse, regenerating vegetation allows for constant views, which is a key attribute adding to the appeal of Mount Owen as a site for trail development.

While it is expected that the PWS will require a Reserve Activity Assessment (RAA) to be completed for the proposed development, the highly-modified, essentially denuded environment is not expected to present significant natural values that would preclude development.

#### 4.1.7 Land Tenure

The proposed development area falls entirely within Crown Land administered by Crown Land Services/PWS. The boundary of the proposed development area to the north-east is defined by an existing mining-lease held by Copper Mines of Tasmania.

Locating the development entirely within a single tenure type simplifies approval and operational processes.

*Dirt Art* has avoided land under water catchment of Taswater during the trail design process, further limiting the complexity of the approvals process.

## 4.1.8 Land Lease and License Considerations

### 4.1.8.1 *Communication Assets*

The summit area of Mount Owen houses several communication infrastructure assets. The area where these assets are located is not a prime focus for the trail development, with the main summit trail head located a significant distance from these assets. One trail does bypass these assets, which is the upgrade of an existing walking trail (N9). Given the difficult access to this trail (a challenging hike up the access road), and the challenging nature of the trail (double black diamond), it is expected that usage volumes on this trail will be low. Liaison with specific asset owners will be required to determine if any treatments such as fencing are required.

### 4.1.8.2 *Mining Leases*

A number of mining leases are active in the region, including on the slopes of Mount Owen. *Dirt Art* has avoided all mining leases, effectively removing the short and long-term risk of attempting to propose trails in these lease areas.

### 4.1.8.3 *Access Permits*

Local tourism operator, Roam Wild currently holds a non-exclusive access permit to the proposed uplift road proposed to service the project. The project does not have any practical implications for this, or any other road access permits currently in place.

## 5 Consultation

### 5.1 Overview

The project has included extensive consultation with a range of organisations, land managers, groups and individuals. Notably, the next stage of consultation will be much more comprehensive, in line with the presentation of trail designs.

### 5.2 Key Stakeholders

#### 5.2.1 West Coast Council

The WCC has been consulted throughout the project, including several face-to-face and phone meetings. The WCC are strong supporters of the project, and support the present trail design plan.

#### 5.2.2 Tasmanian Parks and Wildlife Service

The PWS are an important stakeholder as the land manager for the area in which the trails are proposed to be constructed. The PWS are familiar with the concept plan for the project, and will be liaised with during next phase of the project now that trail designs have been developed.

#### 5.2.3 Taswater

Taswater will be liaised with during the next phase of the project, now that trail design locations are available for review.

#### 5.2.4 Mining and Minerals Tasmania (MMT)

MMT will be liaised with during the next phase of the project, now that trail design locations are available for review. Notably, it is understood that the current trail network is not located within any mining leases.

#### 5.2.5 Destination West Coast (DWC)

DWC will be liaised with during the next phase of the project, now that trail design locations are available for review.

#### 5.2.6 Mountain Heights School

*Dirt Art* has had preliminary consultation with the Mountain Heights School regarding potential integration of the school into the broader trail network. The area immediately adjacent to the school has been extensively investigated, and does not offer strong potential for trail development, largely due to steep slopes and dense vegetation. *Dirt Art*

has removed the initially suggested short trail loop from the school area and instead elected to integrate this loop into the primary trail network. Rationale for this change is below;

- Area proximal to the school is not suitable for trail development.
- The area proposed for development does not suit school age/beginner riders.
- Linking any trail development at the school to the main trail network is problematic, and includes likely traversing through water catchment.
- The trail is too distanced from the town centre to cater for the intended beginner market

Instead of a trail loop concept, *Dirt Art* suggests that a skills trail/park concept is pursued for the school/school area. This concept better suits the beginner/school demographic, while also contributing to the mountain bike experience for visiting riders.

Mountain Heights School will be liaised with during the next stage of the project.

### 5.2.7 West Coast Mountain Bike Club (WCMTBC)

The WCMTBC has recently formed by a group of passionate local riders. The club has an interest in both trail advocacy and racing. Discussions with the club provided concept feedback that they would like to see more riding opportunities not dependent on an uplift service. Based on this feedback, *Dirt Art* has extended the proposed loop trail options to provide a ~10km loop ride from the town centre.

The club will be further consulted now design plans have been developed.

### 5.2.8 Police and Emergency Services

The police and emergency services will be liaised with during the next phase of the project, now that trail design locations are available for review.

### 5.2.9 Business Community

*Dirt Art* has had several discussions with the local business community, the majority of which have been held in confidence due to the nature of the attendees' business plans.

The business community will be further consulted now that design plans have been developed.

### 5.2.10 Community Consultation

Community consultation has been completed based on the draft report for the project. The consultation process delivered a majority of positive feedback with no negative

responses. A number of minor questions were asked during the process, which have and will be addressed by WCC in due course with assistance from *Dirt Art* as required.

## 6 Proposed Development

### 6.1 Overview

Pursuing the development of 'big-mountain' trail riding and descents is recommended as the priority for the project. This type of riding is characterised by ascending and descending wide elevation ranges in mountainous environments. The denuded landscape of Mount Owen also provides the types of experience generally only provided at iconic North American and European riding destinations where elevations are high enough to limit significant vegetation growth.

*Dirt Art* has undertaken a broad investigation of sites before determining that the Mount Owen area offers the strongest development potential for the first stage of establishing the West Coast as a mountain bike destination.

Other sites, specifically the Mount Heemskirk Regional Reserve north of Zeehan and the West Coast Range Regional Reserve area south of Queenstown offer strong potential for developing trail experiences that will complement those developed on Mount Owen and developing big-mountain trail experiences in these areas is recommended in the future.

#### 6.1.1 Location Map

A regional location map can be found over the page.



## 6.2 Trail Head Developments

### 6.2.1 Primary Trail Head

#### 6.2.1.1 Overview

The primary trailhead is proposed at Headly Faulls Park. This location is in the centre of town, and allows for ample parking to facilitate expected visitor numbers. The trail head maximises opportunities for economic benefit, by creating a genuine ride-in and ride-out experience, just 1,200 metres from the functional trail head.

The primary trail head provides most essential amenities required for a primary trail head, including toilet facilities and parking.

### 6.2.2 Proposed New Developments

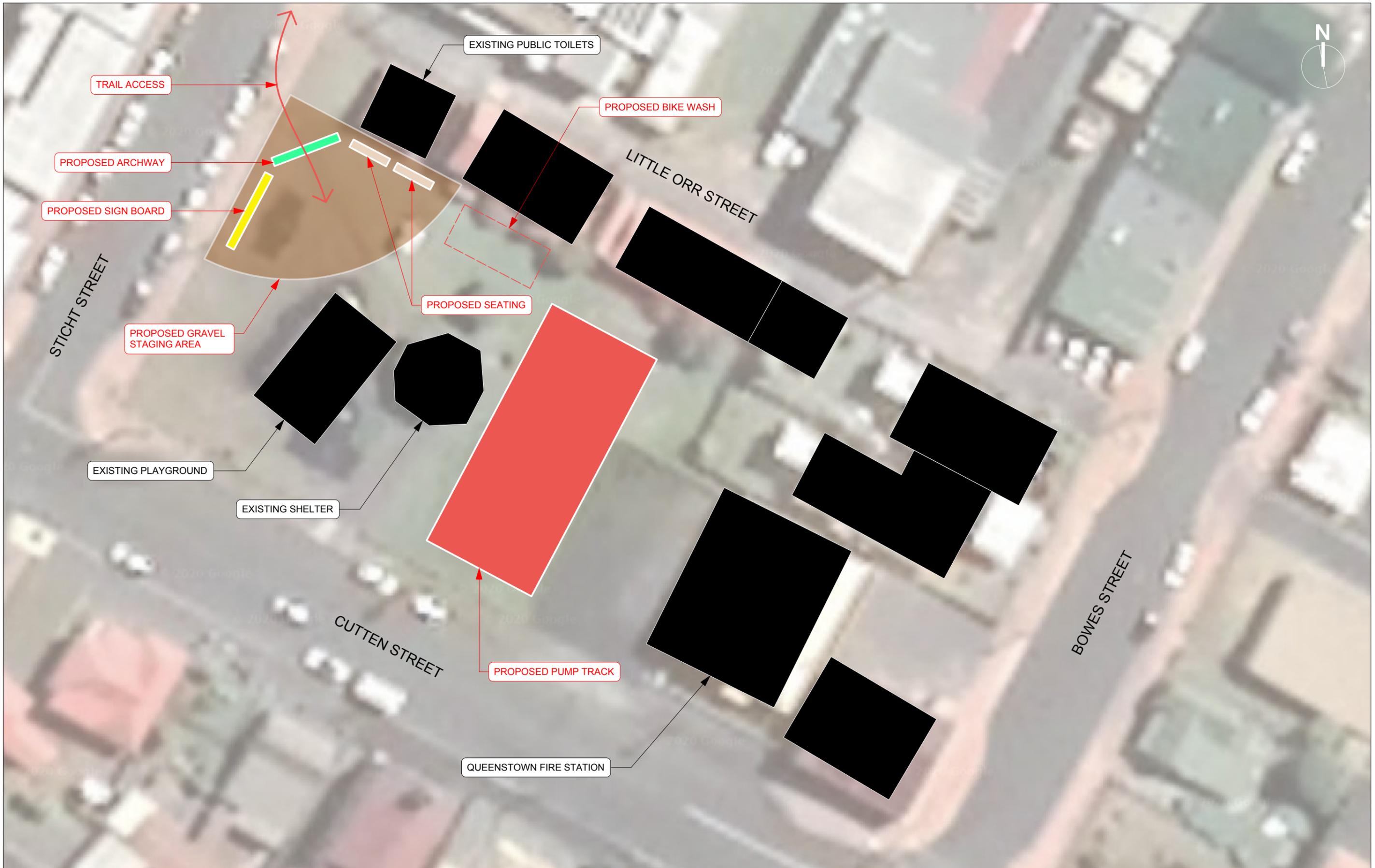
The Primary Trail Head will act as the main entry gateway to the trails for most visiting riders. As such, the area requires the functionality, as well as infrastructure development that brings the mountain bike trails to the centre of town.

*Dirt Art* suggest the following infrastructure development;

- Major sign boards
- Major trail maps
- Trail network entry archway
- Bike stands/parking
- Bike wash (minimum of two wash bays)

A pump track is strongly suggested for the area as a later stage of the project. It is anticipated that the pump track will be funded through a different funding stream, separate from the current project budget.

Design plans for the Primary Trail Head can be found over the page.



## 6.3 Functional Trail Head

### 6.3.1 Overview

The functional trail is the main functional gateway into the trails, where riders first 'hit the dirt' embarking on their ride. The trail network has been designed to provide a single entry and exit trail in this area, simplifying navigation for riders.

*Dirt Art* suggest discouraging parking at this trail head, as such only minor parking areas will be provided, using existing gravel road easements.

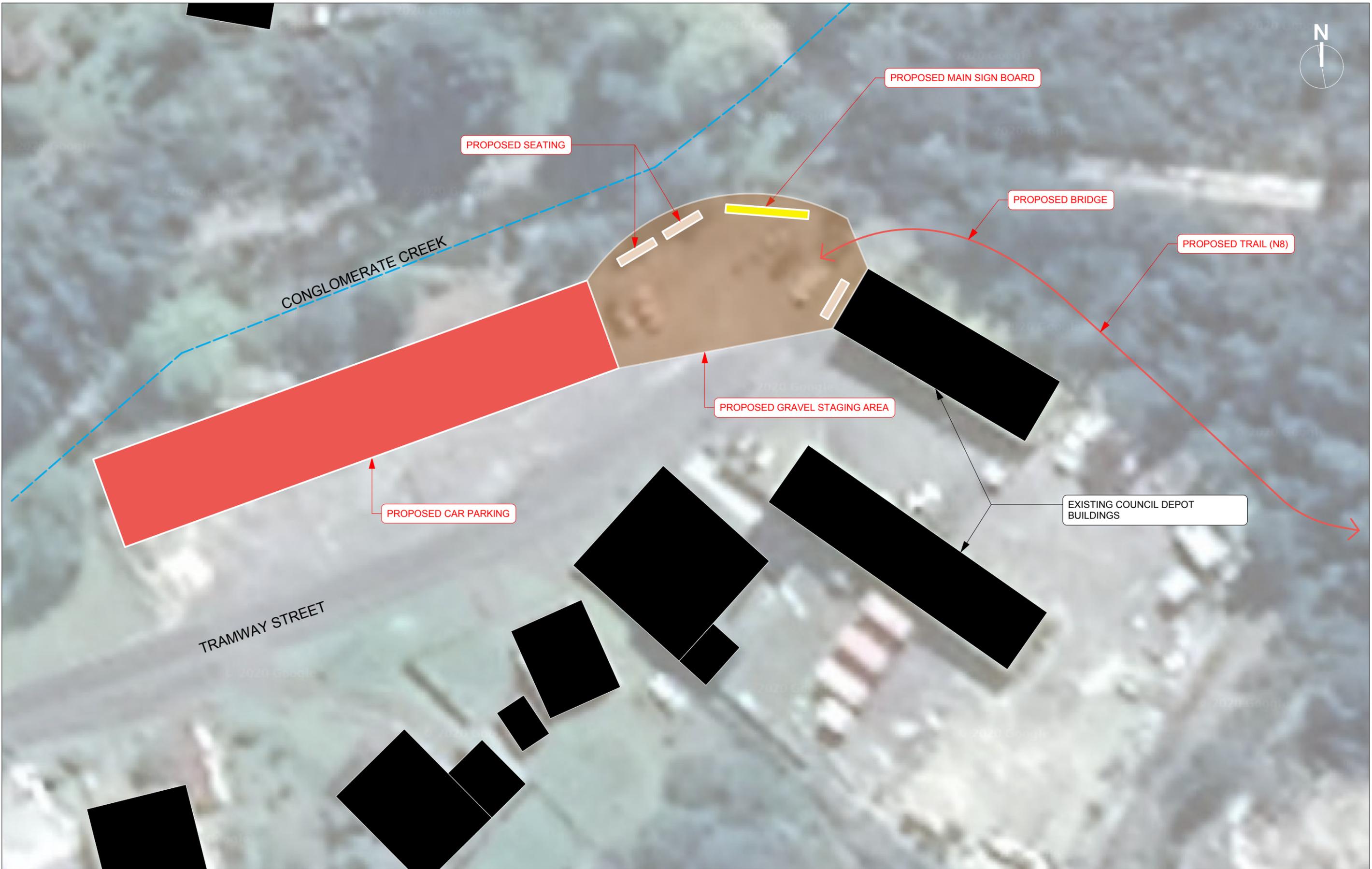
### 6.3.2 Infrastructure Development

Infrastructure development in this area is not extensive, with the main utilities available at the primary trail head, an approach which will further encourage riders to utilise the primary trail head in the town centre. A main sign board and trail maps are suggested along with seating and a small shelter to allow riders to stop and wait for other riders in their group.

Proposed development includes;

- Main sign board
- Bench seating

A design plan for the functional trail head can be found over the page.



### 6.3.3 Summit Trail Head

#### 6.3.3.1 Overview

The summit trail head is essentially located at the top of the primary trail network, providing access into three of the key descending trails. The trail head has been located at a high point that provides incredible, near 360-degree views, while also facilitating descending access into all trails.

The trail head importantly provides a shuttle bus/vehicle turn around and drop off point.

#### 6.3.3.2 Infrastructure Development

Only minor development is proposed in this area, though later stages of the project may benefit from the development of a shelter for riders.

The following key development is proposed;

- Bus turning and parking area
- Main sign boards
- Bench seating

A design plan for the summit trail head can be found over the page.

TO  
QUEENSTOWN

SHUTTLE ROAD



PROPOSED SEATING

PROPOSED MAIN SIGNBOARD

PROPOSED TRAIL (N1)

PROPOSED TRAILHEAD SIGN

PROPOSED TRAIL (N4)

PROPOSED TRAILHEAD SIGN

PROPOSED TURNING CIRCLE



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PROJECT Queenstown MTB Trails  
LOCATION Queenstown TAS  
CLIENT West Coast Council

DWG [Trailhead Concept: Summit]

DRAWN JL SCALE @ A3 1:400 DATE # 21/02/20 REVISION A

DWG # T3

## 6.4 Proposed Trail Network

### 6.4.1 Overview

The proposed trail network includes approximately 35.1km of new trail development, across eight new trails and one trail upgrade. The network is diverse in both its scale and diversity, and features a range of highly-challenging, rugged environments.

The current trail distance will change based on the determination of the detailed construction alignment within the proposed development corridor, which will be completed by the construction contractor.

A trail overview map can be found over the page.

### 6.4.2 Trail Summaries

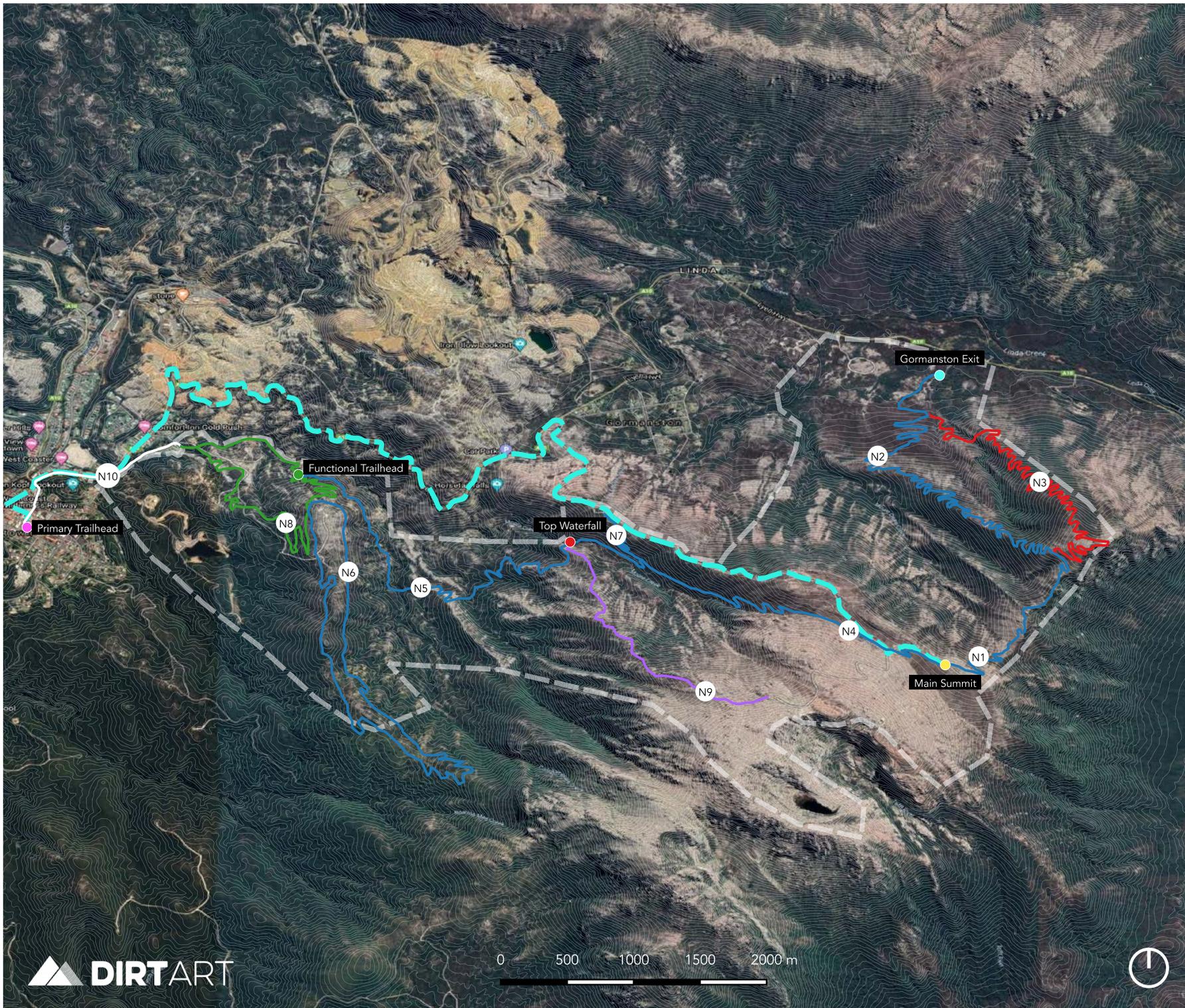
Green Circle	Blue Square	Black Diamond	Double Black Diamond
4,000m	24,700m	4,100m	2,300m
11.4%	70.4%	11.7%	6.5%

The above trail summaries demonstrate strong weighting towards an intermediate to advanced rider audience (82.1% of trails). Notably, most intermediate trails in the network cater to advanced intermediate riders rather than strong beginner riders.

# West Coast MTB Project

## TRAIL CONCEPT PLAN

21.02.20



- Trail Difficult (IMBA)
- Green Circle
  - Blue Square
  - Black Diamond
  - Double Black Diamond

- Proposed Trailheads
- Primary Trailhead
  - Functional Trailhead
  - Summit Trailhead
  - Top Waterfall
  - Gormanston Exit

- Proposed Trails
- N1
  - N2
  - N3
  - N4
  - N5
  - N6
  - N7
  - N8
  - N9
  - N10
  - Shuttle Route
  - Outline\_Mount Owen

### 6.4.3 Trail 1

Length	2,300m
TDRS	Blue Square
Width	600-1,000mm
Target average gradient	7%
Maximum trail gradient	15%
Style	Technical/Flow
Format	Single direction descent
Suggested construction methodology	1.7t excavator
Trail features	Natural rock and mineral earth features
Construction accessibility	Good
Built infrastructure	Nil

Trail 1 is a major link trail, connecting the main summit trail head to the two Gormanston descent trails (N3 and N2). Catering for an intermediate rider level is critical to providing access into the intermediate Gormanston descent trail (N2).

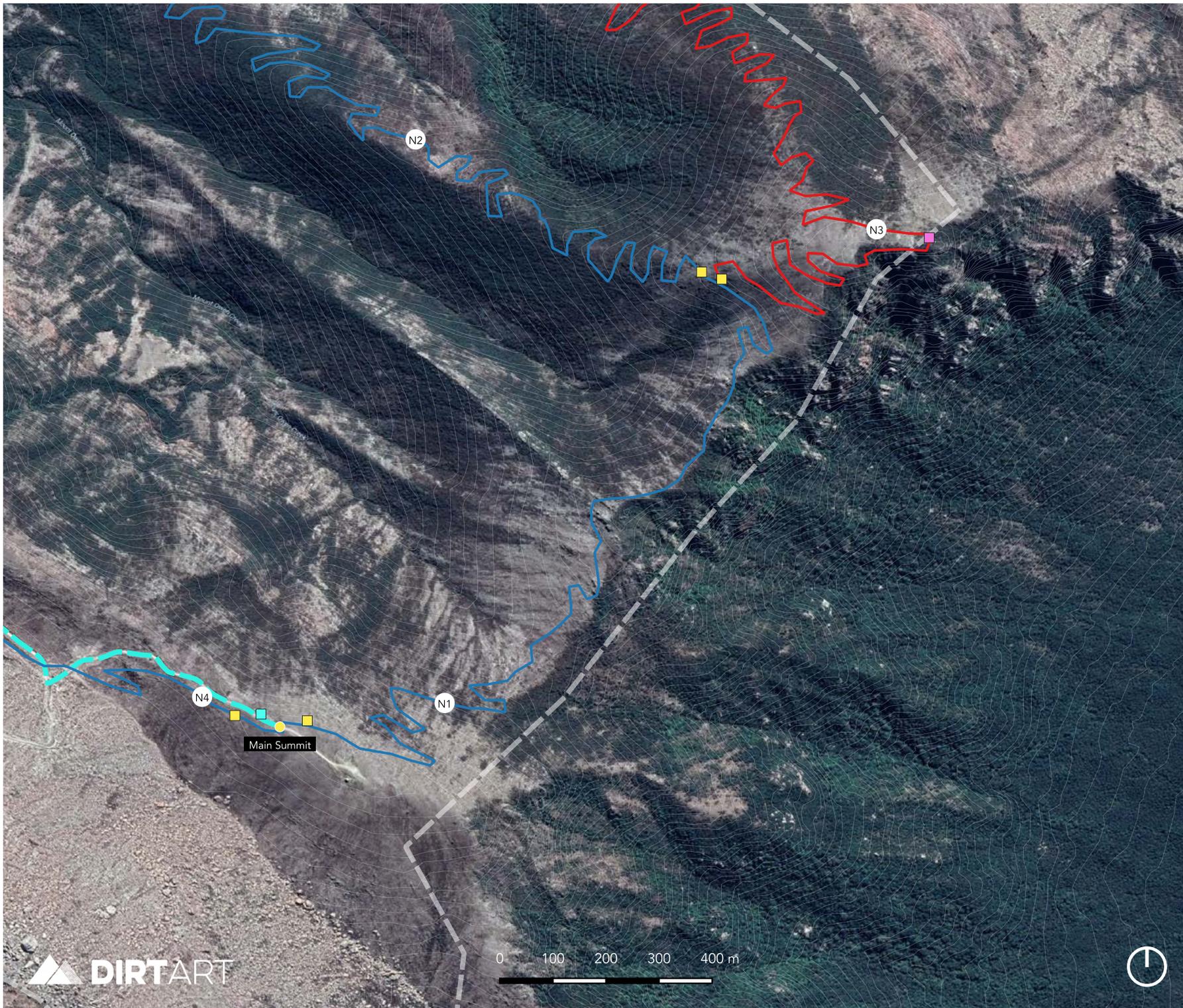
The trail begins with a rocky descent through steep side slopes. While there is predominantly surface rock only, construction will likely unearth larger areas of bed rock that will require alignment changes. The trail is quite exposed, so rider speeds should be contained with corners and the evasion of long descents where riders will pick up speed that is difficult to safely reduce.

A natural, minimalistic build process is envisaged, though catch berms and in-sloping trail sections should be well-developed and substantial enough to provide intermediate riders with the confidence to comfortably ride the trail. Trail features will be minimal on this trail section, with some scope for minor rock features as dictated by the landscape. Jumps and larger terrain features (other than berms and drainage measures) should be avoided given the exposure of the initial descent.

# West Coast MTB Project

## TRAIL (N1) CONCEPT PLAN

24.02.20



### Signage Locations

- Main Signboard
- Trailhead
- Secondary Signboard
- Directional Marker

### Proposed Trailheads

- Primary Trailhead
- Functional Trailhead
- Summit Trailhead
- Top Waterfall
- Gormanston Exit

### Proposed Trails

- N1
- N2
- N3
- N4
- N5
- N6
- N7
- N8
- N9
- N10
- Shuttle Route
- Outline\_Mount Owen

#### 6.4.4 Trail 2

Length	6,200m
TDRS	Blue Square
Width	600-1,000mm
Target average gradient	7%
Maximum gradient	15%
Style	Technical/Flow
Format	Single direction descent
Suggested construction methodology	1.7t excavator
Trail features	Natural rock and mineral earth features
Construction accessibility	Fair
Infrastructure	4m FRP clear span bridge (<1,200mm height)

Trail 2 is one of the hero trails of the project, offering a large descending opportunity on a unique open ridgeline, capable for an intermediate rider level. There are very few trails in the world that cater for this type of experience at a level of safety and accessibility that is capable of hosting intermediate riders. It is expected that this trail will draw substantial attention as the only trail of its type in the Southern Hemisphere.

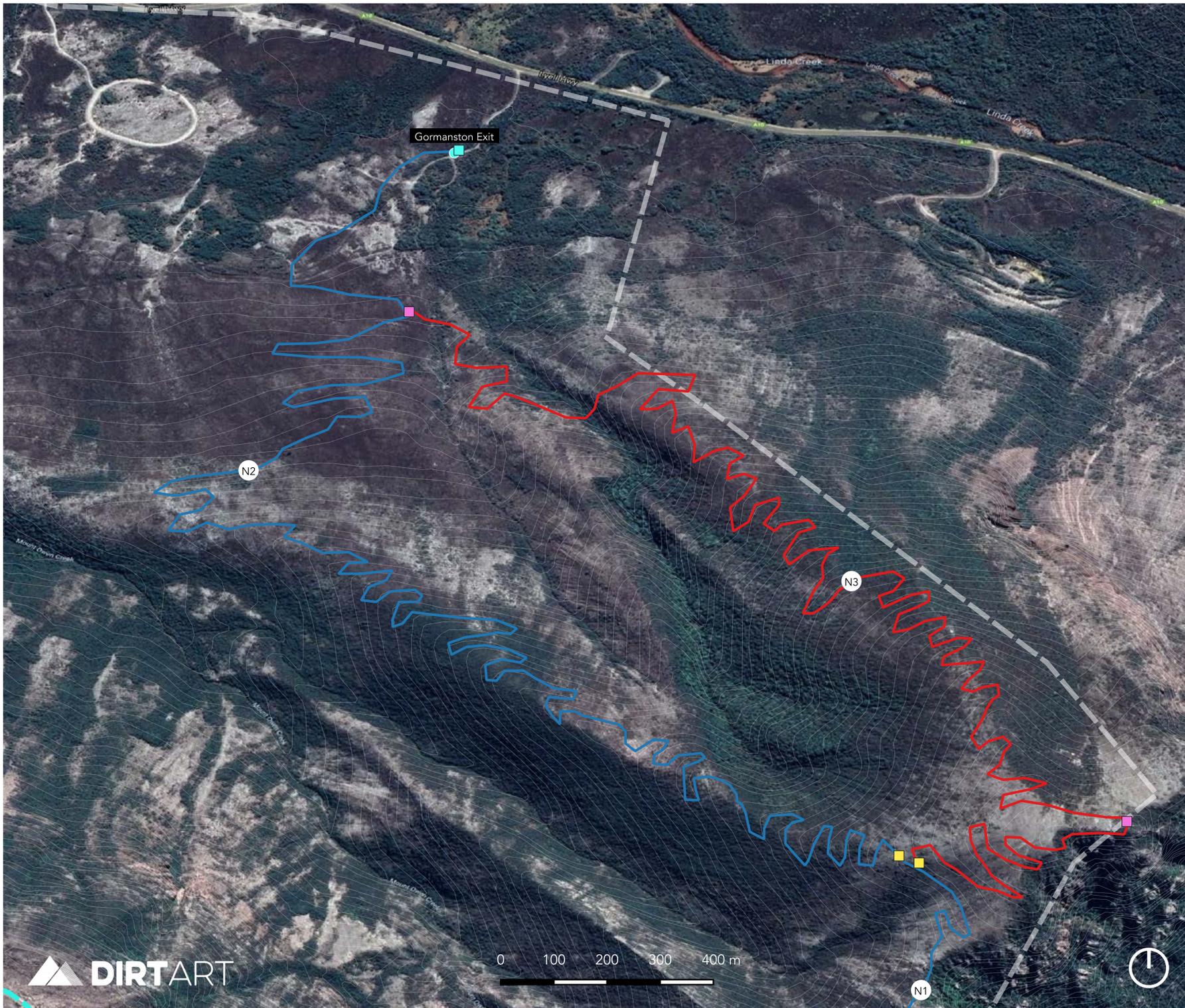
The trail traverses an open, rocky ridgeline, which is largely barren of trees, aside from a short (~100m) section through scrubby bushland. Using the moderate gradient of the ridge, the trail weaves from side to side, maintaining rider speeds and limiting the consequence of any rider accident. Much of the ridge is not particularly exposed, though notably steeper edges should be avoided in the final alignment of the trail. A target average gradient of approximately 7% will maintain an upper level intermediate experience, without heavy braking or unsafe rider speeds.

While not intended to be developed as a flow trail, of all trails in the network, Trail 2 is the most suited to developing a trail with more flow-focused features such as berms and rollers. Notably the geology of the area does not suit the development of genuine flow trails in a traditional sense, though this trail is intended to focus more on berms and rolling terrain than any other trail in the network. Construction access for the mid sections of this trail will be challenging, with likely commute times in the 0.5-1hr range each way in some trail sections, resulting in a potential ~25% lost daily productivity, which must be factored into construction programming and budgeting.

# West Coast MTB Project

## TRAIL (N2) CONCEPT PLAN

24.02.20



### Signage Locations

- Main Signboard
- Trailhead
- Secondary Signboard
- Directional Marker

### Proposed Trailheads

- Primary Trailhead
- Functional Trailhead
- Summit Trailhead
- Top Waterfall
- Gormanston Exit

### Proposed Trails

- N1
- N2
- N3
- N4
- N5
- N6
- N7
- N8
- N9
- N10
- Shuttle Route
- Outline\_Mount Owen

### 6.4.5 Trail 3

Length	4,100m
TDRS	Black Diamond
Width	600-1,000mm
Average gradient	12%
Maximum gradient	25%
Style	Technical
Format	Single direction descent
Suggested construction methodology	Hand build (potential to machine build short sections at start and finish of trail)
Trail features	Technical rock features
Construction accessibility	Fair
Infrastructure	6m clear span FRP bridge + hand rails (dual sided)

Trail 3 is an iconic, highly-technical descending trail suitable for advanced riders. The trail descends a narrow, steep ridgeline, with sweeping views afforded by its complete lack of significant vegetation. The trail provides a dramatic, engaging and challenging riding experience.

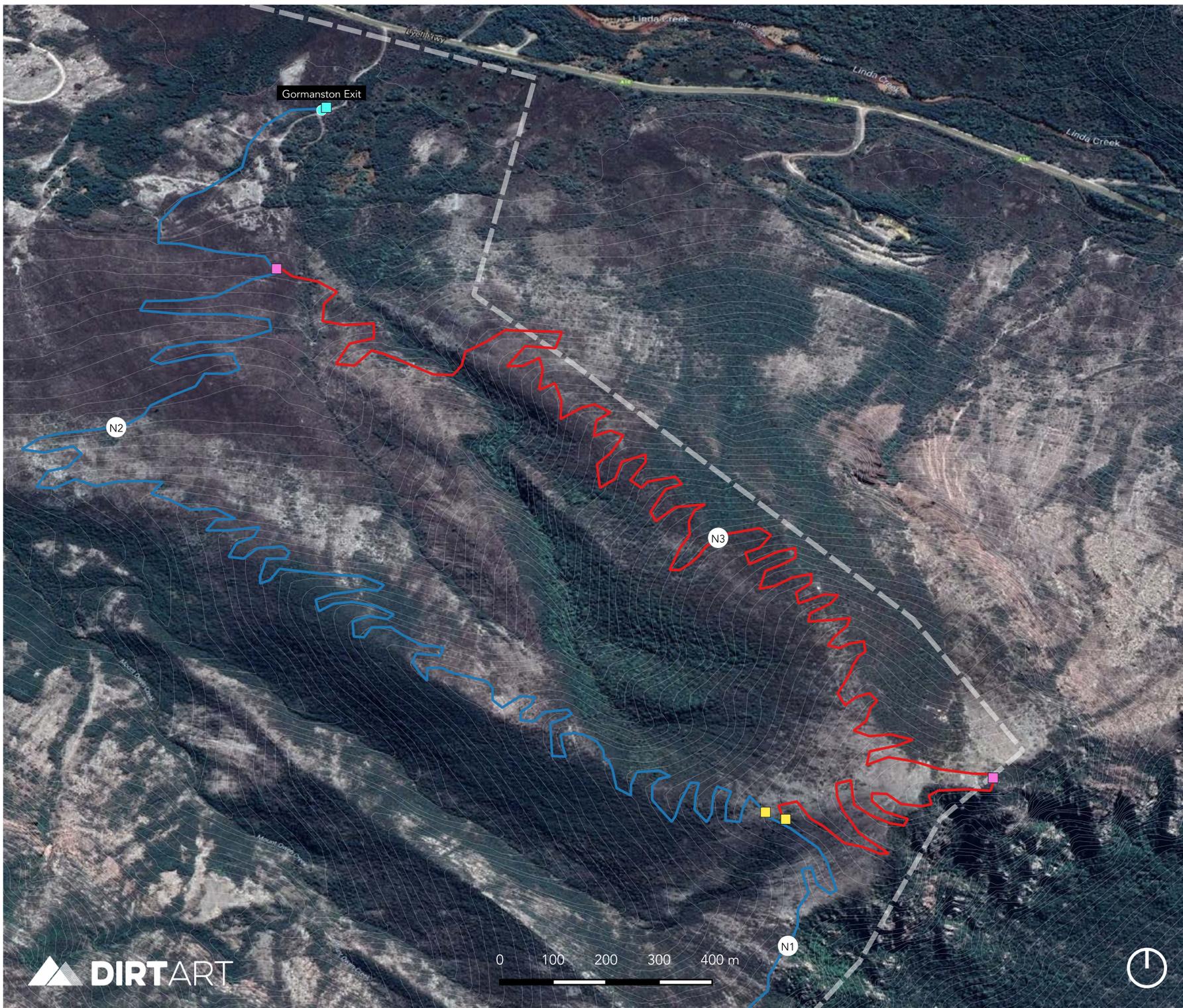
The trail descends through open ridgeline, with extensive surface and sub surface rock. The final construction alignment will weave through rock outcrops, with some potential to utilise larger rock for trail features. The final alignment must carefully constrain rider speeds to reduce consequence considering the exposed location and steeper slopes.

A natural, minimalistic build process is envisaged, though catch berms and in-sloping trail sections should be well-developed and substantial enough to provide intermediate riders with the confidence to comfortably ride the trail. Trail features will be minimal on this trail section, with some scope for minor rock features as dictated by the landscape. Jumps and larger terrain features (other than berms and drainage measures) should be avoided given the exposure of the initial descent. The majority of the trail will require hand building, with potential for machine access to the entry and exit points of the trail. Importantly, the trail is designed as a back country, high elevation riding experience and the final construction methodology must reflect this.

# West Coast MTB Project

## TRAIL (N3) CONCEPT PLAN

24.02.20



### Signage Locations

- Main Signboard
- Trailhead
- Secondary Signboard
- Directional Marker

### Proposed Trailheads

- Primary Trailhead
- Functional Trailhead
- Summit Trailhead
- Top Waterfall
- Gormanston Exit

### Proposed Trails

- N1
- N2
- N3
- N4
- N5
- N6
- N7
- N8
- N9
- N10
- Shuttle Route
- Outline\_Mount Owen

#### 6.4.6 Trail 4

Length	4,600m
TDRS	Blue Square
Width	600-1,000mm
Average gradient	6%
Maximum gradient	15%
Style	Technical/Flow
Format	Single direction descent
Suggested construction methodology	1.7t excavator
Trail features	Natural rock and mineral earth features
Construction accessibility	Fair
Infrastructure	6m FRP bridge clear span

Trail 4 begins at the main summit trail head, before descending steadily but gradually down to the top of Horsetail Falls. The trail travels through a stunning boulder field, before finishing at the top of the falls, where riders can enjoy stunning views across Queenstown.

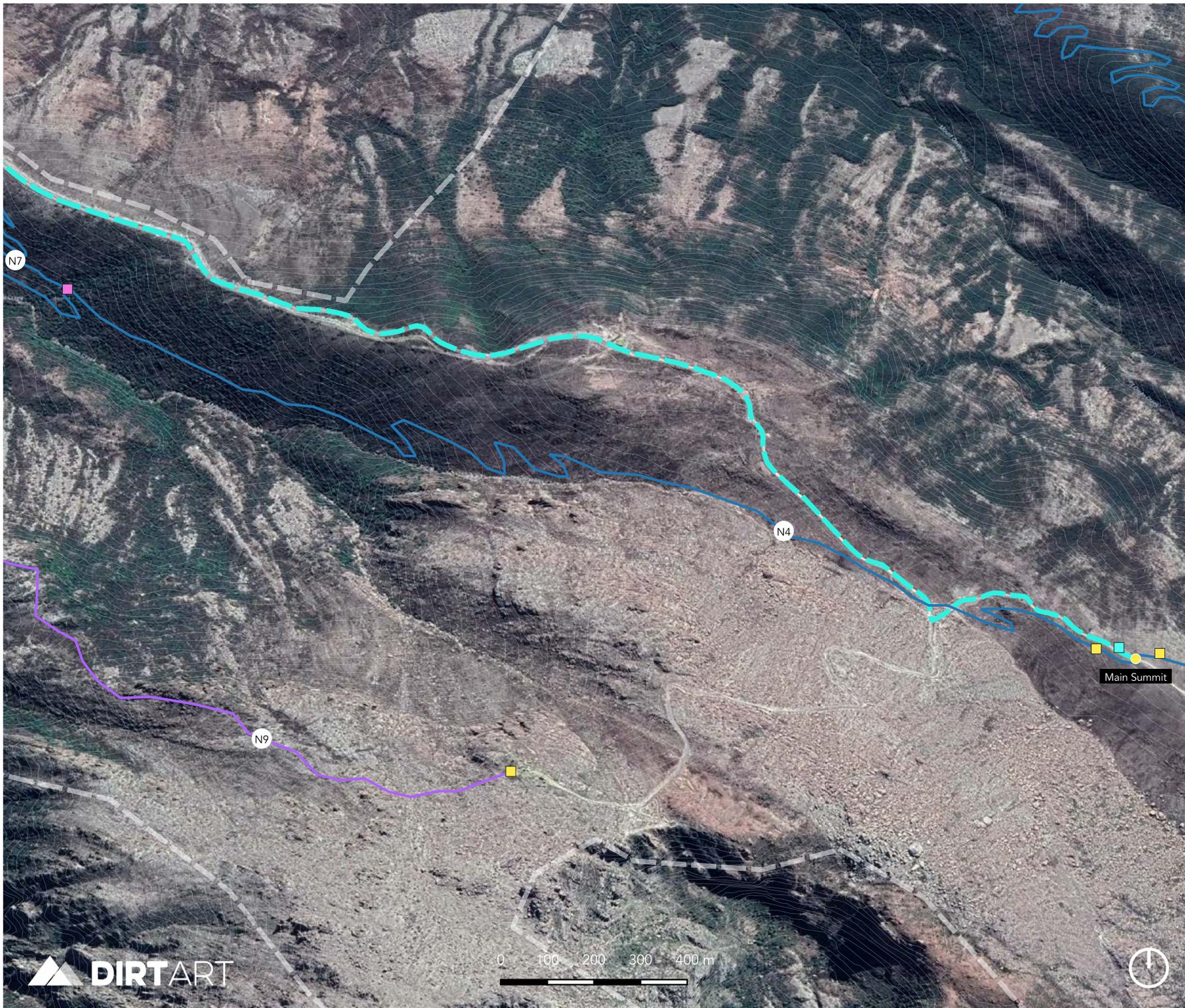
The trail descends through modest slopes, and highly-rocky terrain, with a sustained section shadowing Moores Creek. The trail is mostly nestled in a small valley, offering a unique landscape to other trails in the network. Rider will be required to cross Moores Creek at the top of Horsetail Falls.

The trail will be constructible by excavator, though will involve slow and specialised works moving and placing extensive rock, particularly through the upper and mid sections of the trail. The trail should feature a natural build, with a range of technical trail features. Due to less exposure, there is scope to safely increase rider speeds in places, adding diversity to the trail network. The final construction style should blend natural technical features, with some more heavily excavated features such as berms and rollers.

# West Coast MTB Project

## TRAIL (N4) CONCEPT PLAN

24.02.20



### Signage Locations

- Main Signboard
- Trailhead
- Secondary Signboard
- Directional Marker

### Proposed Trailheads

- Primary Trailhead
- Functional Trailhead
- Summit Trailhead
- Top Waterfall
- Gormanston Exit

### Proposed Trails

- N1
- N2
- N3
- N4
- N5
- N6
- N7
- N8
- N9
- N10
- Shuttle Route
- Outline\_Mount Owen

### 6.4.7 Trail 5

Length	5,300m
TDRS	Blue Square
Width	600-1,000mm
Average gradient	7%
Maximum gradient	15%
Style	Flow/Technical
Format	Single direction descent
Suggested construction methodology	1.7t excavator
Trail features	Natural rock and mineral earth features
Construction accessibility	Poor
Infrastructure	6m FRP bridge clear span 6m FRP bridge clear span

Trail 5 is the extension of Trail 4, providing a descent from the top of Horsetail Falls back down towards Queenstown. The trail provides an iconic riding experience down rugged ridgelines, before descending into a stunning remote valley.

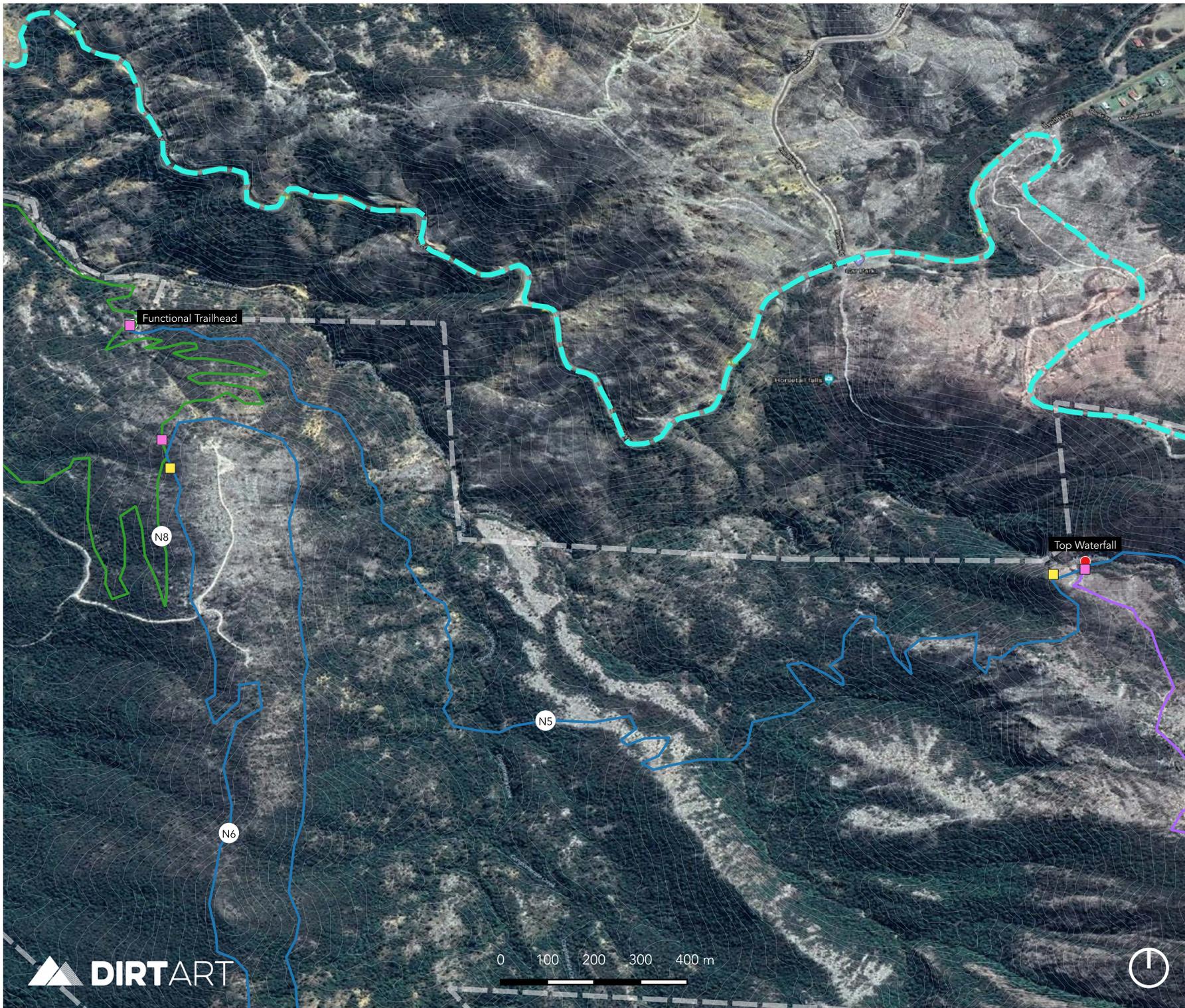
The trail begins with a short climb, before plunging through a boulder field, that will require a complex construction approach including winching large rocks to create a stable trail tread. The mid-section of the trail is a relatively simple area for trail construction, though is notably very challenging to access. Two clear span bridges are required in remote areas, which will require helicopter transportation into the site. The final section of the trail requires very heavy benching into a steep and rocky slope. While this section is workable, it will pose significant construction challenges. The final section of the trail gently descends before merging into the beginner loop trail (N8) to link back into Queenstown, concluding with a stunning traverse along Conglomerate Creek.

The trail will be constructed with a 1.7t excavator, though notably includes some extremely challenging sections through steep slopes and boulder fields. Sub surface rock will largely dictate the final construction corridor. Steeper sections of the trail should work to constrain rider speeds where exposure is high.

# West Coast MTB Project

## TRAIL (N5) CONCEPT PLAN

24.02.20



### Signage Locations

- Main Signboard
- Trailhead
- Secondary Signboard
- Directional Marker

### Proposed Trailheads

- Primary Trailhead
- Functional Trailhead
- Summit Trailhead
- Top Waterfall
- Gormanston Exit

### Proposed Trails

- N1
- N2
- N3
- N4
- N5
- N6
- N7
- N8
- N9
- N10
- Shuttle Route
- Outline\_Mount Owen

#### 6.4.8 Trail 6

Length	5,900m
TDRS	Blue Square
Width	600-1,000mm
Average gradient	NA (loop format)
Maximum gradient	15%
Style	Flow/Technical
Format	Single direction descent
Suggested construction methodology	1.7t excavator
Trail features	Natural rock and mineral earth features
Construction accessibility	Good
Infrastructure	Nil

Trail 6 provides an iconic, intermediate trail loop, which can be ridden from the centre of town, without the need for a road climb or vehicle uplift. The trail straddles a narrow ridgeline, providing a range of viewpoints.

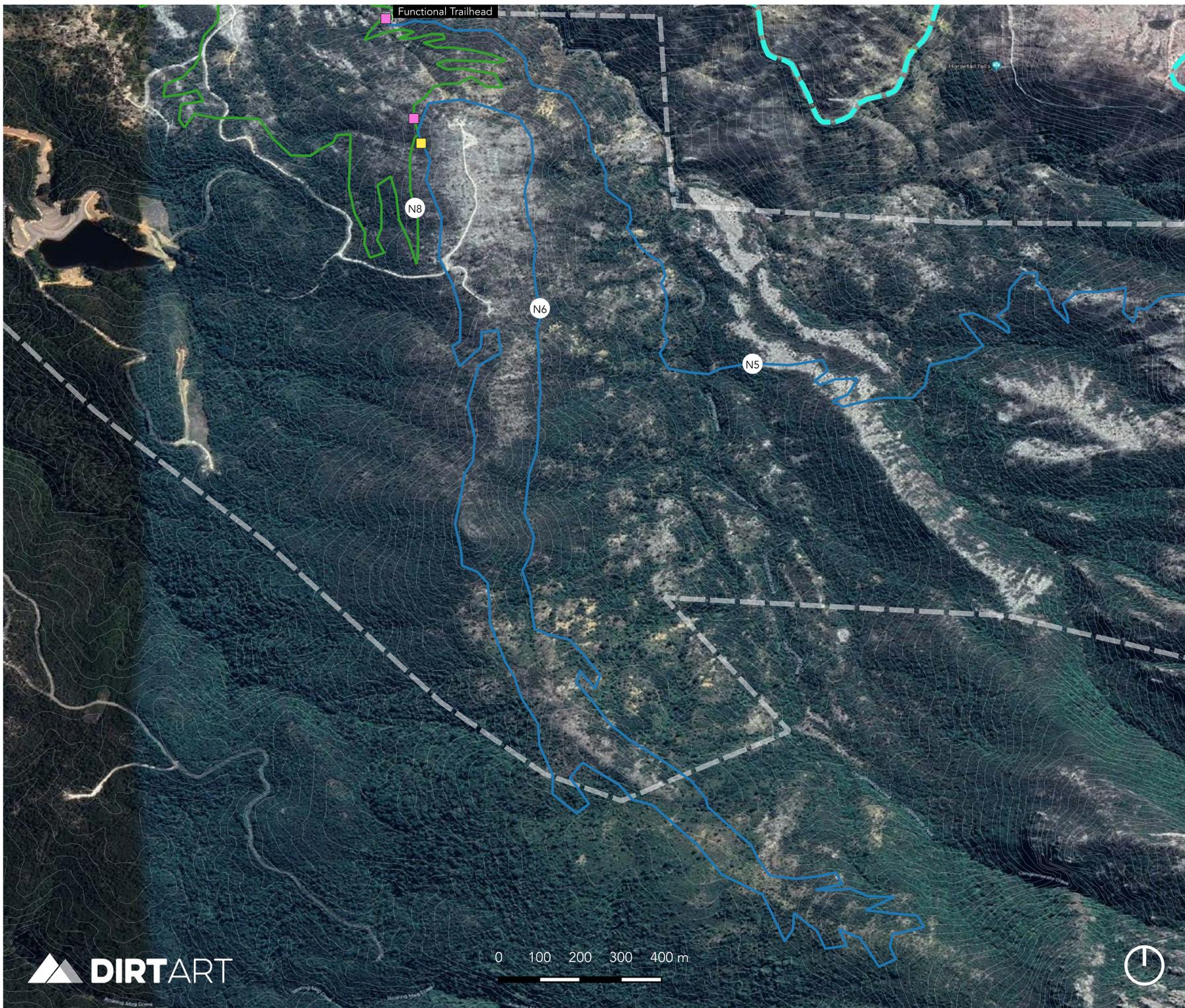
The trail begins with a moderate descent to a natural highpoint, before gradually descending back to complete a loop format ride. The natural terrain in the area affords a range of rock outcrops and potential trail features. The trail is designed to avoid rider awareness of nearby tracks, disturbed areas and roads.

The trail is proposed for excavator construction, and should include a range of technical and flow features. A stronger focus on flow features, with the potential for tabletop jumps in areas is appropriate and encouraged during construction.

# West Coast MTB Project

## TRAIL (N6) CONCEPT PLAN

24.02.20



- Signage Locations
- Main Signboard
  - Trailhead
  - Secondary Signboard
  - Directional Marker

- Proposed Trailheads
- Primary Trailhead
  - Functional Trailhead
  - Summit Trailhead
  - Top Waterfall
  - Gormanston Exit

- Proposed Trails
- N1
  - N2
  - N3
  - N4
  - N5
  - N6
  - N7
  - N8
  - N9
  - N10
  - Shuttle Route
  - Outline\_Mount Owen

#### 6.4.9 Trail 7

Length	400m
TDRS	Blue Square
Width	600-1,000mm
Average gradient	6%
Maximum gradient	12%
Style	Flow/Technical
Format	Single direction descent
Suggested construction methodology	1.7t excavator
Trail features	Natural rock and mineral earth features
Construction accessibility	Good
Infrastructure	Nil

Trail 7 is a shorter link trail which provides lower elevation access into Trail 5. This lower access is useful for less experienced riders, or when weather prohibits higher elevation access. The trail also better facilitates access without an uplift service, making for a relatively short road climb to access Trail 4 and 5. At 562m AMSL (above mean sea level) the high point of the trail is less affected by snow than the summit trail head, providing weather-resistant uplift access.

The trail traverses down a modest slope, which does feature extensive surface and bed rock. Longer traverses limit the need for complex switchbacks, while also simplifying the riding experience.

The trail will be constructed with a 1.7t excavator, and will involve some sections of heavy benching and specialist rock work to retain the tread safely. Sustained steep side slopes increase exposure for riders, and as such rider speeds should be maintained at a modest level.

# West Coast MTB Project

## TRAIL (N7) CONCEPT PLAN

24.02.20



### Signage Locations

- Main Signboard
- Trailhead
- Secondary Signboard
- Directional Marker

### Proposed Trailheads

- Primary Trailhead
- Functional Trailhead
- Summit Trailhead
- Top Waterfall
- Gormanston Exit

### Proposed Trails

- N1
- N2
- N3
- N4
- N5
- N6
- N7
- N8
- N9
- N10
- Shuttle Route
- Outline\_Mount Owen

#### 6.4.10 Trail 8

Length	4,000m
TDRS	Green Circle
Width	1,200-1,500mm
Average gradient	NA (loop format)
Maximum gradient	8%
Style	Flow
Format	Single direction descent
Suggested construction methodology	2.5t excavator
Trail features	Natural rock and mineral earth features
Construction accessibility	Good
Infrastructure	4m FRP bridge clear span

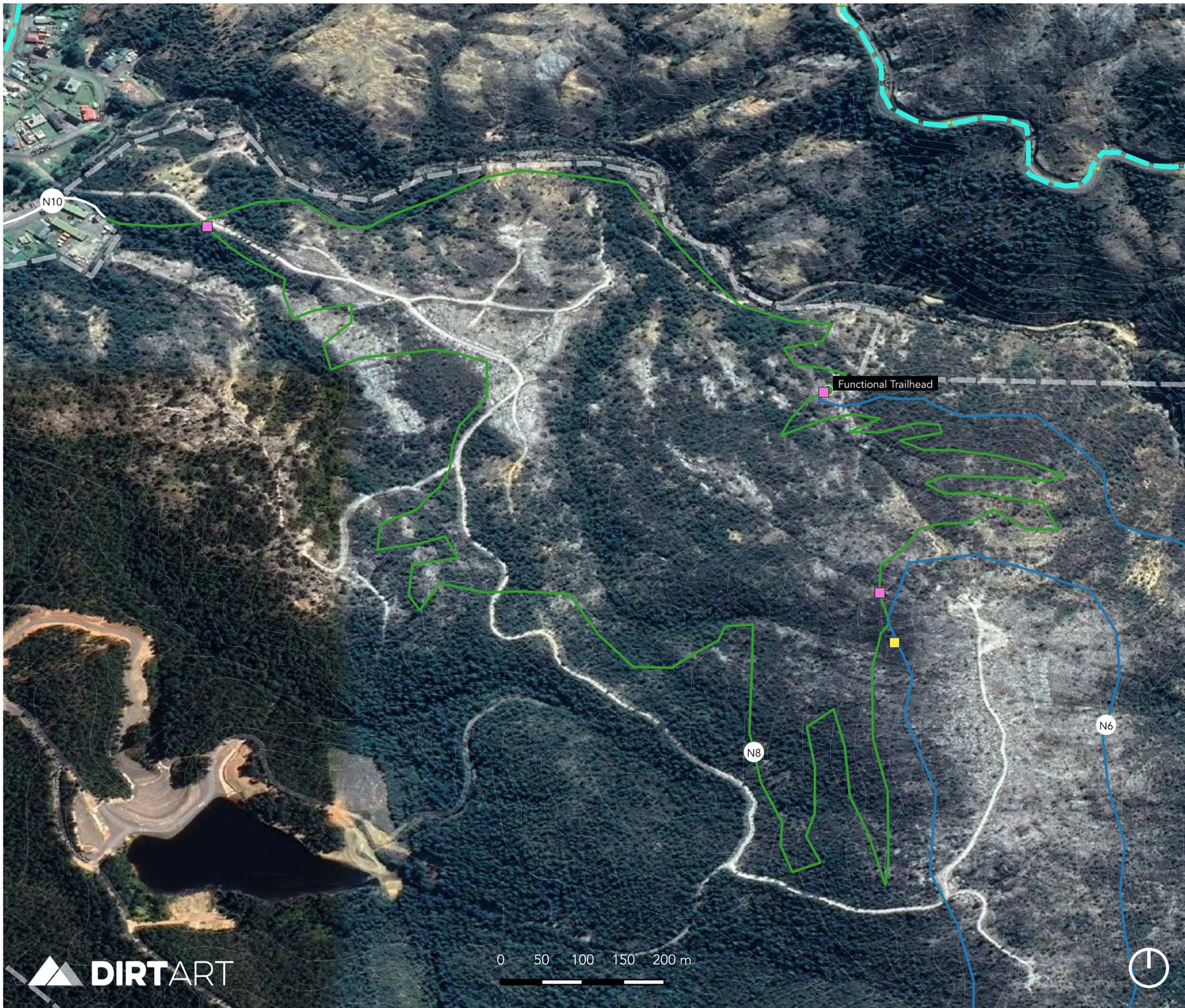
Trail 8 provides a high-quality beginner-friendly mountain bike experience that showcases unique landscapes, river verges and viewpoints. The trail capitalises on approximately 80m vertical elevation, providing a short but enjoyable climb and descent, finishing with a stunning traverse along Conglomerate Creek.

The trail begins with a short, dual directional trail section to cross a deep but short gully, requiring installation of a small bridge. The loop includes a short climb with moderate (3-5% average) gradients, before finishing with a free-flowing descending flow trail. The trail is designed to provide a genuine but gentle introduction to the trail system, suitable for beginner riders. By linking into Trail 7, the trail combines to make a ~10km stacked loop trail system, allowing riders to experience the trails without the need for an uplift or challenging road climb.

# West Coast MTB Project

## TRAIL (N8) CONCEPT PLAN

24.02.20



### Signage Locations

- Main Signboard
- Trailhead
- Secondary Signboard
- Directional Marker

### Proposed Trailheads

- Primary Trailhead
- Functional Trailhead
- Summit Trailhead
- Top Waterfall
- Gormanston Exit

### Proposed Trails

- N1
- N2
- N3
- N4
- N5
- N6
- N7
- N8
- N9
- N10
- Shuttle Route
- Outline\_Mount Owen



#### 6.4.11 Trail 9

Length	2,300m
TDRS	Double Black Diamond
Width	600mm
Average gradient	20%
Maximum gradient	40%
Style	Technical
Format	Single direction descent
Suggested construction methodology	Hand built
Trail features	Natural rock and mineral earth features
Construction accessibility	Fair
Infrastructure	Nil

Trail 9 uses sections of an existing informal walking trail, and offers the most demanding and exposed trail in the network. The trail is essentially rideable now, with some hike-a-bike sections, and some extremely technical, steep chutes. The trail terminates at the top of Horsetail Falls, where riders continue down Trail 5.

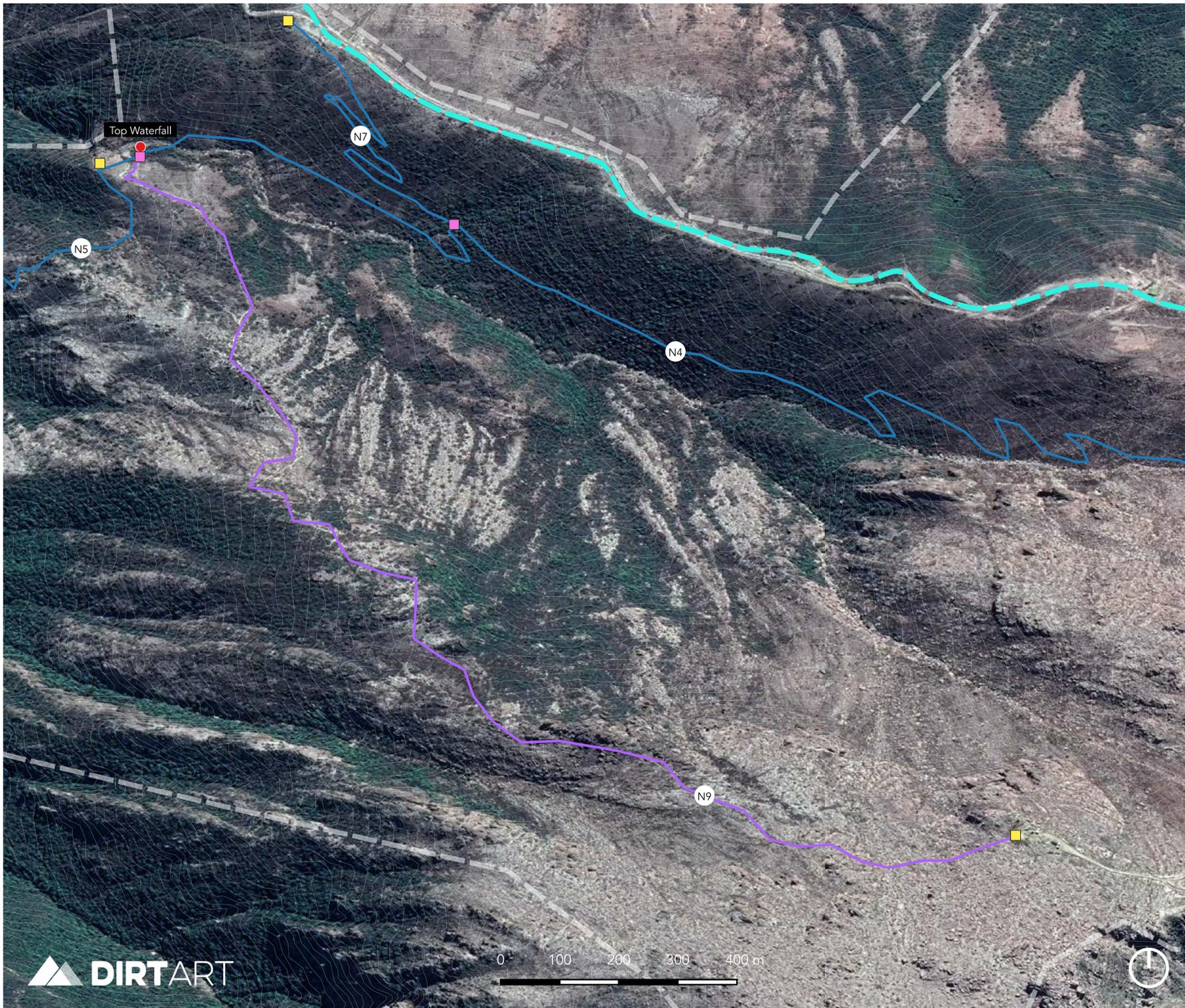
The trail is currently proposed to be accessed via a ride/push up the existing access road. With the demanding and exposed nature of the trail, the challenging access will help restrict riders who do not have the skills to ride the trail. The beginning of the trail is currently a scramble combining hike-a-bike with short rideable sections. The mid-section of the trail is very steep and technical, with some exposed sections. The trail finishes with an open, faster sections with sweeping corners.

Construction of the top and bottom sections of the trail will allow for limited excavator access, with the top section requiring a very complex process of moving and placing extensive large rocks to provide a safe and sustainable riding surface. The trail construction must carefully consider rider speeds, and work to limit speed without detracting from the flow and dynamics of the trail. Rider speeds must be restrained significantly in more exposed areas. While an existing trail, extensive works are required to ensure sustainability and functionality for the desired purpose.

# West Coast MTB Project

## TRAIL (N9) CONCEPT PLAN

24.02.20



### Signage Locations

- Main Signboard
- Trailhead
- Secondary Signboard
- Directional Marker

### Proposed Trailheads

- Primary Trailhead
- Functional Trailhead
- Summit Trailhead
- Top Waterfall
- Gormanston Exit

### Proposed Trails

- N1
- N2
- N3
- N4
- N5
- N6
- N7
- N8
- N9
- N10
- Shuttle Route

Outline\_Mount Owen



## 7 Shuttle and Climbing Access

### 7.1 Overview

The proposed trail network has a strong gravity riding focus, which fits the landscape and key market demands, while also providing the project with a point of difference. Two proposed loop trails (N6 and N8) provide trail riding, without the need for uplift access, which services local needs and broadens the appeal of the trail network for visiting riders. These two trails combine to provide approximately 10km of riding, which is considered sufficient for current local use and less experienced trail riding visitors.

Much of the network is accessed via the Lyell Highway and the current service track to the top of Mount Owen. This access route is intended to service uplift vehicles (commercial only) and rider/push up access. The access track condition is currently poor, with extensive wash outs and very steep sections. While beyond the confines of the current project scope and budget, upgrade works to the road would greatly benefit the trail project.

### 7.2 Shuttle Uplift Access

It is expected that most riders will access the descending trails via commercial uplift services. These services will utilise the existing access track to the summit of Mount Owen. While the current track is quite degraded, it is considered serviceable for this purpose providing appropriate vehicles are utilised (the current road is suitable for 4WD access only).

*Dirt Art* has developed operational management guidelines for commercial uplift operation, which can be found at Appendix 1.

### 7.3 Riding and Push Up Access

While it is expected that many riders will access the trails via an uplift service, the existing access track is also intended to service riding and push-up access. It is expected that this form of access will be most popular with E bikes.

While a climbing access trail was beyond the realms of the current project stage, it is a worthwhile project for future stages. Notably, it is expected that such a trail would require access to mining lease areas.

## 8 Construction Methodology

### 8.1 Overview

The construction of the Mount Owen trail network will require the engagement of a specialist trail contractor, with extensive experience working in remote and challenging environments. The proposed trails are highly exposed and feature a range of novel landscapes. The extensive rock in the area will require specialist rock working skills, including heavy rock works using excavators and winching systems.

Several trail styles are proposed, though notably many of the trails are proposed to feature rugged, natural trail styles. While this style of construction may appear minimalistic and simple, it in fact requires careful management of drainage and trail ride dynamics. The exposed nature of the trails poses a number of potential construction risks (such as machine roll overs), which must be managed by a suitably qualified contractor, operating under specific safety management systems.

Hand building is proposed for some trail sections, which is due in part to the nature of the trail section, but also to ensure there is a diversity and uniqueness to the trail network. Where hand-built sections are developed, the contractor must manage trail dynamics with extensive catch berms and benched areas to reduce rider speed and increase trail user confidence.

### 8.2 Construction Corridor

*Dirt Art* has proposed a 50m construction corridor (25m either side of the designed trail alignment). This corridor allows for the contractor to manage the novelties of the landscape, including extensive surface and sub surface rock.

The contractor will be required to flag the final trail construction alignment within the approved corridor, noting that adjustments will need to be made during construction due to the unique landscape of the site.

### 8.3 Excavator Construction

Excavators will be a viable construction method for a number of trails in the network. Unless otherwise specified, excavators no larger than 1.7t should be utilised. Where utilised, excavators should only be operated by highly-experienced, specialist operators. In some areas machines will require winch tethers and other specialist techniques.

### 8.4 Hand built construction

Several areas in the proposed trail network will only suit hand-built construction techniques. In areas where hand building is undertaken, construction must include

significant catch berms and edges to maintain rider speeds and retain riders on the trail tread.

Hand building teams will be required to frequently move large rocks, which will require the utilisation of a range of specialist stone working techniques including but not limited to winching and aerial skyways. These techniques will require a range of specialist equipment.

## 8.5 Bridges and Platforms

A few small platforms and bridges will be required to address short creek crossings. Maximum spans of 6m will be required. All bridges must meet the below specification;

**Minimum width-** 1,500mm

**Frame construction-** Hot dipped galvanised steel

**Decking-** FRP mesh (20mm mesh type)

**Footings-** Galvanised steel section driven to refusal or plate bolted to rock

**Minimum weight loading-** 2,000kg

**Handrails-** Only required where specified

It should be expected that all platforms/bridges will require helicopter transportation into the site locations.

Preferred bridge designs can be found at Appendix 2.

## 8.6 Helicopter Logistics

It is expected that helicopters will be required to transport bridges and platforms into their respective locations. No other materials transport is expected.

Helicopter operations should be delivered under a comprehensive site-specific management system, with appropriately qualified staff.

Several staging locations are potentially available, all of which are crown land and do not involve trail or road fly-overs.

Notably, the use of helicopter for the project will require approval from the PWS.

## 8.7 Seasonal Construction Considerations

The West Coast is subject to an extremely wet climate through the winter period, which will make for challenging construction particularly during the period of May-August. Snow potentially affects much of the site during winter, particularly above 500m AMSL.

*Dirt Art* suggest that construction will be viable for most the year, with winter focusing on lower elevation trails such as the two loop trails (N6 and N8). If construction is delivered during the winter period, the construction contractor should expect a number of lost days due to extreme weather.

During summer periods, total fire bans may affect the delivery of construction works. Notably, these events are extremely rare in the region, and are thus unlikely to have a significant impact on construction delivery.

## 8.8 Construction Timelines

With adequate resourcing, *Dirt Art* believe the project can be constructed within a 6-month construction timeline.

## 9 Signage Plan

### 9.1 Overview

An effective, visually appealing signage system is fundamental for establishing a safe, functional trail experience for riders. The branding and style guide for the project should be professionally developed by an appropriate design professional.

*Dirt Art* suggest that the production and installation of signage is managed by the trail contractor, who will have the experience and equipment necessary to perform this task in remote areas.

The below summary provides a signage design guide and a signage plan for all proposed signage locations.

### 9.2 Signage Types

#### 9.2.1 Signage Type 1- Primary Trail Head

The primary trail head will feature the largest and most prominent trail sign panels and signage systems. A twin sign system, with two panels with a minimum size of 2,500mm x 1,500mm is proposed. These two panels will provide trail safety and general user information as well as a comprehensive trail map.

Trail signed should be developed on laminated aluminium panels, with UV protected film. The signage should be mounted to galvanised steel posts.

An entry archway should be developed as the main gateways to the trails. *Dirt Art* suggest that the entry archway be locally themed, using recycled local timber or steel.

#### 9.2.2 Signage Type 2- Secondary Trail Head

Secondary trail head signage is smaller than primary trail head signage, though features a similar level of trail information and maps. A single signage panel is proposed with a minimum panel size of 1,200mm x 900mm.

Trail signed should be developed on laminated aluminium panels, with UV protected film. The signage should be mounted to galvanised steel posts.

#### 9.2.3 Signage Type 3- Trail Head

Each trail should have a main sign panel at its entry point. This panel should be mounted on a 200mm width laminated alloy panel. The panel should include the following key information;

- Trail name
- Trail length
- Trail difficulty
- Safety point
- Emergency information

#### 9.2.4 Trail Type 4- Directional/Emergency Marker

Directional markers will be required throughout the network to aid in rider navigation and in the marking of emergency points. These sign panels will generally be mounted to a galvanised 90mm square section post.

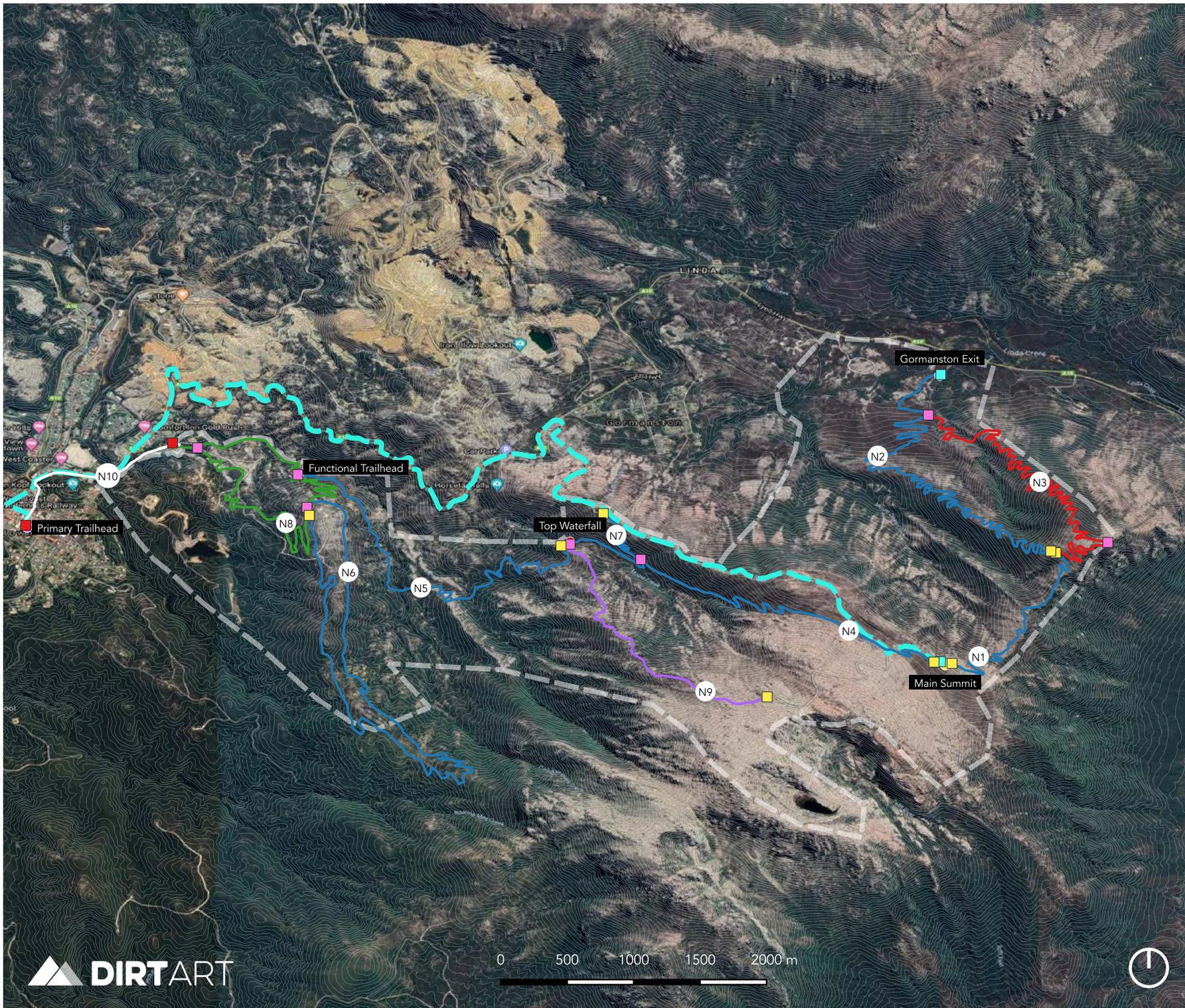
### 9.3 Signage Location Plan

A signage location plan can be found over the page.

# West Coast MTB Project

## SIGNAGE CONCEPT PLAN

21.02.20



### Signage Locations

- Main Signboard
- Trailhead
- Secondary Signboard
- Directional Marker

### Proposed Trailheads

- Primary Trailhead
- Functional Trailhead
- Summit Trailhead
- Top Waterfall
- Gormanston Exit

### Proposed Trails

- N1
- N2
- N3
- N4
- N5
- N6
- N7
- N8
- N9
- N10
- Shuttle Route
- Outline\_Mount Owen

## 10 Implementation Plan

### 10.1 Detailed trail design

The trail designs provided within this report represent a 50m trail construction corridor. It is expected that the construction contractor will develop a final design corridor, and then adjust the corridor as required during construction. The wider construction corridor has been proposed to allow for adjustments required by the highly novel landscape on Mount Owen.

Flagging tape has not been used during this design phase based on the following rationale;

- The final construction corridor will require adjustment during construction for sub surface rock
- There is limited vegetation on which to hang tape through much of the alignments
- The lifespan of the tape is unlikely to extend to the construction period given the climatic conditions on site

The construction contractor will be required to flag the final design corridor prior to commencement of construction, within the approved construction corridors.

### 10.2 Approvals

#### 10.2.1 Parks and Wildlife Service (Reserve Activity Assessment) RAA

All trails in the proposed development reside on PWS-managed land, and as such a Reserve Activity Assessment (RAA) will be required. The specific level of assessment required will be determined by the agency, though given the disturbed, unvegetated landscapes involved, *Dirt Art* would not anticipate a complex RAA will be required.

The RAA process has no statutory approvals timelines, and as such an approvals timeline will be dependent on the prioritisation of the project within the PWS.

#### 10.2.2 Development Application

Given the nature, scale and location of the project and proposed works that compose it, it a development application (DA) will be required.

It may be possible for both the DA and RAA to be run in unison, shortening development approvals timelines. The determination of this approach will rest with the WCC. In this instance, the DA would be approved conditional of an RAA approval.

### 10.2.3 Geotechnical Assessment

All proposed trails fall within areas mapped by the Department of Premier and Cabinet to possess low to medium potential geotechnical risks. A geotechnical assessment may be required as component of the DA assessment process. Given the current scale of the project, it is considered unlikely that geotechnical assessments will be required.

### 10.2.4 Water Catchment Considerations

Taswater will be consulted in the next stage of the project with respects to any impacts the proposed trails in the specified project area may have on existing water catchment areas.

## 10.3 Construction Approach

### 10.3.1 Machine construction where possible

Most modern mountain bike trail construction is undertaken with mini-excavators in the size range of 0.8 to two tonnes. The use of excavators offers significant improvements in efficiency relative to hand-building in most environments.

There are some areas, particularly at higher elevations within the proposed development area on Mount Owen, where it will not be safe or practical to operate machinery. It is considered that establishing trail in these areas will yield experiences of such high quality that the additional cost of hand-building is warranted.

It is recommended that where possible machine construction is pursued, where this does not adversely impact the experience provided by a trail and where it does not substantially impact the character of the development.

### 10.3.2 Hand building at higher elevations

The steep slopes, uncertain soil depths and lack of anchor points to secure machinery at higher elevations will require hand-construction of some trails or sections of trails.

A more natural trail character that minimises the construction footprint and the presence of built technical features is recommended for the proposed trails and aligns well with the use of hand rather than machine construction.

### 10.3.3 Climatic considerations

The occurrence of snow, heavy rainfall, strong winds, low temperatures and low visibility that can be expected, particularly during winter months over the proposed development area on Mount Owen will result in days and potentially months where construction is not safe or practical, particularly at higher elevations.

It is recommended that construction of the proposed trails is scheduled for drier, warmer months and that days where it is still not safe or practical to undertake construction during these periods is anticipated in construction scheduling.

It may be possible to undertake construction at lower elevations during winter months.

## 10.4 Marketing

### 10.4.1 Overview

In an increasingly competitive destination mountain biking marketplace, an effective marketing strategy and implementation are critical to the success of a mountain bike destination. Marketing should focus on developing high quality video and photo content, which showcases the unique landscapes and experiences offered by the project. In the case of this project, content should focus on dramatic view sheds and the rugged and iconic terrain that typifies the West Coast region; a focus that is also consistent with the Tasmania brand. Marketing should embrace the local climate and weather, showcasing the trails being enjoyed in a range of weather conditions.

### 10.4.2 Integration with recent West Coast re-branding

The proposed trail development and the experiences it will provide align completely with the recent award-winning rebranding of the West Coast facilitated by Council and delivered by *For the People*.

The campaign leverages the rugged and wild, natural and cultural landscapes of the area, as well as the stories that have evolved through many years of exploration, industry and experiences. It is recommended that branding of the mountain bike trails is consistent with and even potentially captured within the existing branding due to the extent of the synergies between the proposed trail experiences and the West Coast brand.

### 10.4.3 Existing mountain bike branding

A strong and effective brand and logo is essential for the successful marketing of the project. The current West Coast mountain bike brand does not resonate with the market, does not align with the branding of existing Tasmanian mountain bike destinations and does not provide an effective or appealing overarching brand for the project. *Dirt Art* suggest engagement of a specialist branding agency to re-brand the project consistent with the broader West Coast brand.

#### 10.4.4 Marketing opportunities

Several marketing opportunities are available, noting that as combination of opportunities will likely form the basis of a successful marketing plan for the project. Marketing efforts should focus on;

- Creation of high-quality photo and video content, including construction content
- Social media page for the regional experience
- Social media advertising campaigns
- Influencer visits
- Magazine and media pieces (including video destination showcases)

Given the enthusiast (intermediate-advanced riders) focus, traditional media avenues (such as newspaper and television) are unlikely to be an effective marketing avenue for the project.

#### 10.4.5 Web site

A web site can be a powerful marketing tool, while also providing visitors with valuable navigational and safety information. Following the development, or commitment to develop the trails described in this Strategy, *Dirt Art* suggests that a regionally-focused web site, showcasing trail opportunities throughout the West Coast area should be developed.

There is also potential for the website to document what will be a unique development process, creating anticipation and awareness in the market even before the trails are commissioned.

#### 10.4.6 Marketing budget

*Dirt Art* suggest a year one marketing budget of 2.5% of capital investment (\$25k/\$1m investment).

### 10.5 Suggested Development Budget

#### 10.5.1 Overview

See suggested project budget at Appendix 3.

# 11 Operational Considerations

## 11.1 Management Models

The majority of land proposed for trail development is managed by the Crown Land Services/ the PWS, although notably, the PWS is unlikely to be the ultimate proponent or beneficiary should the trail development proceed.

Generally, in Australia where large-scale trail development is undertaken, the proponent is a local council, who has an access or lease agreement to utilise the land of parks agencies to develop and operate the trail network.

*Dirt Art* suggest that the resulting trails should be managed by a single entity, ensuring consistency and cohesiveness in management, and clear avenues for funding and implementation. For the West Coast Project, this entity will most likely be the West Coast Council. *Dirt Art* also suggest that consideration be given to incorporating the Mount Owen access track into the lease agreement between WCC and PWS.

In most cases an access license agreement would be held for the trail corridors only, typically consisting of a 20m corridor to allow for minor trail alignment changes if required.

## 11.2 Trail Maintenance

Trail maintenance is one of the key operational considerations of any trail destination. In general terms, a high-quality mountain bike destination will require regular maintenance, to ensure trails are maintained to a standard expected by the traveling mountain bike rider. The West Coast project is somewhat unique, with the following key factors relevant;

- The remote and backcountry nature of the trails will result in a lower expectation for a groomed/highly manicured trail surface
- Soils and geology will not allow for a groomed/highly manicured trail surface during construction
- Developing intermediate to advanced trails will reduce the maintenance inputs required to maintain the intended Trail Difficulty Ratings
- A rugged, natural trail surface will be part of the appeal of the West Coast mountain bike products.

*Dirt Art* suggest that volunteer trail maintenance is not usually a viable approach, particularly, as is the case for the West Coast, where there is not a significant local riding community. Most successful mountain bike destinations, including *Blue Derby* and *Maydena Bike Park* rely on paid, professional maintenance teams. It is recommended that this capacity is developed within Council as the proponent of the trail development.

*Dirt Art* suggests a maintenance budget of approximately \$1,500 per kilometer per annum would be appropriate.

## 11.3 Risk and Incident Management

Risk and incident management is a critically important consideration for any mountain bike trail development and should be considered continually throughout the development and construction process. Given the remote nature of many of the trails proposed, a well-considered risk and emergency management plan will be essential for this project.

First and foremost, most the environments proposed for development in this project are not conducive for beginner riders, with harsh and rugged terrain, extreme side slopes and little to no vegetation buffers.

Incidents can be minimised through the following key considerations;

- Predictability in trails
- Low consequence trail features (limited gap jumps, blind drops etc.)
- Appropriate trail difficulty grading
- Appropriate signage
- High-quality trail design and construction

Incidents can be managed through the following key considerations;

- Liaison with emergency services
- Noting of key access routes
- Noting of emergency points on all trails
- Consideration of aerial rescue points

Emergency management services will be consulted with during the next phase of the project.

## 11.4 Event Potential

### 11.4.1 Overview

The proposed trail network offers potential to host a range of different events. Importantly, event offer an effective marketing strategy, as well as providing an event-focused boost to the local economy.

A range of different potential event formats will be explored below.

### 11.4.2 Gravity Enduro

The proposed trail network provides the strongest potential for enduro-focused racing. This racing format is currently one of the biggest racing formats across the world, made popular by its social liaison stages and gravity-focused competitive race stages.

The trail network provides excellent potential for this racing format, as part of a single day race stage, or as part of a regional or state wide enduro stage race (similar to the Trans NZ event- [www.transnz.com](http://www.transnz.com)).

### 11.4.3 Cross Country

While generally not considered a growth discipline, cross country racing remains popular at a local and regional level. The proposed network provides options to host a range of cross country race formats, which may be particularly valuable to the West Coast MTB Club and other Tasmanian mountain bike clubs.

### 11.4.4 Festival/Stage Racing

The unique trail network and proximity to town, make the trail network very suitable for a wide range of multi-day festival and/or stage racing events. Such an event may also utilise other regional mountain bike trails.

### 11.4.5 Industry Events

The unique nature of the proposed trails and the stunning landscape in which they reside provides strong potential for a range of industry events. Events such as product launches and catalogue/content shoots provide significant potential to market to a national and international audience, typically for little to no cost.

## 12 Community and Business Development

### 12.1 Business development forums

It is common in mountain bike destination development for trails and related infrastructure to be developed, and the business and investment community to be left to independently seek out potential opportunities provided by the project. This reactive approach results in a slow business response, and often also results in new and refined business products and services that do not meet the needs and expectations of the market.

*Dirt Art* suggests that business workshops should be hosted as a key project component, to provide new and existing business operators with a comprehensive understanding of the project, the mountain bike market, and the potential opportunities provided by the project.

*Dirt Art* has assisted with one business workshop in Zeehan, and intends to assist with a second such workshop in Queenstown in coming months.

### 12.2 Increasing participation and engagement

The recommended focus of the proposed Strategy is providing intermediate and advanced riders trail experiences in Iconic, often remote or exposed environments. Despite this focus, providing local riders with a more accessible experience of lower difficulty has been proposed as part of this project specifically to foster a local mountain bike culture and develop enthusiasm for the project in the Community.

Providing a small volume (~10km) of trail at the base of the proposed development area and within easy riding distance of Queenstown will provide local riders and particularly schools and children, with the opportunity to easily access trails and develop the competence and interest required to eventually engage with the other trails proposed as part of this Strategy.

It is recommended that in addition to the proposed development consideration is given to establishing a skills area and skills trail separate to the proposed trails (possibly within or adjacent to the Mountain Heights School grounds) that can be used by local riders, school programs and skills clinics to provide further recreational opportunities for community. Such a project is likely to be external to the current project stage and funding.

## 13 Potential Future Concepts

### 13.1 Overview

The initial phase of this project has allowed for a trail development of approximately 35.1km of trail on Mount Owen. *Dirt Art* has also prepared a larger pipeline of additional high-value projects to allow for scaling based on future funding and development opportunities.

Notably, much of the landscape around Queenstown and the broader West Coast is not suitable for trail development. Heavily vegetated areas, and areas with steep side slopes dominate the landscape of the region, making trail development unfeasible in most locations. The locations and project types listed below have aimed to capitalise on areas suitable for the cost-effective development of world-class mountain bike experiences, which are complementary to this and other projects in the broader region.

This future pipeline of projects provides significant opportunity to diversify the West Coast mountain bike experience, through the provision of a range of unique experiences that capitalise on the unique local landscape.

### 13.2 Future Concepts

#### 13.2.1 Conglomerate Creek and Moores Creek Valley Trails

The valley containing Conglomerate and Moores Creeks offers fantastic potential for the development of a network of trail riding loops. Access to the valley is not possible up Conglomerate Creek due to extreme cliff faces on the verge of the creek, and the mining lease overlay of areas of the creek.

*Dirt Art* suggest that there is scope to develop 10-15km of trails in this area, which would be best developed in a stacked loop format. The trails would add to the year-round riding opportunities in the area, and also do not require an uplift service for use.

#### 13.2.2 Heemskirk Regional Reserve

The Heemskirk Reserve is dominated by button grass plains and generally moderate slopes. The area has recently seen the development of the regions first purpose-built, formal mountain bike trail at Oonah Hill. The area is located immediately adjacent to Zeehan, and offers excellent potential for mountain bike trail development.

*Dirt Art* suggests that the area is best suited to the development of a network of long-format, back country trail riding, which showcases the stunning landscape of the area. A stacked loop trail concept would suit the area best, with scope to develop upwards of 50km of trails in areas that provide excellent construction conditions.

### 13.2.3 Back country trail riding with options for overnight routes

Mountain bike focused bike-packing is a concept that has yet to be launched in Australia, though the format has attracted significant attention in New Zealand (including trails such as the Old Ghost Road and the Heaphy Track). The concept would involve a developing a long-format trail or series of connecting trails (80km+), which riders would navigate over multiple days. The trails would access towns allowing riders to utilise existing accommodation providers for 'camps' rather than requiring the development of purpose-built on-trail accommodation or for them to carry camping equipment. Riders would also be able to ride sections of trail that would be high-quality trail experiences in their own right rather than complete the entire route.

The combination of relatively short distances between population centres, existing utility infrastructure that will enable access for design, construction and management, and the rapid transition from urban to remote, wilderness environments makes the West Coast perfectly suited to this style of development.

Where possible, trails would integrate with and complement other trail infrastructure and provide opportunities to utilise existing tourism products and operators to complement and enhance the Mountain bike trail experience.

It is recommended that consideration is given to the development of interconnecting trails that link Tullah, Roseberry, Zeehan and Queenstown.

### 13.2.4 Connection with the Wilderness Railway Trail, King River Rafting or other complementary tourism products

*Dirt Art* believe there is potential to develop a trail experience that is offered as a point-to-point ride between Queenstown and Strahan, with riders returning via the Wilderness Railway. This completely unique and ambitious concept would involve incredible back country riding with an iconic rafting and railway experience.

This trail could depart the proposed Mount Owen development area, travel via Mount Huxley and terminating at the King River. Riders and their bikes would then be transported by raft and train to Strahan or returning to Queenstown.

The area that the trail would pass through is very complex and remote, and would require extensive and costly detailed trail planning to ascertain viability and development costs.

### 13.2.5 Heli-biking concepts

While far outside the confines of the current project, it is worth noting that a heli-biking concept has potential to offer an extremely unique riding opportunity for the region. Popular in New Zealand and North America, heli-biking transports riders to a high point before they descend to a collection point or town.

The concept would require extensive work to secure approvals, and should be championed by a suitable commercial operator to ensure commercial viability.

## 14 Conclusion

The West Coast provides an excellent opportunity to develop a suite of trail experiences that are unrivalled in the Australian mountain bike market. The rugged and iconic West Coast landscapes provide opportunities to create a range of big mountain trail experiences that will have significant appeal for visiting riders, who previously would need to travel to the northern hemisphere to engage in this type of riding.

*Dirt Art* has composed a design plan that offers a world-class suite of mountain bike experiences, including approximately 35.1km of trails. The proposed trail network focuses on an intermediate-advanced rider market, who are the primary demographic in the destination mountain bike market. Trails have focused on providing longer format descents, which capitalise on unique the landscapes, views and terrain of the area.

The proposed trail network has been located in areas conducive to high-quality, cost-effective construction, avoiding low-lying, wet areas and areas featuring dense vegetation. These characteristics will ensure ongoing maintenance costs are minimised, while creating as suite of trail experiences that are functional in most weather conditions.

A strong focus has been placed on economic development, with all trails essentially terminating within Queenstown, and enough trail proposed to encourage multi-day visits. Due to the uplift/gravity nature of the trails, there also exists significant business development opportunity for shuttle bus uplift provision.

The proposed trail network offers a significant opportunity to develop a suite of mountain bike experiences that genuinely capture international attention. The rugged, big mountain landscapes will provide a level of content that will undoubtedly grace photos and videos that reach a genuinely international audience. For a relatively low development cost, the proposed trails fill a void in the growing suite of Tasmanian mountain bike experiences and will play a significant role in the growing push towards showcasing Tasmania as one of the world's great mountain bike destinations.

## 15 Appendix 1- Uplift Provider Management Plan



MTB Uplift Provider Management- Queenstown MTB Project

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## 1 Overview

Uplift-assisted mountain biking has been growing in popularity across the past several years, fed by a growing volume of suitable trail product, bike technology advances, and rapidly growing rider demand. Commercial uplift-assisted riding in Tasmania began with the launch of the Hollybank MTB Park, and has grown continually with the development of suitable trails at Derby and the Maydena Bike Park.

Generally provided by the commercial sector, uplifting comes in a variety of styles. Within Tasmania this service is provided by vehicles rather than a chairlift or gondola, with vehicles in use including; 20 seat buses, 14 seat buses, troop carriers and side-by-side ATV vehicles.

While not all riders will wish to utilise uplift services, there is no doubt that these services add significant appeal to mountain bike destinations.

The mountain bike trail project at Queenstown includes a number of trails that cater well to the provision of an uplift service. This document will provide an overview of the uplift service opportunity, and will include a number of recommendations for managing this service.

## 2 Trail Product

The trail network at Queenstown provides potential to access four key descending trails, each offering 500+m of vertical elevation. These trails may be accessed via a climb up service tracks and the Lyell Highway, though this access method will not appeal to many riders.

It is expected that the nature of the network and the trail style on offer will result in strong demand for a commercial uplift service in Queenstown.

## 3 Uplift Route

The uplift route for the trails utilises a public road (Lyell Highway), before continuing on a steep access track under Tasmanian Parks and Wildlife Service (PWS) gated management. The access track portion of the road is steep, and in places in poor condition, and is suitable for 4WD access only. There are limited passing opportunities on the track, and steep side slopes are potentially extremely dangerous if a vehicle were to leave the main road route.

While an upgrade to this access track is beyond the confines of the current project and budget, such an upgrade would be highly-beneficial for the project.

A map showing the uplift route can be found over the page.

## 4 Managing Road Access

### 4.1 Overview

*Dirt Art* strongly suggest that the access track portion of the road is managed as a commercial operator-only road. Public access cannot safely be managed on the current track, and such access poses significant operational issues for all road users, while also risking infrastructure on the site. Public access would also place additional wear on the road, which is already in poor condition.

### 4.2 Selecting Providers

*Dirt Art* suggest that the provision of uplift services be offered via an open tender/EOI process. The process should aim to select 2-3 operators, as notably a single provider risks the continuity of the operation, and too many operators reduces commercial viability and makes for a more challenging road management system.

It is suggested that operators must agree to comply with the following minimum requirements;

- Commit to provide continuous service (definition of continuous to be negotiated with providers)
- Commit to minimum vehicle standards (4WD-only)
- Show experience managing a similar operation type, or have strong aptitude for running such a service
- Commit to the adherence with the traffic management plan for the operation (to be developed in due course)
- Holds or commits to attain all required permits (PPV vehicle permit, PWS permits etc.)
- Holds the minimum required insurances (to be determined)
- Commits to utilise a common waiver (preferably to be provided by WCC for consistency)
- Commitment to have one driver each day minimum as a trained first aid provider

Once selected as a provider, operators must supply all required documentation, licenses and insurances to WCC. All providers must be inducted and provide all required documentation before commencing operation.

Once approved as an operator, *Dirt Art* suggest that the WCC supplies providers with consistent vehicle branding to clearly convey their status as an approved uplift provider.

## 4.3 Managing Providers

### 4.3.1 Traffic Management Plan

*Dirt Art* suggest that all operators must operate under a site-specific traffic management plan (TMP). The TMP must include vehicle movement, communication, passing and general safety standards. The TMP will be a comprehensive management document, which all operators must be inducted into.

The TMP should be developed by an appropriately qualified and experienced consultant.

### 4.3.2 Permits and General Compliance

The WCC must develop and utilise a system which stores and maintains a current database of all provider certifications, insurances and licenses. The system must be able to manage ongoing compliance across all key compliance areas.

### 4.3.3 Operator Fees

Given the expected scale of the operation, it is likely unfeasible to levy providers with any significant up-front fees. Such fees will also dissuade operators from embracing the project. Instead, it is suggested that providers pay the WCC an ongoing levy, each customer they uplift. The advantage of this model is that the fee is unlikely to be noticeable to the consumer, while the overall return to assist with trail management is likely to be substantial.

*Dirt Art* suggest that fees in the region of \$1-2.00 per uplifted rider will be reasonable, balancing the cost impact to riders with the need to effectively manage road and trail maintenance.

### 4.3.4 Consumer Fees

While *Dirt Art* do not suggest that WCC set rider uplift fees for commercial providers, there is some advantage in setting a fee range for providers. Setting a fee range ensures that the service will meet market standards, while reducing aggressive price competitiveness that is likely to reduce service standards.

*Dirt Art* suggest that the likely market range for single uplift fees would be \$20-40/uplift lap.

#### 4.3.5 Road Leasing and Licensing

*Dirt Art* suggest that consideration be given to including the road in the lease agreement between the PWS and WCC. Such an inclusion potentially streamlines operation for both parties, allowing WCC a clear responsibility to management road, while also allowing for fees to be charged for commercial access to the road beyond the normal PWS fee structure.

#### 4.3.6 Benefits to providers

Providers should be provided a range of benefits in exchange for their commitment to operating levies and procedures. These benefits may include such things as;

- Approved provider branding
- Placement on the destination web site
- Promotion through key marketing opportunities
- Promotion through key channels

## 5 Conclusion

The management of commercial providers should be a centrally coordinated process that uses a system that will ultimately provide consistency, safety and quality to the visiting rider, while maintaining a sustainable financial model for ongoing trail and facility management for the WCC.

The recommendations made within this report are not intended as a management system, rather to provide the basis for the development of such a system. *Dirt Art* recommend that that the WCC work to develop a formal framework for managing providers, which will eventually take form as a dedicated management system.

Insert uplift provider plan

## 16 Appendix 2 – Bridge and Platform Design Plans

**This document is available in the internal report version only.**

## 17 Appendix 3- Project Budget

**This document is available in the internal report version only.**

## 18 Appendix 4- Draft Tender Pricing Schedule

**This document is available in the internal report version only.**