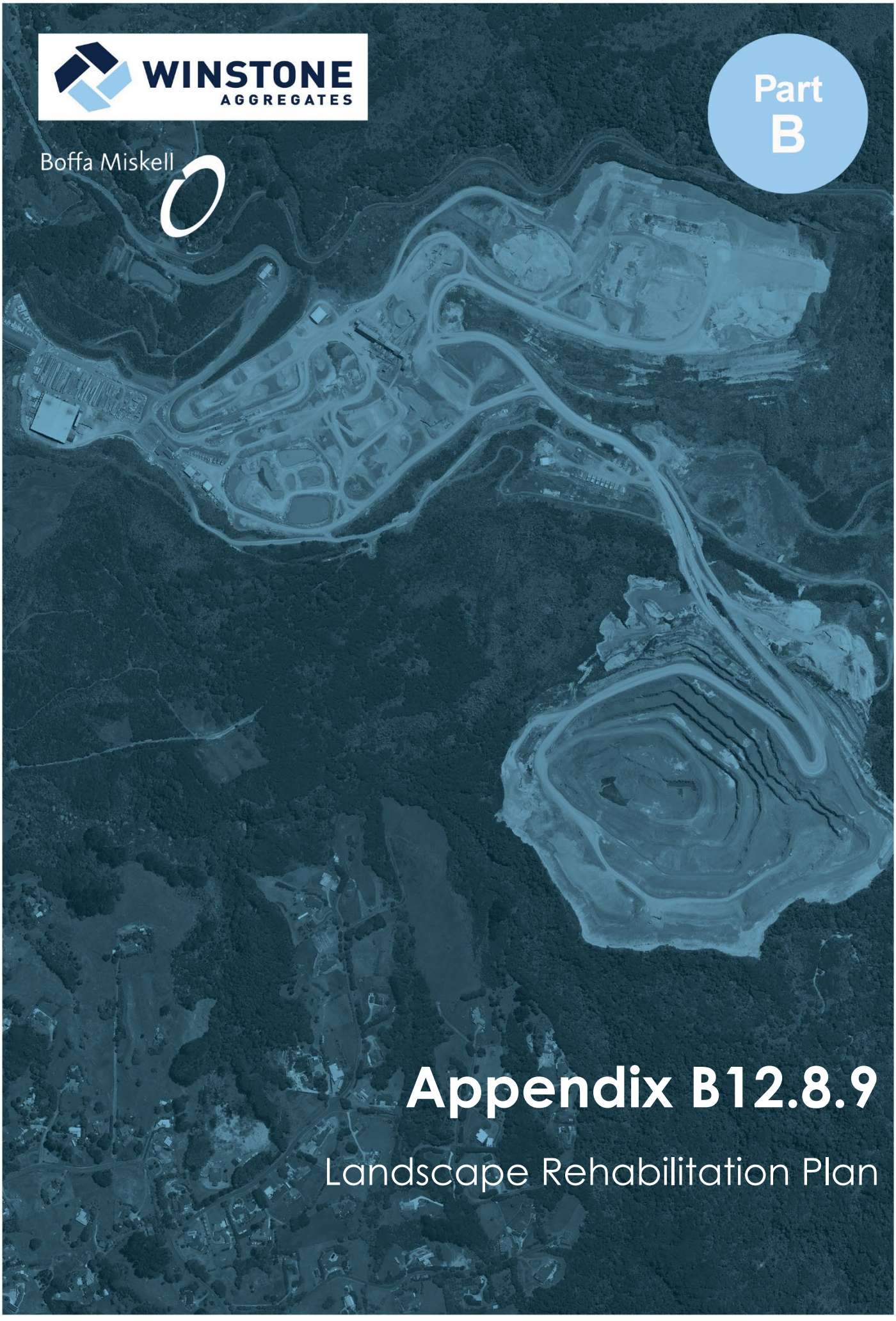

Appendix B12.8.9

Landscape Rehabilitation Plan

Boffa Miskell

APPENDIX 6

HUNUA QUARRY DEVELOPMENT
LANDSCAPE REHABILITATION STRATEGY AND MANAGEMENT PLAN

17 MARCH 2026

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Final Issue	17/03/2026			

APPROVED FOR ISSUE:
John Goodwin | Landscape Architect | Consulting Partner | 17 March 2026

RELEASE AND RELIANCE

This report has been prepared by Boffa Miskell Limited on the instructions of our Client, in accordance with the agreed scope of work. If it is intended to support an application under the Fast-track Approvals Act 2024, it may be relied upon by the Expert Panel and relevant administering agencies for the purposes of assessing the application.

While Boffa Miskell Limited has exercised due care in preparing this report, it does not accept liability for any use of the report beyond its intended purpose. Where information has been supplied by the Client or obtained from external sources, it has been assumed to be accurate unless otherwise stated.

Project number: BM250939

File ref: BM250939_Final_Hunua_Quarry_Landscape_Rehabilitation_Plans_20260317

Cover photograph: View of Symonds Hill Pit, © BML, 2025.

CONTENTS

1.0
INTRODUCTION

1.0 INTRODUCTION

SCOPE AND PURPOSE

The Landscape Rehabilitation Strategy and Management Plan (LRSMP) sets out the landscape measures necessary to manage identified adverse effects and inform outcomes secured via consent conditions. The LRSMP shall be read in conjunction with the following management plans:

- Mangapū Stream Tributary Realignment Management Plan, prepared by Boffa Miskell, dated March 2026.
- Ecology Management Plan, prepared by Boffa Miskell, dated March 2026.
- Pest Management Plan: Hunua Quarry Long-Term Development, prepared by Boffa Miskell, dated March 2026.

OBJECTIVE

The objective of the LRSMP is to provide detailed information regarding landscape mitigation planting and the establishment and ongoing monitoring and maintenance of rehabilitation works associated with the development of the Symonds Hill Pit.

Rehabilitation of quarry extraction areas is, by its nature, a long term and iterative process. The extent of landform modification, combined with the variability of geological conditions encountered as extraction progresses, means that a degree of trial and refinement is unavoidable in determining the most effective rehabilitation solutions for each part of the Site. Because the final landform for any given area can only be confirmed once extraction is complete, it is not feasible to prepare a fully developed rehabilitation plan prior to consent. Nevertheless, the underlying concepts, design principles, and best practice approaches have been prepared for the quarry development area based on the proposed staging and timing of the extraction works. These will be refined as each stage progresses through vegetation removal, earthworks and overburden removal and disposal and aggregate extraction.

This document establishes the overarching objectives and outlines the processes required to achieve successful post extraction rehabilitation. It provides the framework and guiding principles for the development of more detailed rehabilitation plans and demonstrates that the proposed approach aligns with the Conditions of Consent and is operationally achievable.

For clarity, the term rehabilitation is used throughout this document rather than restoration. Restoration implies returning the land to its pre-extraction condition, which is not possible given the extractive nature of quarrying, where vegetation is clear-felled and landform and slopes are permanently altered. However, rehabilitation can create new landforms and vegetation patterns that are consistent with the broader landscape and that are engineered to support and sustain ecological values comparable to those present prior to extraction.

LANDSCAPE PURPOSE

The landscape purpose of the LRSMP is to:

- Mitigate the landscape, natural character, and visual effects associated with the proposed quarry development area, particularly in relation to the values of the ONL, views from surrounding properties, and to integrate the quarry activity within the surrounding rural working environment.

The overarching intent is to ensure that landscape character and values are appropriately mitigated and rehabilitated through a phased approach, which aligns with the staging of the quarry programme through planting and landform treatment.

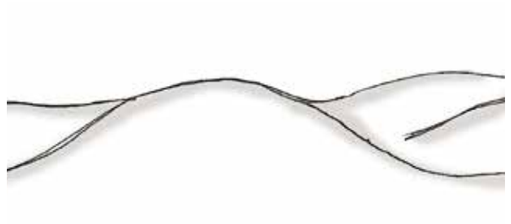
Key landscape considerations include:

- **Mangapū Stream Tributary realignment**: Approximately 941m of the existing Mangapū Stream Tributary will be removed, and a new 500m alignment will be constructed as part of Stage 1 to enable the quarry development. Construction of the new stream alignment will require a temporary bridge within the ONL, which is anticipated to be in place for approximately five years to provide access to the construction area.
- **Vegetation clearance of the ONL**: Progressive removal of approximately 38.2ha of indigenous and exotic vegetation, with native planting implemented in advance of clearance.
- **Landform modification**: Several notable ridges and gully systems will be removed or altered within the Project footprint, notably within the ONL as part of Stage 1.
- **Western Haul Road construction**: A new western haul road will be constructed, requiring earthworks, culverts, and batter stabilisation as part of Stage 2. It will then be realigned westward as part of Stage 7 as this area is progressively quarried.
- **Overburden Disposal Areas**: Expansion of OBDA capacity is proposed to accommodate 24 million m³ of overburden over the life of the quarry. Rehabilitation of the Hunua Pit OBDA will involve landform contouring and native planting to restore landscape character. The Symonds Hill Pit OBDA will be progressively hydroseeded as areas become available.

1.0 INTRODUCTION

DESIGN PRINCIPLES

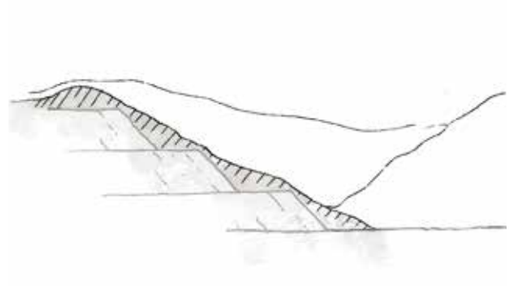
PRINCIPLES OF LANDSCAPE MITIGATION AND REHABILITATION



PROTECT THE INTEGRITY OF THE OUTSTANDING NATURAL LANDSCAPE (ONL) AND SIGNIFICANT ECOLOGICAL AREAS

Preserve the visual integrity of the Outstanding Natural Landscape and ecological function of the Significant Ecological Areas.

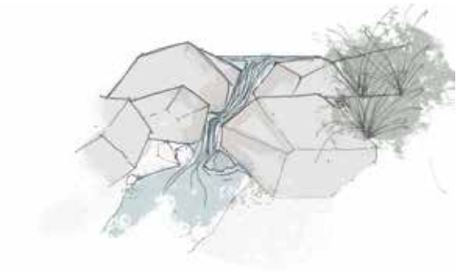
Ensure all design interventions reinforce natural patterns, biodiversity, and cultural values rather than detract from them.



ENSURE REHABILITATED LANDFORMS ARE APPROPRIATE IN THE CONTEXT OF THE ONL AND WIDER LANDSCAPE

Design rehabilitated landforms to blend seamlessly with the ONL and the surrounding landscape.

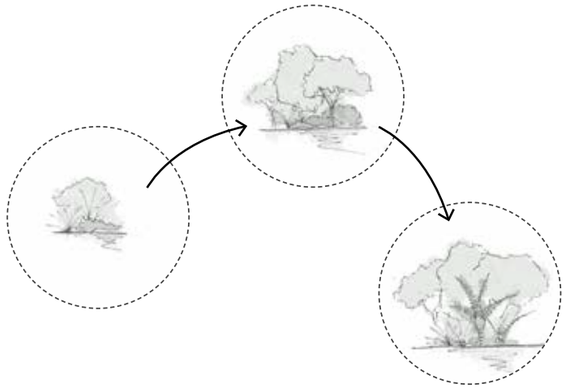
Use naturalistic profiles, gradients, and revegetation strategies that reflect pre-quarry conditions.



EMULATE ECOLOGICAL AND INSTREAM VALUES OF THE REALIGNED MANGAPŪ STREAM TRIBUTARY

Realign the Mangapū Stream Tributary to mimic natural channel morphology, hydrology, and habitat diversity

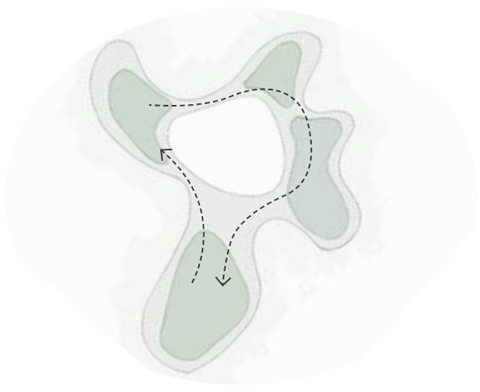
Incorporate riparian planting and instream features to support aquatic biodiversity and natural character attributes



BRING FORWARD REHABILITATION AND MITIGATION PLANTING WHEREVER POSSIBLE

Prioritise early implementation of landform stabilisation, revegetation, and mitigation planting.

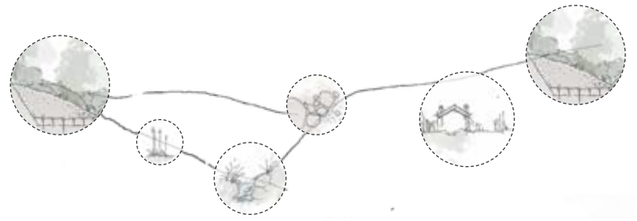
Stage works to deliver landscape gains ahead of quarry stages where feasible.



INTEGRATE MITIGATION MEASURES ADDRESSING IDENTIFIED LANDSCAPE EFFECTS

Develop a holistic mitigation framework addressing both ecological and landscape effects.

Ensure connectivity between rehabilitated areas, ecological networks and the ONL.



EMBED MANA WHENUA VALUES

Engage mana whenua throughout design and implementation to reflect cultural narratives, mauri (life force), and kaitiakitanga (guardianship)

Incorporate eco-sourced, native species and cultural design elements where appropriate.

2.0
LOCATION AND CONTEXT OF HUNUA QUARRY

2.0 LOCATION AND CONTEXT OF HUNUA QUARRY

LANDSCAPE CONTEXT

The Hunua Quarry is located approximately 5km southeast of Papakura and 35km southeast of Auckland's CBD. The wider landscape is characterised by Manukau Harbour to the west and the Hunua Ranges to the east. Surrounding land uses include the suburb of Papakura to the northwest, the settlement of Drury to the southwest, New Zealand Defence Force land to the north, and a mix of rural and rural residential properties in the immediate vicinity. Refer to **Figure 1**.

The existing quarry is located at 489 Hunua Road, south of Hunua Road and the Waipokapū (Hays) Stream. It is predominantly surrounded by established indigenous vegetation and hill ridge systems, with a rural lifestyle subdivision to the southwest. The quarry currently occupies land zoned Special Purpose – Quarry, with the proposed quarry development extending into the Mixed Rural Zone to the south and southeast of the existing pit. The wider landholding includes several areas identified as Significant Ecological Areas, and the southern extent of the Site is subject to an Outstanding Natural Landscape (ONL) overlay.

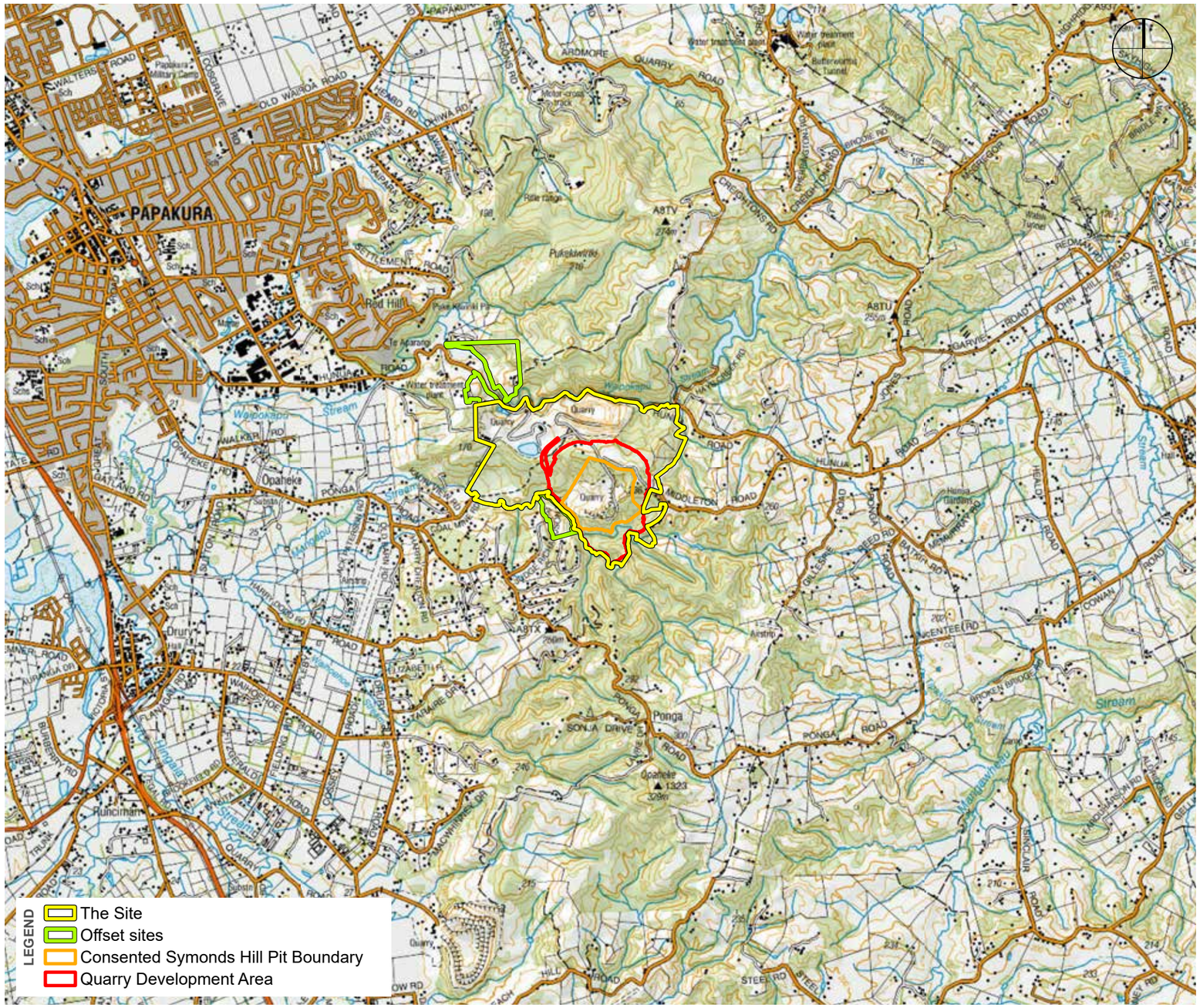


Figure 1: Location Plan

2.0 LOCATION AND CONTEXT OF HUNUA QUARRY

POLICY CONTEXT

Under the provisions of the Auckland Unitary Plan (Operative in Part) the existing quarry is zoned Special Purpose – Quarry Zone (SPQZ) but the proposed development will extend the quarry into the adjoining Rural - Mixed Rural Zone. The quarry development area is also subject to the following overlays: Quarry Buffer Area (Chapter D27), Outstanding Natural Landscape (ONL) (Area 60 Ponga Road), Significant Ecological Areas (SEA) (SEA_T_5323 and SEA_T_7032), High Use Stream Management Area (HUSMA) and Natural Stream Management Area (NSMA).

As a result of the removal of indigenous vegetation within the ONL and areas of SEA, the Rehabilitation Strategy includes several distinct but complementary functions. First, mitigation planting areas are established to address the landscape effects of vegetation lost within the ONL. Second, the rehabilitation of the quarried faces and the OBDA focuses on reinstating appropriate native vegetation cover on modified landforms, to establish and enhance the recognised green, vegetated visual backdrop.

Across all components, the strategy aims, wherever practicable, to re-establish native vegetation for landscape integration, and visual amenity purposes.

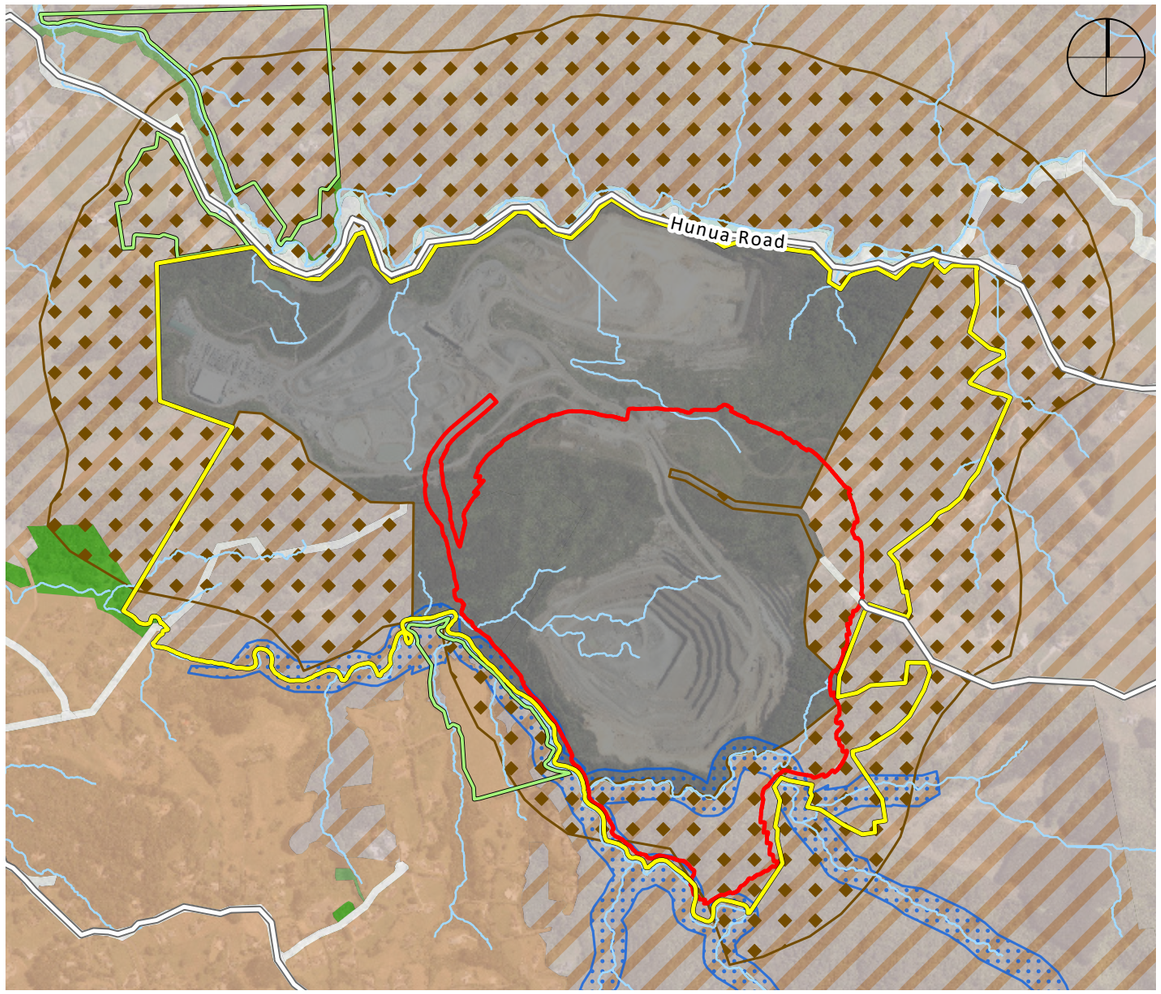


Figure 2: AUP Zoning

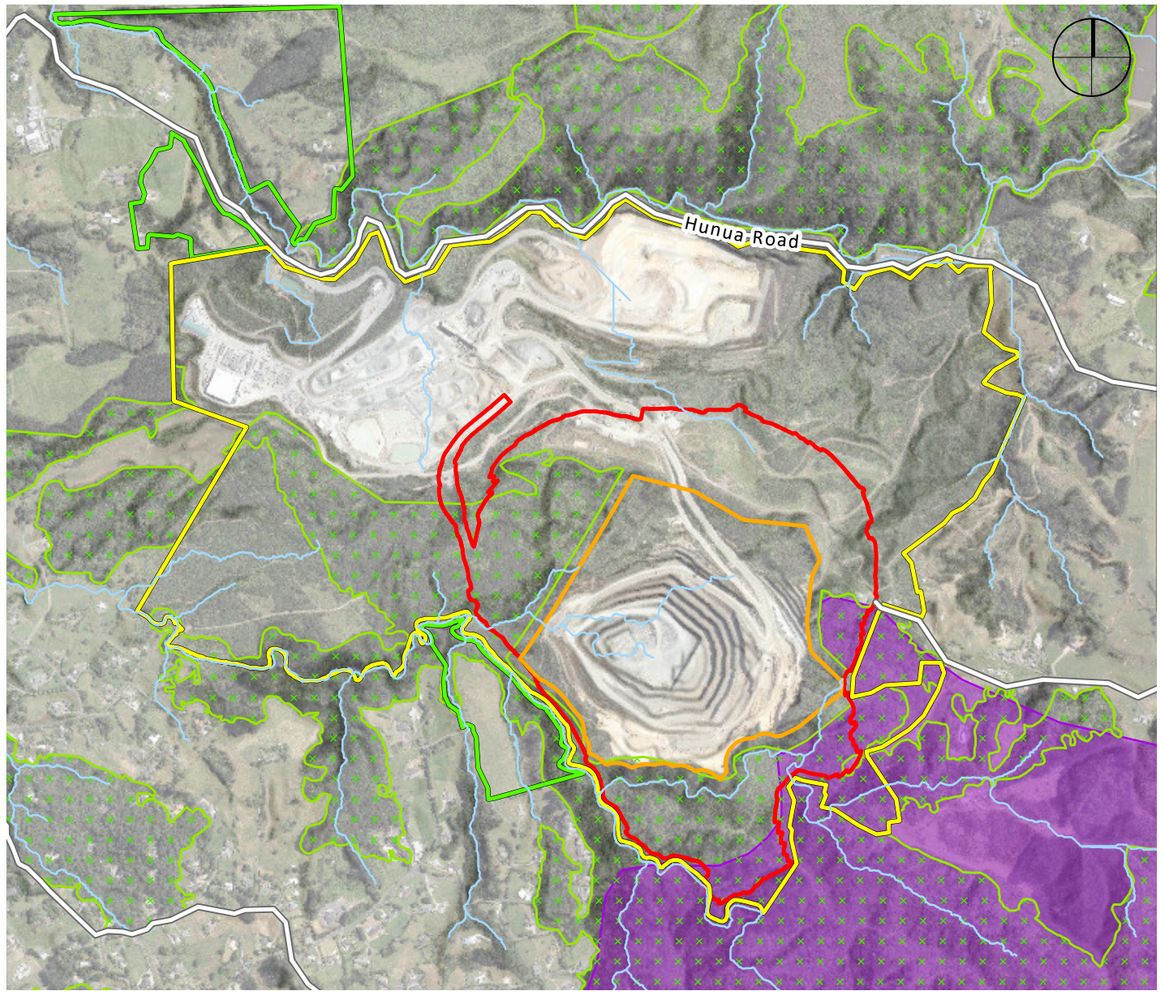


Figure 3: AUP Overlays

2.0 LOCATION AND CONTEXT OF HUNUA QUARRY

HUNUA QUARRY REHABILITATION INITIATIVES

The 2010 Vegetation Management Plan (VMP), prepared by Tonkin & Taylor Ltd, was set in place to satisfy the conditions of consent set by the Papakura District Council for the planning of the Symonds Hill pit development programme. Its primary focuses were:

- To ensure that cumulative rates of annual vegetation clearance for the development of Symonds Hill pit did not exceed the planted area
- To avoid clearance of vegetation during the kereru breeding season.
- To set up a monitoring programme containing specific components to measure and report the achievement of consent conditions
- To ensure that the extent of proposed pit and clearance is at least 30m from property and watercourse boundaries
- Revegetation of 39.9ha, and 70ha of habitat enhancements within existing vegetation, at appropriate times prior to major stages of vegetation clearance, as well as suitable species composition, structure and quality for various situations (riparian, forest, etc.) to ensure that they are representative, self-supporting, create links, restore riparian vegetation and reduce threats to existing forest areas.
- Maintenance of plantings and current forest areas through pest plant and animal control
- Placing of covenants on revegetated and existing forested areas
- Consultation with a range of affected and interested parties
- Procedures for implementing, monitoring, review and amendment of the management plan(s).

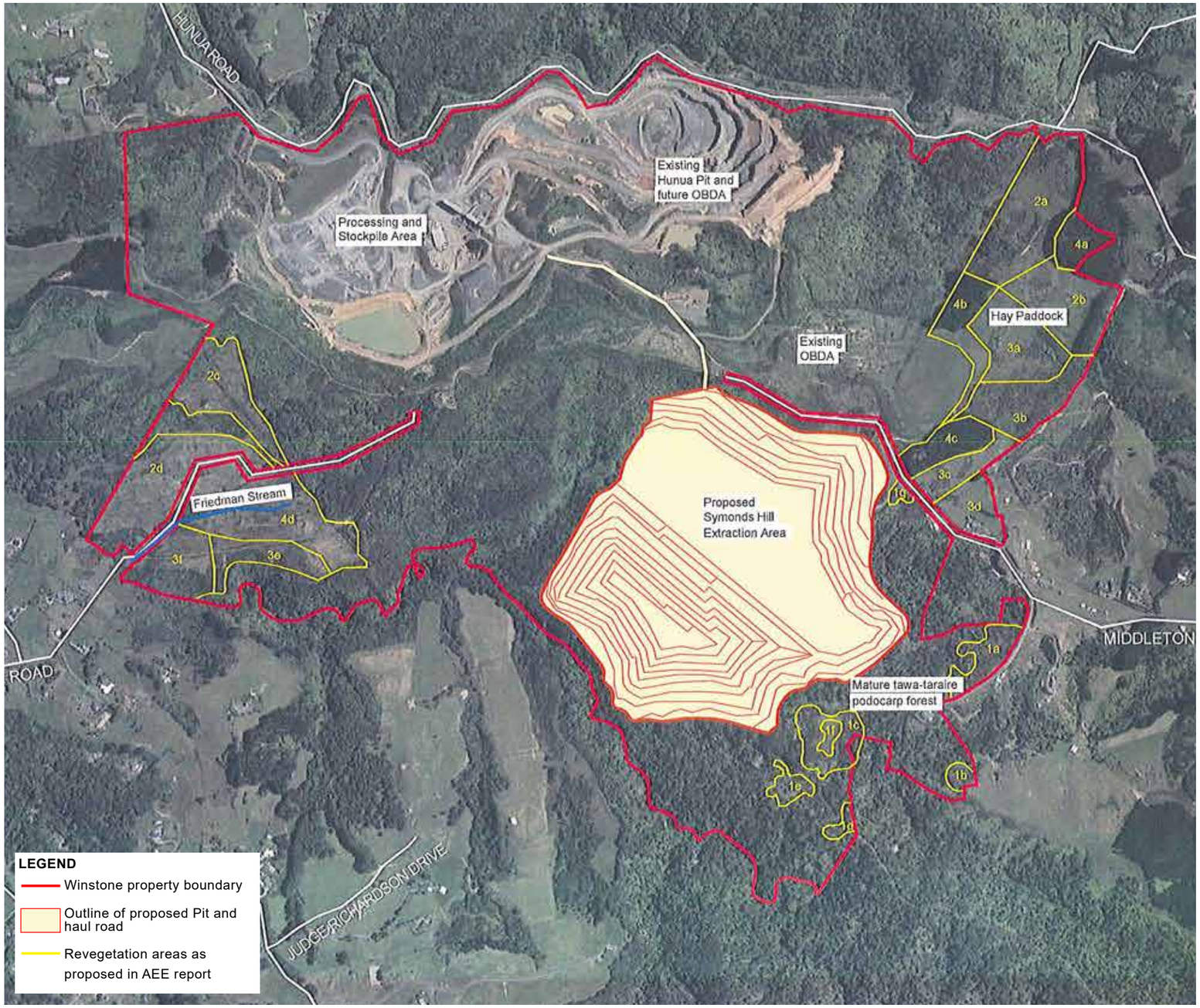


Figure 4: Revegetation Areas within the VMP prepared by Tonkin & Taylor Ltd, dated August 2010.

2.0 LOCATION AND CONTEXT OF HUNUA QUARRY

PROPOSED NATIVE REVEGETATION OF THE SITE

MITIGATION AND OFFSET PLANTING

The proposed mitigation and offset plantings will be established across designated offset sites within the Winstone landholding the first planting season following construction. These plantings will comprise a diverse mix of native species that are characteristic of, and currently present within, the Significant Ecological Area (SEA_T_5323). This approach ensures that the re-vegetated areas reflect the ecological integrity of the local ecosystem, supports local biodiversity values, and contributes to the long-term enhancement of habitat resilience and connectivity across the wider landscape, while also contributing to the landscape character of the area.

Additional offset planting will be undertaken at the Meremere Quarry and Hunua Regional Park as part of the wider ecological offset and compensation package, however further details on these areas are addressed in the Ecology Management Plan, prepared by Boffa Miskell, dated March 2026.

REHABILITATION PLANTING

The proposed rehabilitation planting includes the Mangapū Stream Tributary realignment, quarried benches above 90RL, and the Hunua Pit OBDA. Refer to **pages 25 - 34** for further details.

PHASES OF PLANTING		
AREAS OF PLANTING		**AREA (HECTARES)**
0	Landscape Mitigation & Offset Planting (Winstone owned land)	18.1
1	Tributary Corridor Planting	0.33
	Bench Planting above realignment	1.022
2	Revegetation of Western Haul Road	0.25
3	Bench planting	6.39
	Revegetation of Western Haul Road Slopes	0.55
	Hunua Pit OBDA	25.8
4	Bench planting	11.83
	Total (ha)	**64.272**

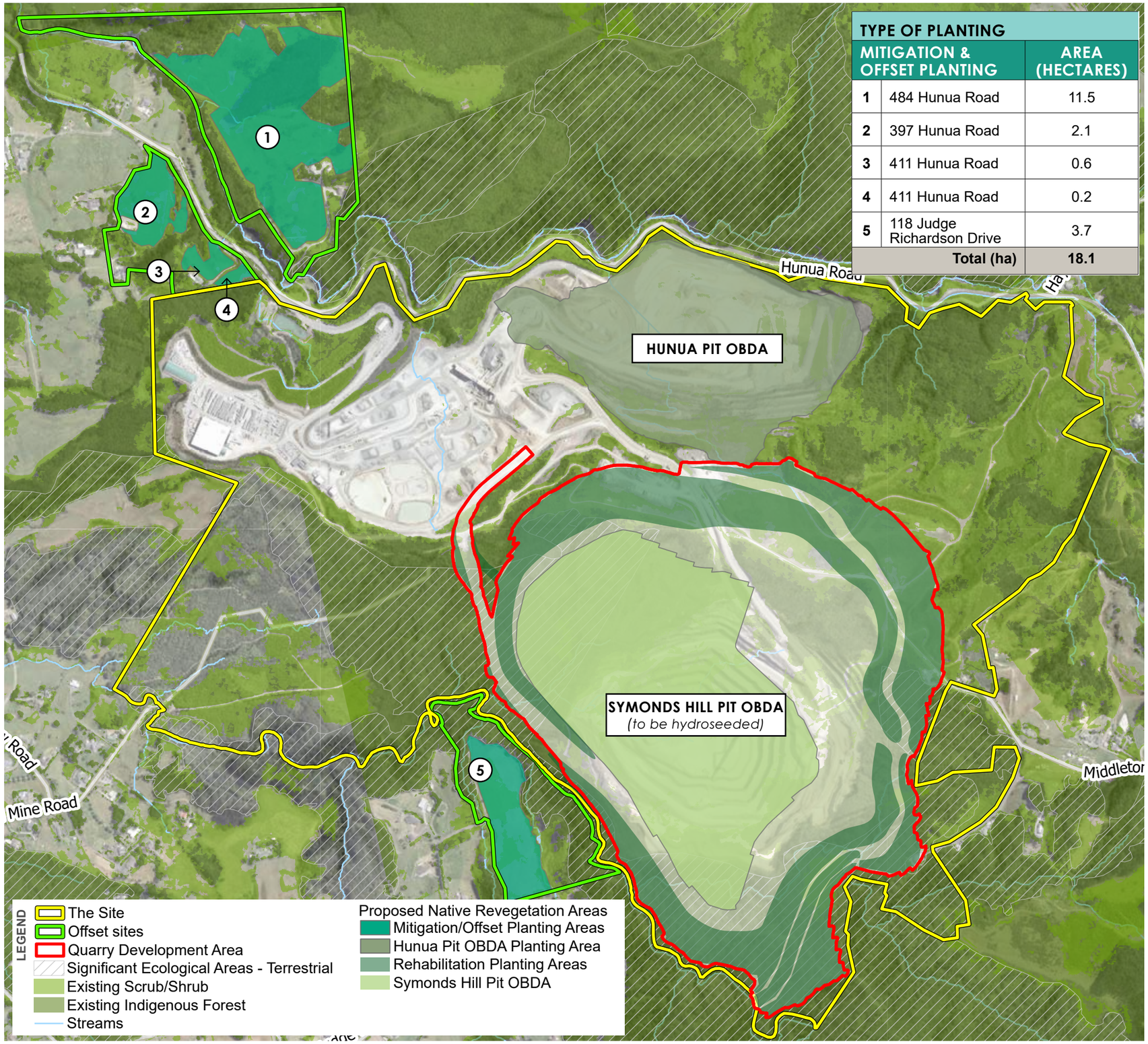


Figure 5: Landscape Mitigation Plan

3.0
FACTORS INFLUENCING REHABILITATION

3.0 FACTORS INFLUENCING REHABILITATION

GEOLOGY[1]

The geological units are illustrated in **Figure 6**, with the greywacke subdivided into weathering grades aligned with rock suitability for use as aggregate.

Waitemata Group is present in the upper northwest to northeast benches of the highwall above RL 150 m and forms a large part of the overburden for the Symonds Hill Pit. It comprises extremely weak to weak interbedded sandstone and siltstone overlain by residually weathered soils. The base of the Waitemata Group is irregular in the Symonds Hill Pit. Where Waikato Coal Measures are absent, the Waitemata Group non-conformably overlies the Waipapa Group greywacke (i.e., the younger sedimentary Waitemata Group has been deposited over the older, eroded and weathered Waipapa Group).

The Waikato Coal Measures (WCM) are dark brown, highly weathered, weak interbedded siltstones and carbonaceous mudstones. WCM are exposed below the Waitemata Group in an area on the northeastern wall of the Symonds Hill Pit, where it is approximately 5 to 10 m thick and approximately 50 m wide in the face. The WCM are not currently exposed anywhere else in Symonds Hill Pit, but are shown to be present towards the southwest (about Coal Mine Road), and are present in investigation boreholes in the area referred to as the Friedman Block immediately west of Symonds Hill pit.

The WCM mudstones in the Friedman block were proven to be more than 13.1 m thick, and have been observed to dip towards the southwest. Weakened bedding shear surfaces were encountered, which are known to have contributed to localised slope instability in this area, where those shear surfaces are at or near the interface with the overlying Waitemata Group.

The Waipapa Group greywacke comprises lightly metamorphosed, moderately strong to very strong sandstone, siltstone and rare mudstones. The Waipapa Group rocks are typically closely jointed and locally heavily faulted or sheared, with variable weathering. In general, weathering reduces with depth below the unconformity. However, the greywacke rock is typically more deeply weathered where faulting is present.

The argillite (siltstone and mudstone) content of the greywacke is variable with the frequency of siltstone beds increasing across the western section of the Symonds Hill Pit and further beyond the current pit shell. The deeply weathered and altered argillite has been previously mapped west of the main Symonds Hill Pit, in boreholes and within Mangapū Stream. However, the black tectonically sheared argillite (sheared mudstone), that is common in other greywacke sequences exposed in greywacke quarries about the region, have not been identified in Symonds Hill Pit.

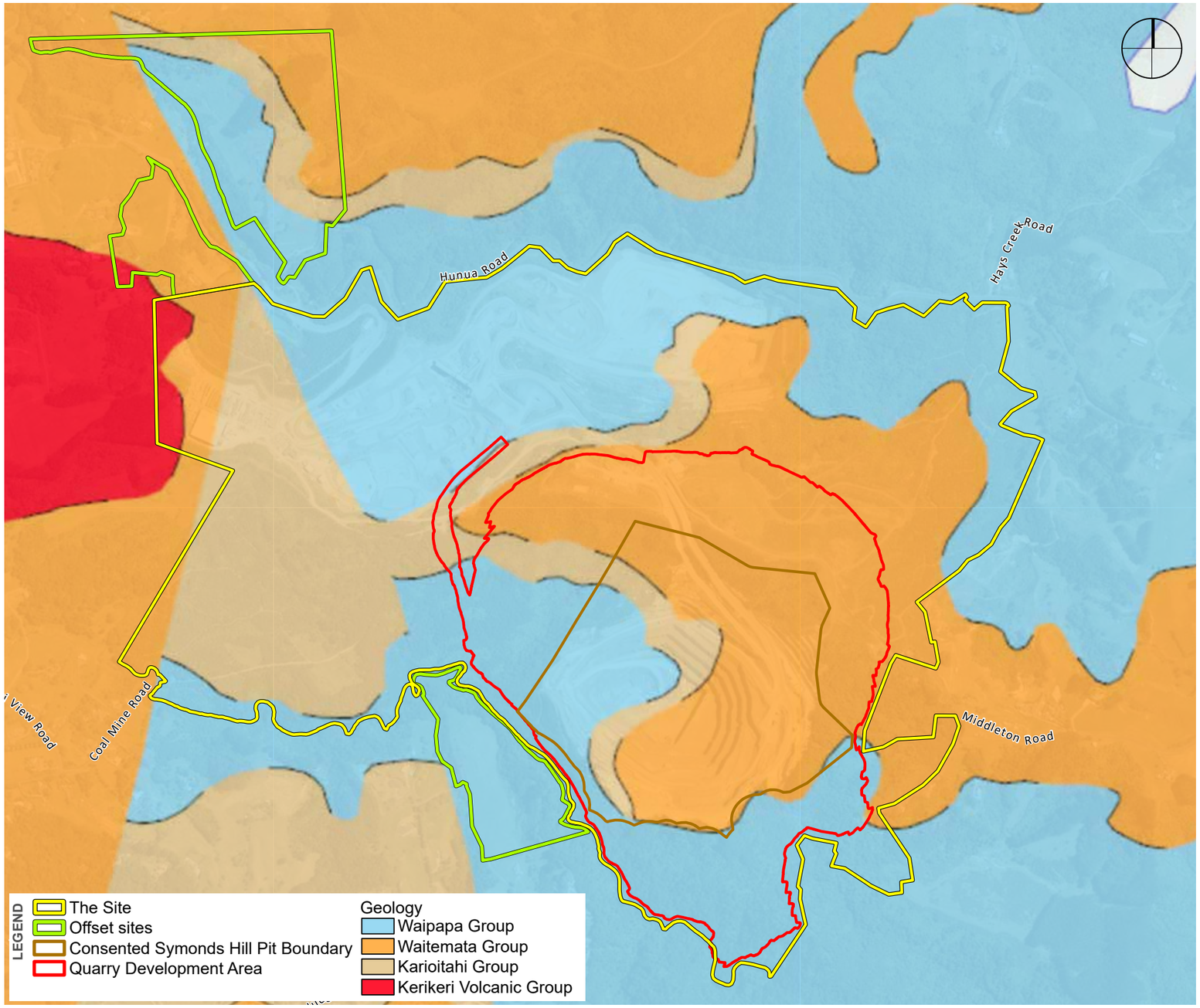


Figure 6: Geology

1 RESOURCE CONSENT TECHNICAL REPORT - GEOTECHNICAL ASSESSMENT - HUNUA QUARRY, PREPARED BY TONKIN & TAYLOR LTD, DATED FEBRUARY 2026.

3.0 FACTORS INFLUENCING REHABILITATION

ASPECT

As illustrated on **Figure 7**, the aspect mapping for the proposed development shows a varied distribution of slope orientations across the Site, reflecting the undulating landform within the wider quarry landholding. The mapping identifies the full range of aspect classes, including flat areas, the cardinal directions, and all intercardinal orientations, indicating that no single dominant slope direction characterises the development area.

This variation in aspect creates a diversity of microclimatic conditions that will influence earthworks behaviour, revegetation potential, and the landscape and ecological rehabilitation approach. North and west facing slopes are likely to receive greater solar exposure and experience warmer, drier conditions, leading to increased evapotranspiration and a heightened need for erosion control measures and drought-tolerant planting during establishment. Conversely, south and east facing slopes will be cooler and retain moisture for longer periods, supporting plant species that prefer shaded, humid conditions but also requiring attention to managing slower drying times and potential soil softness.

These aspect driven differences also have implications for visual and operational effects: north and west facing batters are more visually exposed under afternoon light and may benefit from earlier softening and planting, while dust suppression may need to be prioritised on these warmer, more exposed faces during dry periods. The mapping clearly illustrates the spatial patterning needed to guide aspect-responsive earthworks sequencing, planting design, and rehabilitation management across the proposed development.

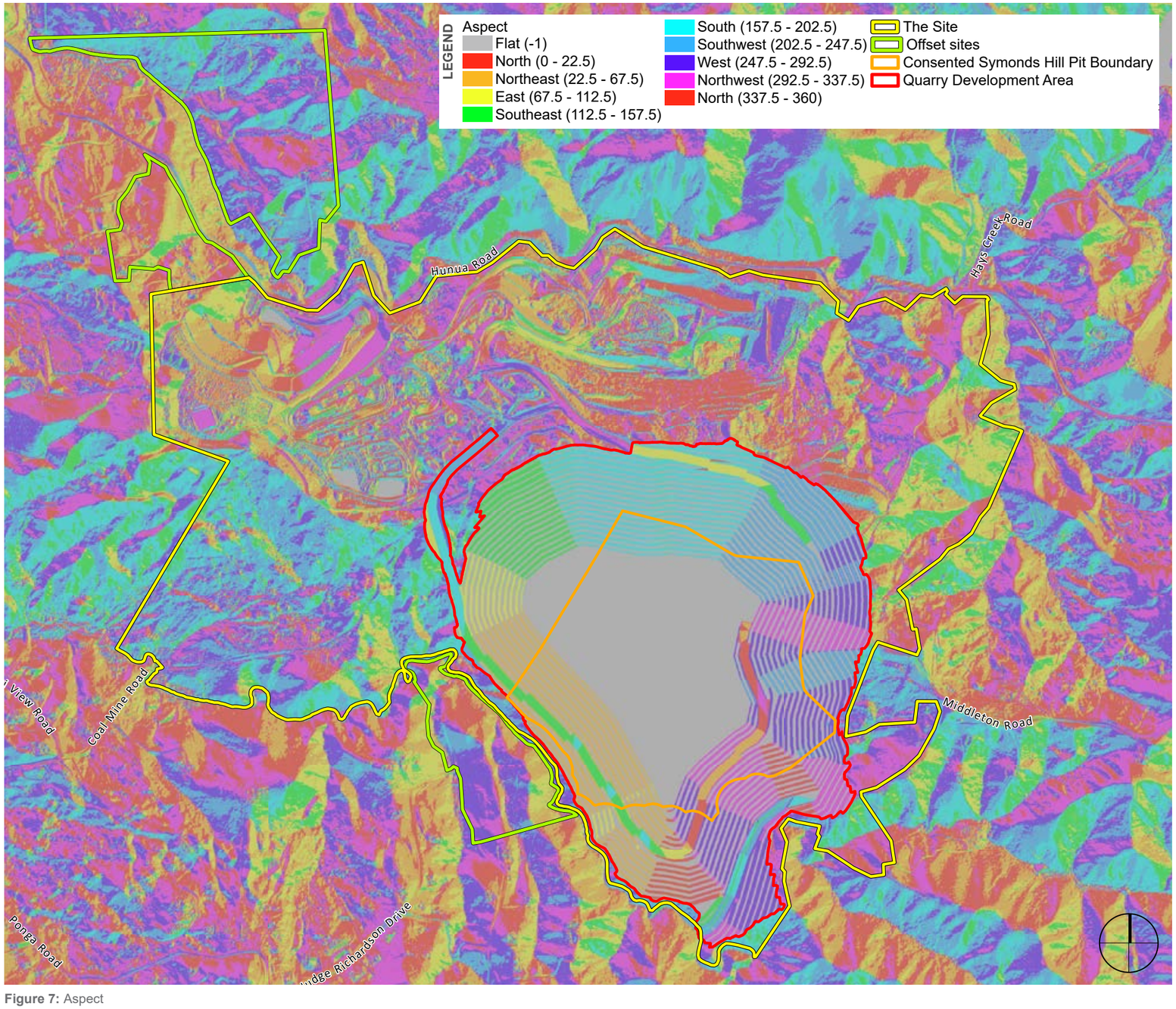


Figure 7: Aspect

3.0 FACTORS INFLUENCING REHABILITATION

SLOPE

As illustrated on **Figure 8**, the slope mapping for the proposed development illustrates a diverse topographic profile across the Site, ranging from flat and gently undulating terrain through to steep and very steep slopes. The map identifies seven slope classes, 0–3°, 3–7°, 7–15°, 15–20°, 20–25°, 25–35°, and >35°, and shows that the proposed development spans this full gradient spectrum. This variation reflects the natural landform patterns characteristic of the wider Hunua hill country, as well as existing quarry modified surfaces.

Flatter and gently undulating areas (0 -7°) appear primarily along bench surfaces, access routes, and lower lying parts of the Landholding, offering opportunities for staging, internal circulation, sediment management, and early rehabilitation platforms. Rolling to strongly rolling terrain (7–20°) is common across the mid slopes and transitional landforms, where earthworks can generally be undertaken with moderate earth shaping and standard stabilisation treatments.

The mapping also illustrates that portions of the proposed development include moderately steep to very steep slopes (>20°, and particularly >25–35° and above 35°), which will require careful geotechnical design, erosion control planning, and responsive management. These steeper slopes are likely to be more susceptible to erosion, slumping, and rapid runoff if left exposed, necessitating timely stabilisation through surface roughening, engineered drainage, and robust revegetation strategies.

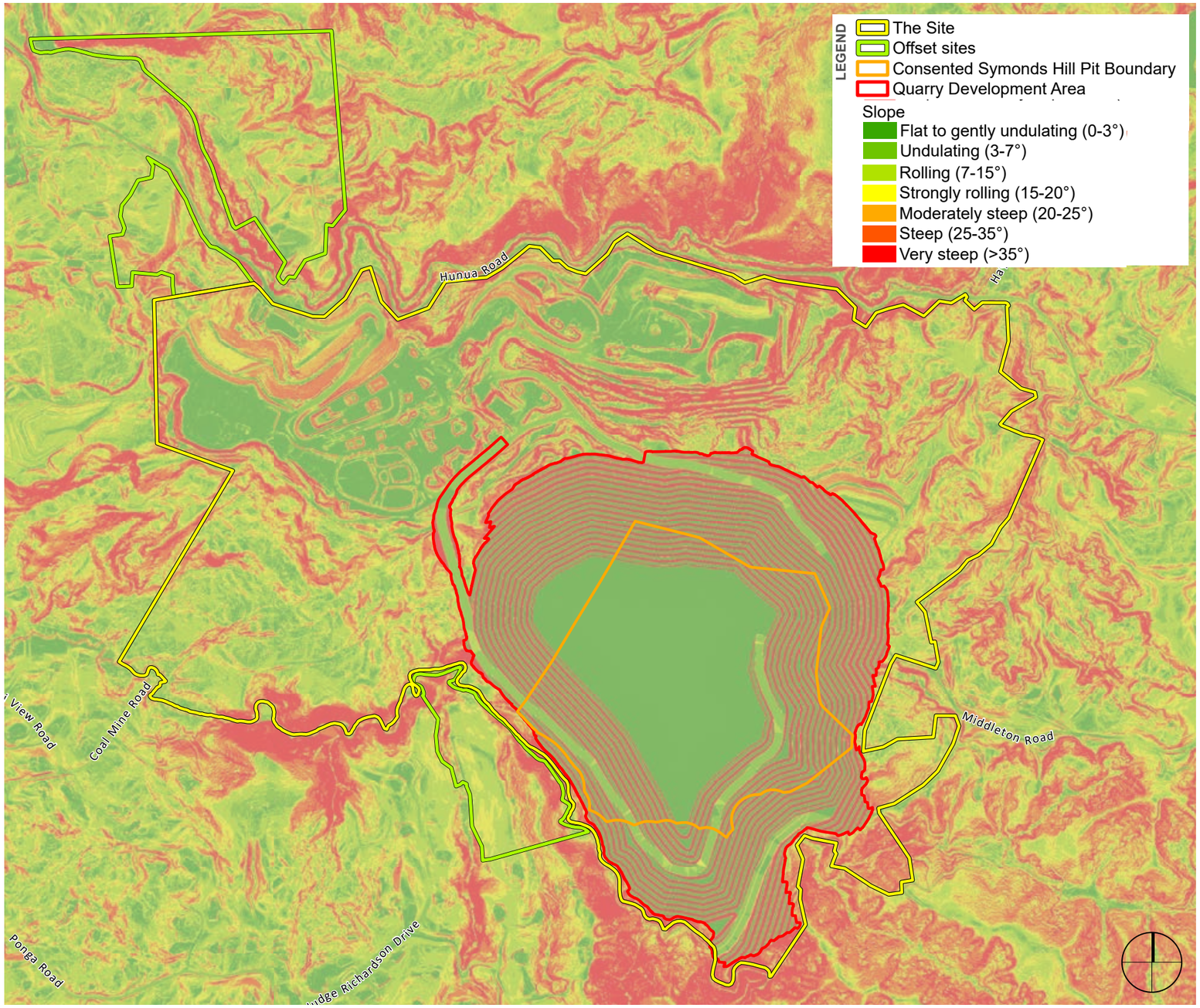


Figure 8: Slope

3.0 FACTORS INFLUENCING REHABILITATION

CLIMATE[1]

The Hunua Quarry area, experiences a temperate maritime climate characterised by mild temperatures, consistent year-round rainfall, and moderate seasonal variation. This climate pattern reflects the wider conditions of the Hunua Ranges, where temperatures remain relatively stable and the region is influenced by proximity to both the Tasman Sea and the Pacific Ocean.

Average annual temperature is approximately 14.0°C, with warmest conditions occurring in February (avg. 18.8°C) and coolest in July (avg. 9.7°C). Annual precipitation totals around 1063 mm, with rainfall distributed throughout the year; the driest month is February (70 mm) and the wettest is July (118 mm).

Seasonal patterns in the Hunua Ranges show moderate springs (10–20°C), warm summers (20–25°C), cool autumns (10–18°C) with increasing rainfall, and cool, wetter winters (5–15°C) with occasional frosts at higher elevations. These conditions produce consistently moist environments that support extensive native forest cover and contribute to stable soil moisture levels across much of the year.

Overall, the local climate is typical of the lower Waikato - Auckland hill country: temperate, humid, and strongly maritime, with limited temperature extremes and a reliable rainfall regime that supports indigenous forest ecosystems and year-round vegetation growth.

ELEVATION

As illustrated in **Figure 9,** the existing landform is shaped by historic quarrying, with the completed Hunua Pit in the north separated from the active Symonds Hill Pit to the south by a ridge and an area of elevated terrain. Once quarrying in the expanded Symonds Hill Pit is complete, this ridge will become less prominent. Furthermore, as the Hunua Pit is progressively backfilled with overburden, the original northern landform and elevations will be largely reinstated, as illustrated in the rehabilitation plans on **pages 25 - 34**.

VISIBILITY

As part of assessing the visual effects of extraction activity, a key consideration is the potential visual impact of the proposed development within the wider landscape, particularly the visibility of the quarry as a backdrop when viewed from surrounding private properties and public vantage points. These matters are addressed in detail within the Landscape Effects Assessment prepared by Boffa Miskell.

A primary visual outcome sought is the retention of a “green, vegetated visual backdrop” as extraction progresses across the Site. This primarily relates to elevated areas of the quarry that are visible from parts of the wider landscape.

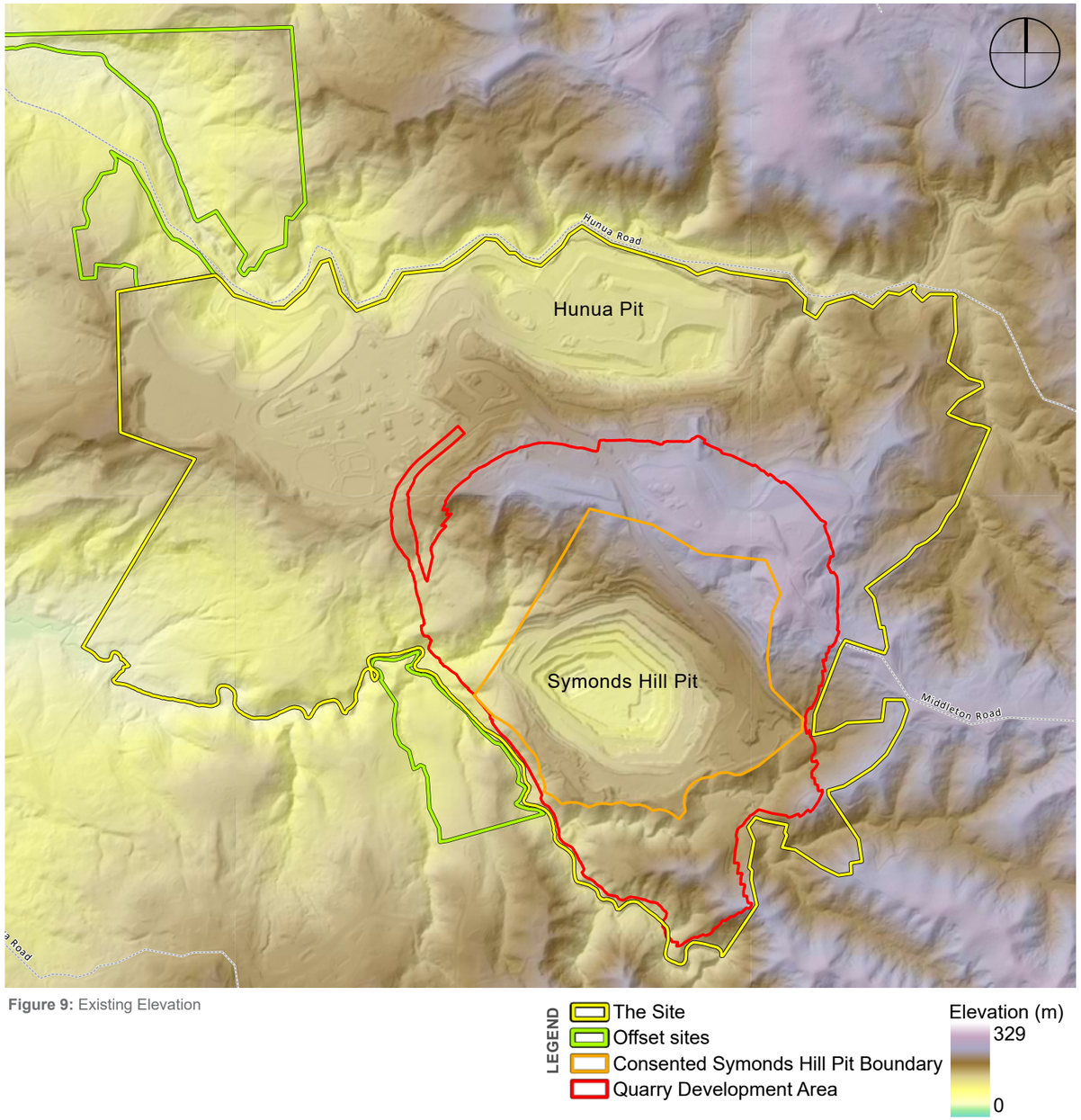


Figure 9: Existing Elevation

1 HTTPS://EN.CLIMATE-DATA.ORG/OCEANIA/NEW-ZEALAND/AUCKLAND/HUNUA-417388/.

3.0 FACTORS INFLUENCING REHABILITATION

VEGETATION TYPES OF THE SITE

*Refer to **Figure 10** for the Vegetation Types Map*

EARLY SUCCESSIONAL VEGETATION

TREE-FERNLAND WITH NĪKAU, EMERGENT PŪRIRI AND BROADLEAF SCRUB

This vegetation particularly dominates lowland gully and sheltered slope areas across the site, occurring on moderately fertile soils with medium to poor drainage. It is interpreted as being induced by recent-historic anthropogenic clearance. Retrolens imagery shows an absence of woody vegetation in parts of these areas until approximately 1988, which is likely when natural regeneration commenced. As a result, this vegetation remains in an early successional stage at present.

Structurally, this vegetation type is best described as a treeland or low forest dominated by tree ferns, low-stature broadleaved species, shrubs, and ferns. Mean canopy height is approximately 4 m, with a range of 3–8 m, and the vegetation typically comprises three strata: a developing canopy of broadleaved species and tree ferns, a subcanopy of juvenile broadleaves and shrubs, and a fern- and herb-dominated groundcover layer. Occasional weed species, including gorse, pampas, and woolly nightshade, are present in areas where indigenous cover is lower, particularly along the northern edge of the current Symonds Pit and adjacent road margins. Indigenous vegetation cover is generally high (>80–90%), with canopy cover typically between 40–70% and dense subcanopy and ground cover in sheltered locations.

Dominant species include ponga (Cyathea dealbata), mahoe (Melicytus ramiflorus), wheki (Dicksonia squarrosa), and mamaku (Cyathea medullaris). Frequent associated species include pate (Schefflera digitata), hangehange (Geniostoma ligustrifolium), pigeonwood (Hedycarya arborea), mapou (Myrsine australis), putaputawētā (Carpodetus serratus), and nīkau (Rhopalostylis sapida).

This vegetation best fits the description of the VS5 vegetation type in Singers et al. (2017): Broadleaved species scrub/forest, which has a regional IUCN threat status of Least Concern due to its high prevalence in Auckland and across the country. This vegetation is often composed of highly palatable broadleaf species, so its species composition can be altered or threatened by browsing mammalian pests.

KĀNUKA FOREST WITH EMERGENT BROADLEAVES & PODOCARPS

This vegetation occurs primarily on slopes and ridgelines across the site, generally on free-draining soils of moderate fertility. It represents a later successional stage of regeneration following historic land clearance, with no evidence of recent major disturbance. In these areas, natural succession has progressed beyond early scrubland, allowing for the development of a closed forest canopy and increasing broadleaf recruitment.

Structurally, this vegetation is a forest dominated by kānuka (Kunzea robusta), with a mean canopy height of approximately 5–12 m and occasional individuals reaching up to 15 m. The vegetation typically comprises three strata: a kānuka-dominated canopy, a developing subcanopy of broadleaved species, and a sparse to moderately developed shrub and fern ground layer. Canopy cover is generally high, typically ranging between 70–90%, with subcanopy density increasing where canopy gaps occur. Indigenous vegetation cover is generally upwards of 95%.

Kānuka is the dominant canopy species throughout this vegetation type. Ponga (Cyathea dealbata) is a common subcanopy species, and broadleaved and podocarp species are common and increasing in abundance, including mahoe (Melicytus ramiflorus), mapou (Myrsine australis), pūriri (Vitex lucens), taraire (Beilschmiedia tarairi), tawa (Beilschmiedia tawa), pigeonwood (Hedycarya arborea), tōtara (Podocarpus totara), mingimingi (Leucopogon fasciculatus), tanekaha (Phyllocladus trichomanoides), and kahikatea (Dacrycarpus dacrydioides). The mix of dominant species under the kānuka canopy was variable and dictated by topography and their associated conditions (i.e. more broadleaves in wetter gullies, more podocarps on drier slopes). The presence of these species indicates ongoing successional transition toward podocarp–broadleaved forest.

This vegetation best fits the description of the VS2 vegetation type in Singers et al. (2017): Kānuka forest, which has a Regional IUCN threat status of ‘Least Concern’ due to its prevalence resulting colonisation after historic and recent widespread vegetation clearance. Weed species, particularly fire-resistant ones, provide the most threats to this vegetation type.

KĀNUKA/MĀNUKA SCRUB

In this site, this vegetation occurs primarily on moderate-poorly draining, nutrient-poor soils in flat or slumped areas, and represents an early to mid-successional stage following historic clearance. Structurally, this vegetation is a low forest or tall shrubland, typically 2–6 m in height, and generally comprises two strata: a dense shrub canopy and a sparse to moderate ground layer of sedges, ferns and herbs. Canopy cover is typically high, ranging from approximately 70–90%, with some emergent weed species such as woolly nightshade and pampas present (~1-5%)

The vegetation is dominated by kānuka and mānuka (Leptospermum scoparium), with few other woody species present, including mahoe, hangehange and putaputawētā. Where canopy gaps occur, early successional broadleaved species may establish, indicating ongoing successional development. Wet-tolerant Carex species are common as groundcover due to the poorly draining soils.

This vegetation best fits the description of the VS3 vegetation type in Singers et al. (2017): Mānuka / kānuka scrub, which has a Regional IUCN threat status of ‘Least Concern’ due to its prevalence resulting from colonisation after historic and recent widespread vegetation clearance. Weed species, particularly fire-resistant ones, provide the most threats to this vegetation type.

3.0 FACTORS INFLUENCING REHABILITATION

VEGETATION TYPES OF THE SITE

*Refer to **Figure 10** for the Vegetation Types Map*

LATE SUCCESSIONAL VEGETATION

TAWA-TARAIRE FOREST WITH MATURE KĀNUKA

This vegetation occurs as remnant areas within lowland areas of the site, typically on fertile alluvial or colluvial soils with good moisture availability. These areas have experienced comparatively limited historic disturbance and retain characteristics of mature indigenous forest.

Structurally, this vegetation is a tall forest with a well-developed vertical profile. Canopy height typically ranges from approximately 18–25 m, with four distinct strata evident: an upper canopy dominated by mature trees, a subcanopy of shade-tolerant species, a shrub layer, and a fern-dominated ground layer. Canopy cover is generally high (>90%), creating shaded understory conditions.

Dominant canopy species include taraire (Beilschmiedia tarairi), tawa (Beilschmiedia tawa), and pukatea (Laurelia novae-zelandiae). These species are diagnostic of this vegetation type and occur consistently throughout remnant stands, with a diverse assemblage of broadleaved shade-tolerant understorey species present beneath, often dominated by pūriri (Vitex lucens), nīkau (Rhopalostylis sapida), ponga, mahoe, pigeonwood, kohekohe (Dysoxylum spectabile), rewarewa (Knightia excelsa), and parataniwha (Freycinetia banksii) as a common groundcover. Less commonly, white maire (Nestegis lanceolata), rimu (Dacrydium cupressinum), kahikatea (Dacrycarpus dacrydioides) and tōtara (Podocarpus totara) are present as subcanopy and canopy trees in some slope areas.

This vegetation best fits the description of the WF9 vegetation type in Singers et al. (2017): Taraire, tawa, podocarp forest. This ecosystem type has a regional threat status of “Endangered” under the IUCN ecosystem threat classification (Singers et al., 2017).

KAURI, PODOCARP, BROADLEAF FOREST

This vegetation occurs in upland to lowland areas of the site, typically on acidic, free-draining soils. These areas have experienced limited recent disturbance and support mature indigenous forest.

Structurally, this vegetation is a tall forest with canopy heights typically ranging from 18–25 m. The forest exhibits a well-developed four-tiered structure, comprising emergent kauri and podocarps, a closed canopy of large podocarps, a subcanopy of broadleaved species, and a fern and seedling-dominated ground layer. Some areas comprise fewer podocarps and are more dominated by mature kānuka, likely due to a mosaic of land use and recent disturbance across the site. Canopy cover is generally high (>80%).

Dominant species include kauri (Agathis australis), podocarp species such as tanekaha and rimu, or kahikatea where soils are more poorly-draining., and a diverse assemblage of indigenous broadleaved shrubs and trees, particularly kānuka, hangehange, mahoe, pigeonwood, rewarewa. Species composition reflects advanced successional status and long-term forest continuity.

This vegetation best fits the description of the WF11 vegetation type in Singers et al. (2017): Kauri, podocarp, broadleaved forest (WF11). This ecosystem type has a regional threat status of “Endangered” under the IUCN ecosystem threat classification (Singers et al., 2017).

DISTURBED/MODIFIED VEGETATION

NATIVE PLANTING/WEEDY SCRUB MIX

This vegetation occurs in areas that have been previously cleared and subsequently planted or left to regenerate, often on modified soils. It reflects a combination of planting history, ongoing disturbance, and weed invasion, resulting in a heterogeneous vegetation mosaic across the site.

Structurally, this vegetation ranges from scrub to shrubland, with vegetation heights typically between 1–5 m. The vegetation generally comprises two strata: a shrub or low tree canopy and a ground layer dominated by grasses, herbs, and juvenile woody species. Total vegetation cover is variable, ranging from approximately 50–90%, with patchy distribution of indigenous and exotic species.

Species composition varies considerably but typically includes planted indigenous species such as Coprosma spp. and Pittosporum spp., alongside exotic species including gorse, pampas, inkweed and other ruderal weeds. Indigenous species dominance is variable and reflects planting density, maintenance, and time since disturbance.

This vegetation represents a modified, early successional state and does not directly correspond to a single vegetation type in Singers et al. (2017) and is therefore treated as a locally defined vegetation unit.

EXOTIC SPECIES

These areas have likely been cleared recently and/or experience ongoing modification and disturbance, resulting in fast-growing exotic species dominating the groundcover and outcompeting native species. Pampas, pine, and rank grasses dominate these areas, providing extremely limited biodiversity and habitat for native species, and very limited ecological function.

3.0 FACTORS INFLUENCING REHABILITATION

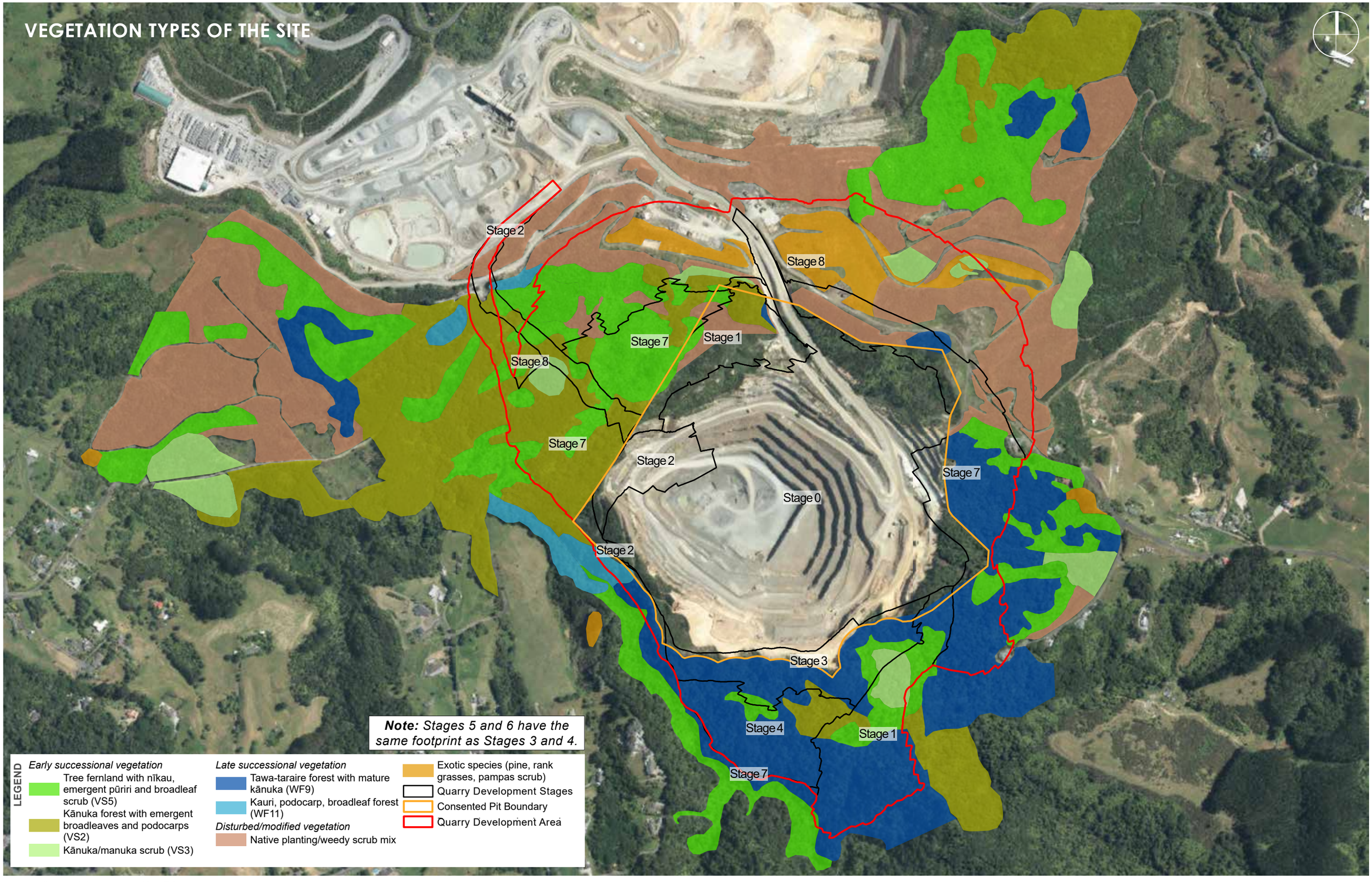


Figure 10: Vegetation Types of the Site

4.0
REHABILITATION STRATEGY

4.0 REHABILITATION STRATEGY

Within this strategy, staged plans illustrate the various phases of rehabilitation across the Site and set out the rehabilitation procedures, indigenous vegetation maintenance requirements, and monitoring activities to be undertaken as quarry operations progress. Rehabilitation will be implemented incrementally, with each area addressed as its respective stage of extraction is completed. Consequently, the overall rehabilitation timeframe extends over several decades, with revegetation established during the early stages becoming well advanced by the time the later stages of extraction conclude.

Because every quarry site presents unique conditions, each rehabilitation programme necessarily involves a degree of ongoing management. This includes trialling and refining techniques to identify the most effective methods for the specific site conditions (e.g. geology, soils, climate, aspect, vegetation types) at Hunua Quarry. The strategy, therefore, incorporates responsive management and monitoring as an essential component to determine both the effectiveness and the pace at which successful rehabilitation can be achieved.

A progressive rehabilitation approach is fundamental, as it improves certainty in anticipated outcomes by applying knowledge gained from earlier stages to subsequent phases of work. Revegetation measures will differ between areas based on localised factors such as climate, exposure, aspect, and substrate, ensuring that each rehabilitated landform can support resilient, self-sustaining indigenous vegetation communities.

The proposed Rehabilitation Strategy operates in an integrated manner alongside the ongoing extraction activity over the life of the quarry. Monitoring and management of rehabilitation will continue beyond the completion of extraction, recognising that rehabilitation is an integral part of quarry operations to be implemented progressively at the end of each stage. It is therefore critical that a sequential staging plan is adopted and adhered to throughout the duration of the works. While the timing of individual stage completion may vary in response to changes in demand for aggregate, the overall sequence of extraction forms the basis for the corresponding rehabilitation processes.

OBJECTIVES

The overall objectives of the rehabilitation works are to:

- To realign and rehabilitate the Mangapū Stream Tributary in a manner that restores natural stream processes and form, enhances ecological values, and protects and strengthens the natural character of the waterway and its margins, while supporting long-term freshwater health and resilience.
- Coordinate extraction and rehabilitation activities to ensure an efficient, integrated operating sequence throughout the life of the quarry.
- Create a final landform that aligns with surrounding topography and provides favourable conditions for successful revegetation.
- Establish a stable and functional drainage pattern that minimises ponding, reduces erosion risk, and supports long-term landform stability.
- Provide early ground cover, such as grass and early successional native shrubs and canopy species, as soon as soil and site conditions allow, to control erosion and stabilise exposed surfaces.
- Facilitate the establishment of resilient early successional native shrubs and canopy plant communities that restore long-term landscape character and indigenous biodiversity values.
- Implement rapid revegetation techniques in visually prominent areas to reduce the duration and extent of adverse visual effects during active quarrying.

A key objective of the Rehabilitation Strategy is to accelerate natural regeneration processes that would otherwise occur slowly over time. The dynamics of natural regeneration are influenced by several factors, including aspect, wind exposure, soil characteristics, the availability of seed sources, and the presence of plant and animal pests.

To shorten the time required to achieve a robust cover of indigenous vegetation, a range of targeted revegetation techniques will be employed. These include ripping, blasting, and strategic placement of fill to create scree surfaces and substrates suitable for plant establishment; introducing soil-forming materials or organic soils to improve substrate quality for natural regeneration or planting; planting rock habitat adventive species and nurse plants to create favourable microhabitats; and reducing the influence of pest plant and animal species through ongoing management (refer to the Pest Management Plan).

Collectively, these measures aim to achieve regeneration timeframes comparable to those observed on unmodified landforms, while ensuring the development of resilient native plant communities.

CULTURAL INPUT AND ADVICE

Refer to the *Cultural Values and Consultation Summary Report* prepared by Wikaira Consulting Limited for a summary of the iwi workshops, cultural values and the deed of settlements relevant to the Project

INTEGRATION OF THE LANDSCAPE AND ECOLOGY PRIORITIES

The key principles underpinning this integration are:

- Restoring and enhancing the Site's existing natural values based on its ONL and SEA overlays;
- Providing an overview of proposed revegetation areas, including indicative planting locations, species and quantities;
- Aligning ecological and landscape plantings to achieve connectivity and a cohesive pattern of rehabilitation.
- Implementing comprehensive pest (plant and animal) management prior to planting;
- Prioritising a diverse palette of native plant species, implemented through staged planting to establish an early canopy layer before introducing complementary understory and enrichment species;
- Establishing a suitable in-stream and margin environment to achieve a sustainable hydrological and ecological system;
- Enhancing habitat diversity within the Mangapū Stream corridor through riparian planting designed to strengthen ecological function, improve natural character values over time, and continue a naturalised stream alignment;
- Establishing a long-term monitoring and maintenance programme to ensure restoration objectives are met;
- Developing a clear implementation plan detailing responsibilities for guidance, planting, and maintenance;
- Ensuring all plant material is eco-sourced locally or within the Hunua Ecological District where possible; and
- Defining a clear implementation timeline for all landscape and ecological planting works.

4.0 REHABILITATION STRATEGY

PHASES OF REHABILITATION

Refer to **pages 25- 34** *for the Rehabilitation Plans and Sections*

Progressive rehabilitation on the exposed quarry faces and riparian planting along the Mangapū Tributary are integral to mitigating landscape effects, natural character effects and restoring ecological values over the life of the quarry. Based on this, the following phases of rehabilitation are proposed throughout various stages of the quarry.

Phases 1 to 4 comprise the active rehabilitation programme for the quarry and involve the deliberate establishment of indigenous vegetation through planned native planting. These phases focus on progressively rehabilitating upper quarry benches, haul road batters, riparian areas, and associated landforms as they become available, with the objective of stabilising slopes, mitigating visual effects, and restoring landscape and ecological values using locally sourced native species.

By contrast, following the completion of Stage 8, all remaining areas of the quarry benches will be subject to passive rehabilitation. Passive rehabilitation will rely on natural regeneration influenced by the surrounding indigenous vegetation and earlier planting efforts, with minimal direct intervention. It is anticipated that some exotic or weedy species may establish during this process; however, these will be managed and removed. Over time, this combined approach of active and passive rehabilitation is expected to result in a re-vegetated landform that integrates with the surrounding landscape character and ecological context.

PHASE 1 (STAGES 1 AND 2)

Phase 1 of the landscape rehabilitation focuses on early visual integration, landscape mitigation, and riparian restoration. This phase includes native revegetation of the upper quarry benches above the Mangapū Stream Tributary realignment to soften quarry landforms and improve visual integration with the surrounding landscape. Native planting is also undertaken on 118 Judge Richardson Drive and across the other offset sites to mitigate the loss of indigenous vegetation within the ONL. In parallel, riparian and native planting is to be established along the realigned Mangapū Stream Tributary to create a functioning riparian corridor, enhance natural character and ecological values, and stabilise stream margins, contributing to long-term landscape and natural character restoration outcomes.

PHASE 2 (STAGE 6)

Phase 2 of the landscape rehabilitation continues the progressive restoration of quarry areas as they become available. This phase involves native revegetation along the realigned western haul road.

Planting in these locations is intended to soften the appearance of quarry infrastructure, reduce the vegetation gap of the haul road, and extend native vegetation cover across disturbed landforms, supporting longer-term visual coherence with adjoining rural landscapes.

PHASE 3 (STAGE 7)

Phase 3 marks the commencement of rehabilitation on quarry benches (aside from the slopes above Mangapū Stream Tributary) and the Hunua Pit OBDA. From this stage, native revegetation is initiated on the upper quarry benches, where practicable, on the southern slopes above 90 RL and the southeastern face of the Symonds Hill Pit OBDA will be hydroseeded (towards the end of Stage 7). Stage 7 also includes revegetation of the cut faces associated with the realigned western haul road. These works are intended to stabilise exposed landforms, soften the appearance of batter slopes, and begin the progressive re-establishment of native vegetation to improve long-term visual and landscape integration.

PHASE 4 (STAGE 8)

Phase 4 of the rehabilitation programme involves more extensive bench and landform restoration as quarrying progresses. This phase includes native revegetation of the upper quarry benches from 90 RL and above, together with hydroseeding across the remainder of the Symonds Hill Pit OBDA. Rehabilitation planting will be progressively implemented on the benches in an anticlockwise direction to align with the sequencing of quarry operations, ensuring that disturbed areas are stabilised and revegetated as they become available. These works are intended to progressively soften quarry landforms, reestablish indigenous vegetation cover, and support long-term landscape and ecological integration.

PASSIVE REHABILITATION

Passive rehabilitation will be undertaken on the remaining quarry bench slopes below 90 RL. This approach will rely on natural regeneration or hydroseeding of native seeds, supported by nearby native planting that provides seed sources. Exotic and weedy species may also establish in these areas; however, these will be actively managed and removed. Over time, passive rehabilitation is expected to contribute to slope stabilisation and to the gradual integration of the lower bench slopes into the surrounding landscape.

REHABILITATION PLANTING

TYPE OF PLANTING	PHASE (HECTARES)			
	1	2	3	4
Bench Planting	1.022		6.39	11.83
Tributary Corridor Planting	0.33			
Revegetation of Western Haul		0.25		
Revegetation of Western Haul Road Slopes			0.55	
OBDA (Hunua Pit)			25.8	
Total per Phase (ha)	**1.352**	**0.25**	**32.74**	**11.83**
Total overall	**46.172 ha**			

4.0 REHABILITATION STRATEGY

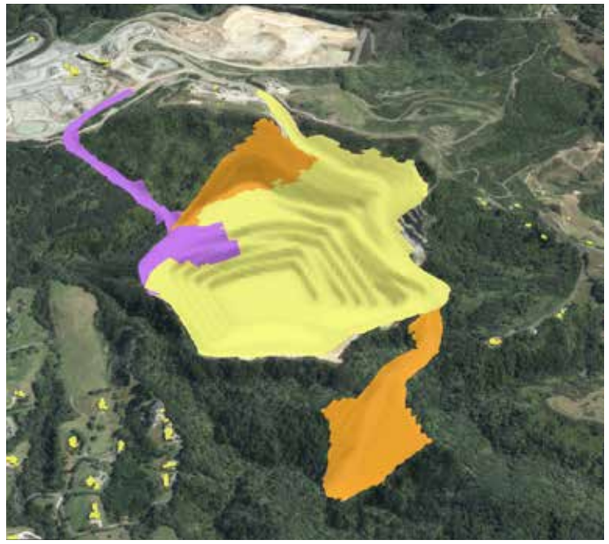
QUARRY DEVELOPMENT STAGES

The following images illustrate the quarry development stages in 3D as they progress over the life of the quarry.

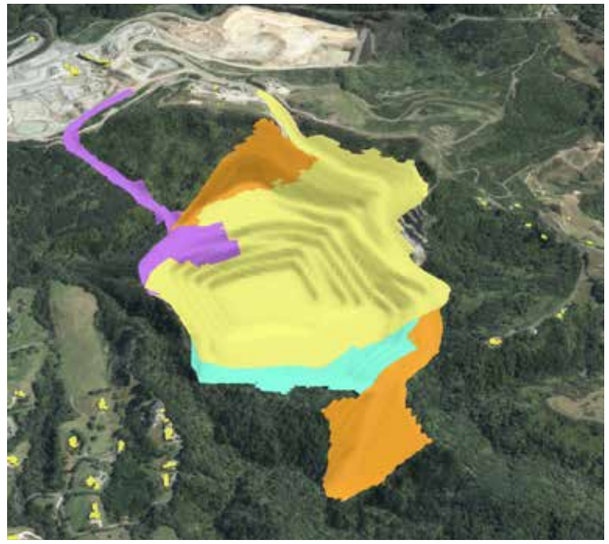
LEGEND

- Stage 0 (consented)
- Stage 1
- Stage 2
- Stage 3
- Stage 4
- Stage 5
- Stage 6
- Stage 7
- Stage 8

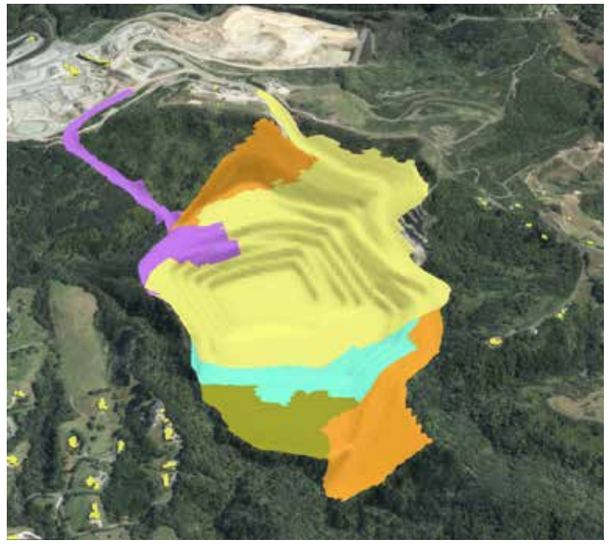
STAGE 1



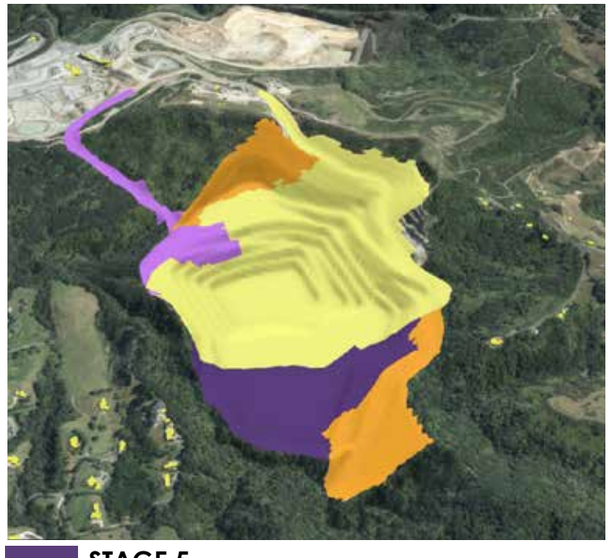
STAGE 2



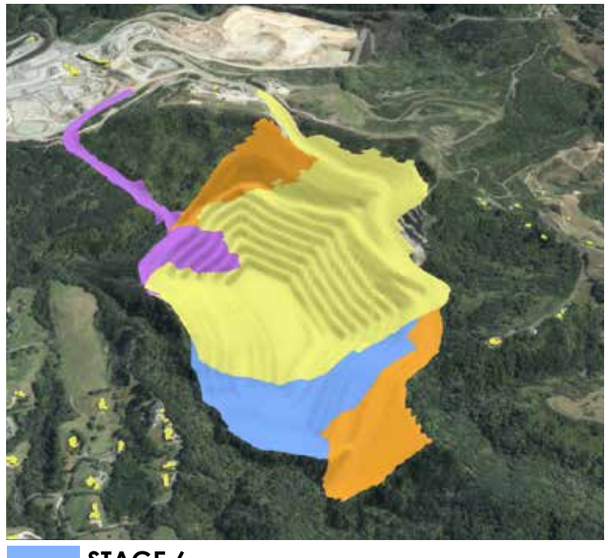
STAGE 3



STAGE 4

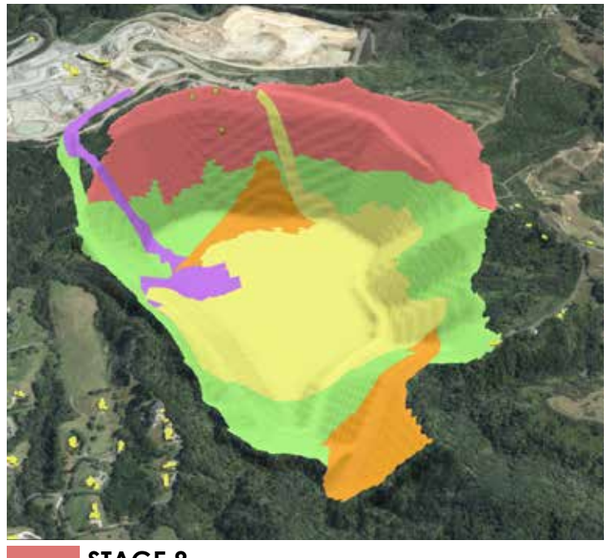


STAGE 5



STAGE 6

STAGE 7



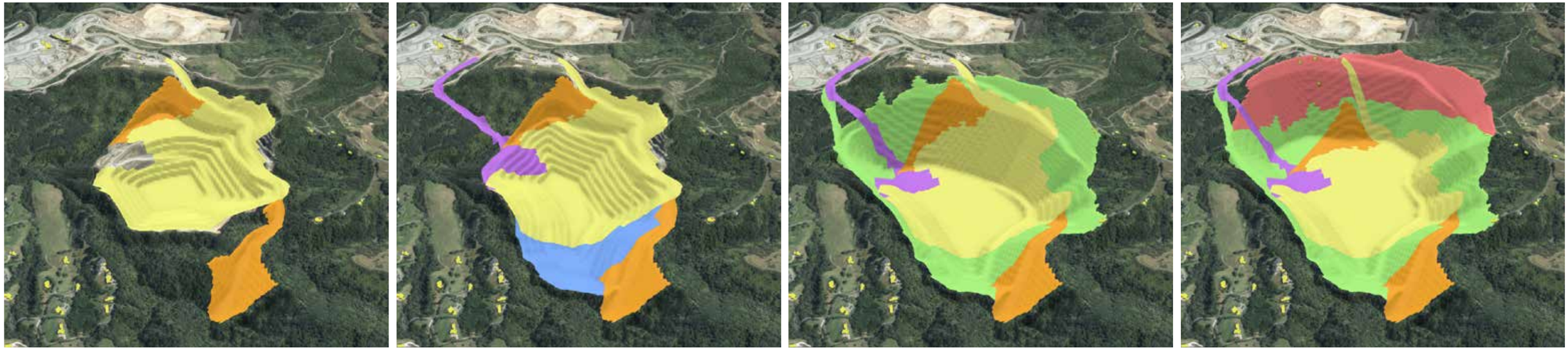
STAGE 8

4.0 REHABILITATION STRATEGY

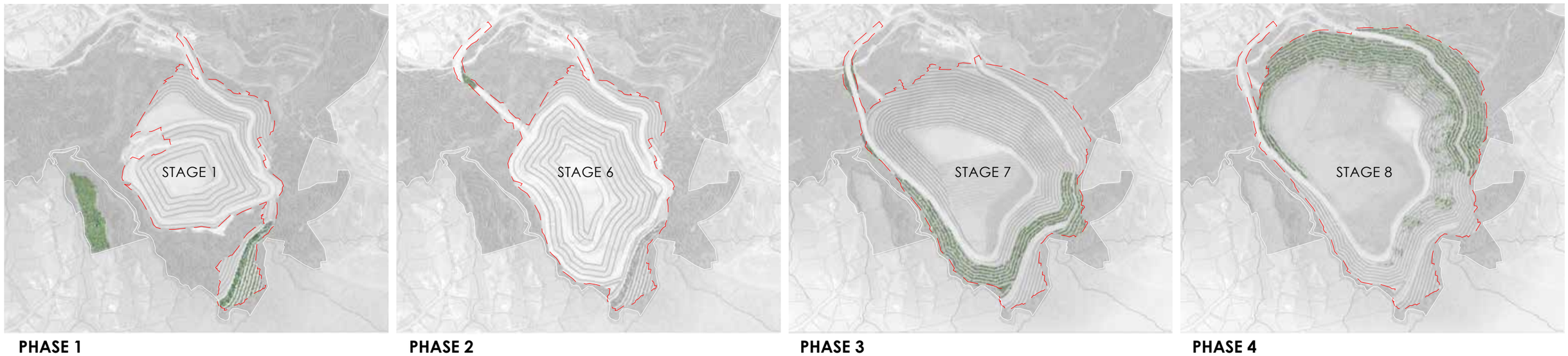
PHASES OF REHABILITATION

The following images illustrate the quarry development stages in 3D as they progress over the life of the quarry and their relationship to the phases of rehabilitation.

STAGES OF THE QUARRY DEVELOPMENT



PHASES OF REHABILITATION



PHASE 1 **PHASE 2** **PHASE 3** **PHASE 4**

PHASE 1 SYMONDS HILL PIT REHABILITATION PLAN

SECTION B

SITE BOUNDARY

Coal Mine Rd

Mangapū Stream

STAGE 1

Middleton Rd

C MITIGATION PLANTING

SECTION A

C

Mangapū Stream

B

A

B TRIBUTARY REALIGNMENT PLANTING

A BENCH REHABILITATION

Judge Richardson Dr

LEGEND

- Site Boundary
- Stage 1 Quarry Development Area
- Symonds Hill Pit (consented)
- Existing Waterways
- Mangapū Stream Tributary
- Mangapū Stream Tributary Realignment

PLANTING AREAS

PHASE 1

- (A) Bench Rehabilitation
- (B) Mangapū Stream Tributary Realignment Planting
- (C) Mitigation Planting

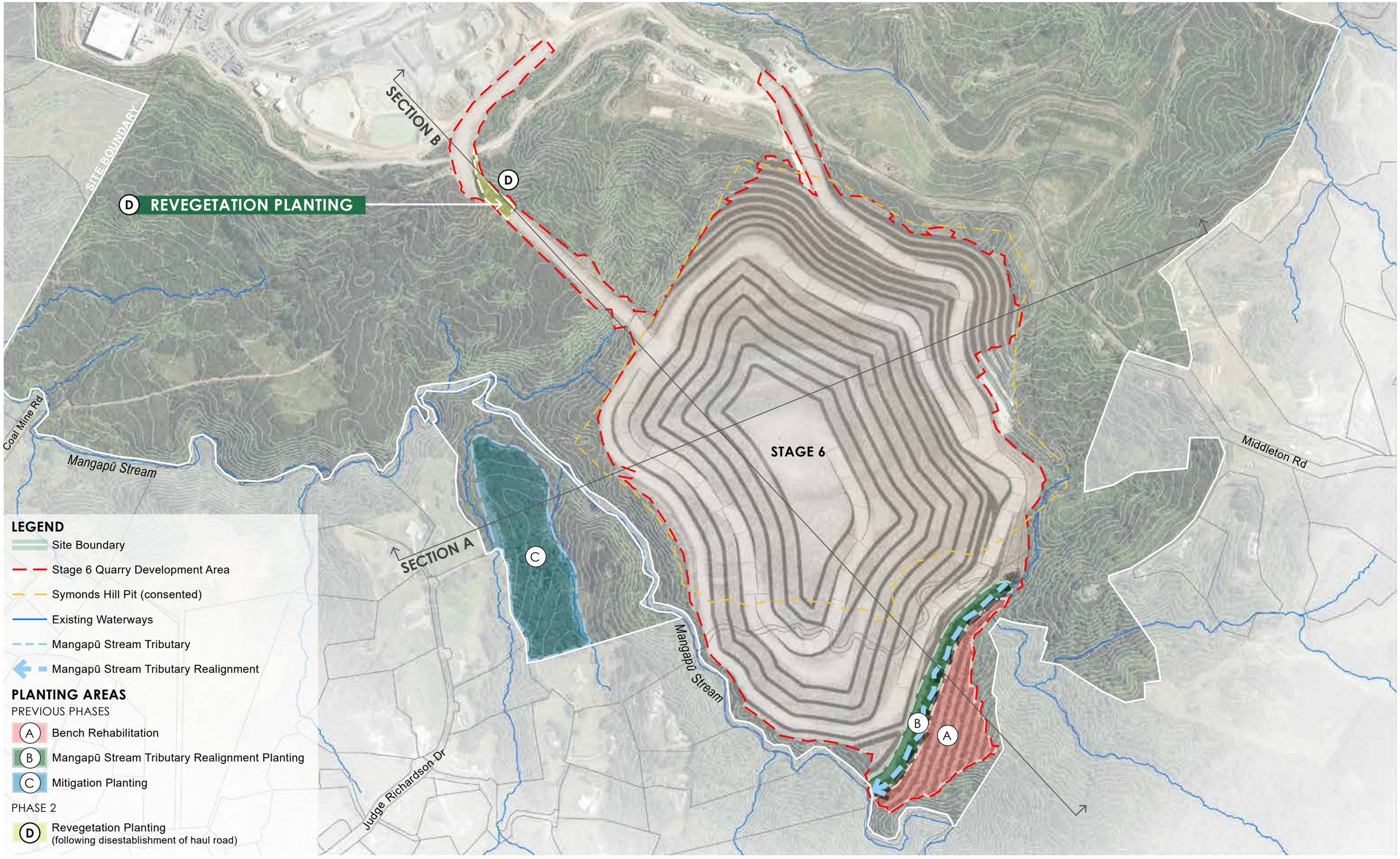
0 100 200 m

1:6,000 @ A3

INDICATIVE TIME PERIOD (YEARS)

0 5 10 15 20 25 30 35 40 45 50

PHASE 2 SYMONDS HILL PIT REHABILITATION PLAN



PHASE 3 SYMONDS HILL PIT REHABILITATION PLAN

HUNUA PIT OVERBURDEN DISPOSAL AREA

SECTION B

SITE BOUNDARY

D

E

E REVEGETATION PLANTING

E

Coal Mine Rd

Mangapū Stream

STAGE 7

OBDA
(PARTIALLY HYDROSEEDED)

Middleton Rd

SECTION A

C

Mangapū Stream

F

F BENCH REHABILITATION

F

B

A

Judge Richardson Dr

LEGEND

- Site Boundary
- Stage 7 Quarry Development Area
- Symonds Hill Pit (consented)
- Existing Waterways
- Mangapū Stream Tributary
- Mangapū Stream Tributary Realignment

PLANTING AREAS

PREVIOUS PHASES

- A Bench Rehabilitation
- B Mangapū Stream Tributary Realignment Planting
- C Mitigation Planting
- D Revegetation Planting (following disestablishment of haul road)

PHASE 3

- E Revegetation Planting
- F Bench Rehabilitation

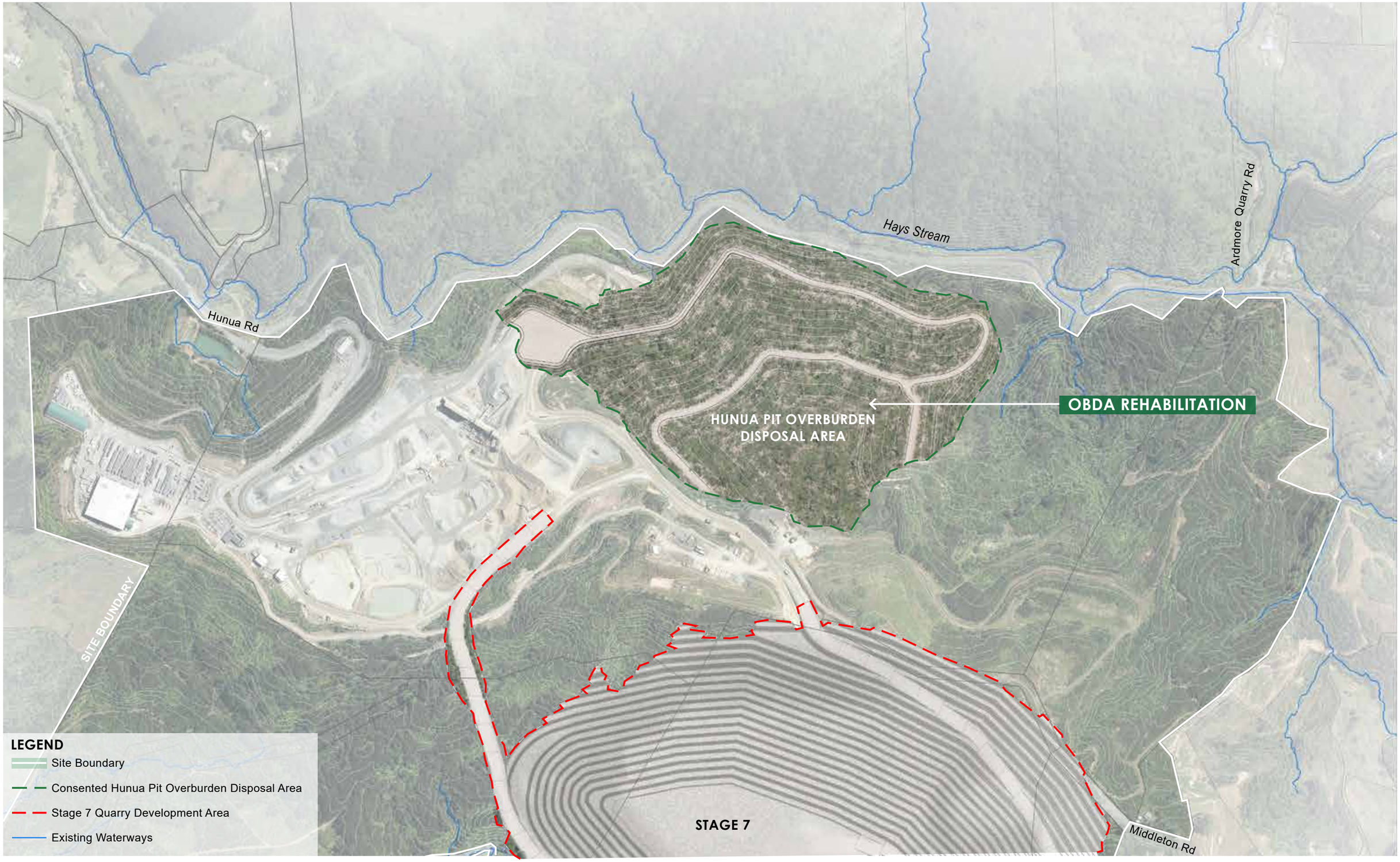
0 100 200 m

1:6,000 @ A3

INDICATIVE TIME PERIOD (YEARS)

0 5 10 15 20 25 30 35 40 45 50

PHASE 3 HUNUA PIT OBDA REHABILITATION PLAN



PHASE 4 SYMONDS HILL PIT REHABILITATION PLAN

HUNUA PIT OVERBURDEN DISPOSAL AREA

SECTION B

SITE BOUNDARY

G BENCH REHABILITATION

G

H

H PASSIVE REHABILITATION

STAGE 8

OBDA (HYDROSEEDED)

Middleton Rd

Mine Rd

Mangapū Stream

SECTION A

Mangapū Stream

Judge Richardson Dr

LEGEND

- Site Boundary
- Stage 8 Quarry Development Area
- Symonds Hill Pit (consented)
- Existing Waterways
- Mangapū Stream Tributary
- Mangapū Stream Tributary Realignment

PLANTING AREAS

PREVIOUS PHASES

- A Bench Rehabilitation
- B Mangapū Stream Tributary Realignment Planting
- C Mitigation Planting
- D Revegetation Planting (following disestablishment of haul road)
- E Revegetation Planting
- F Bench Rehabilitation

PHASE 4

- G Bench Rehabilitation
- H Passive Rehabilitation

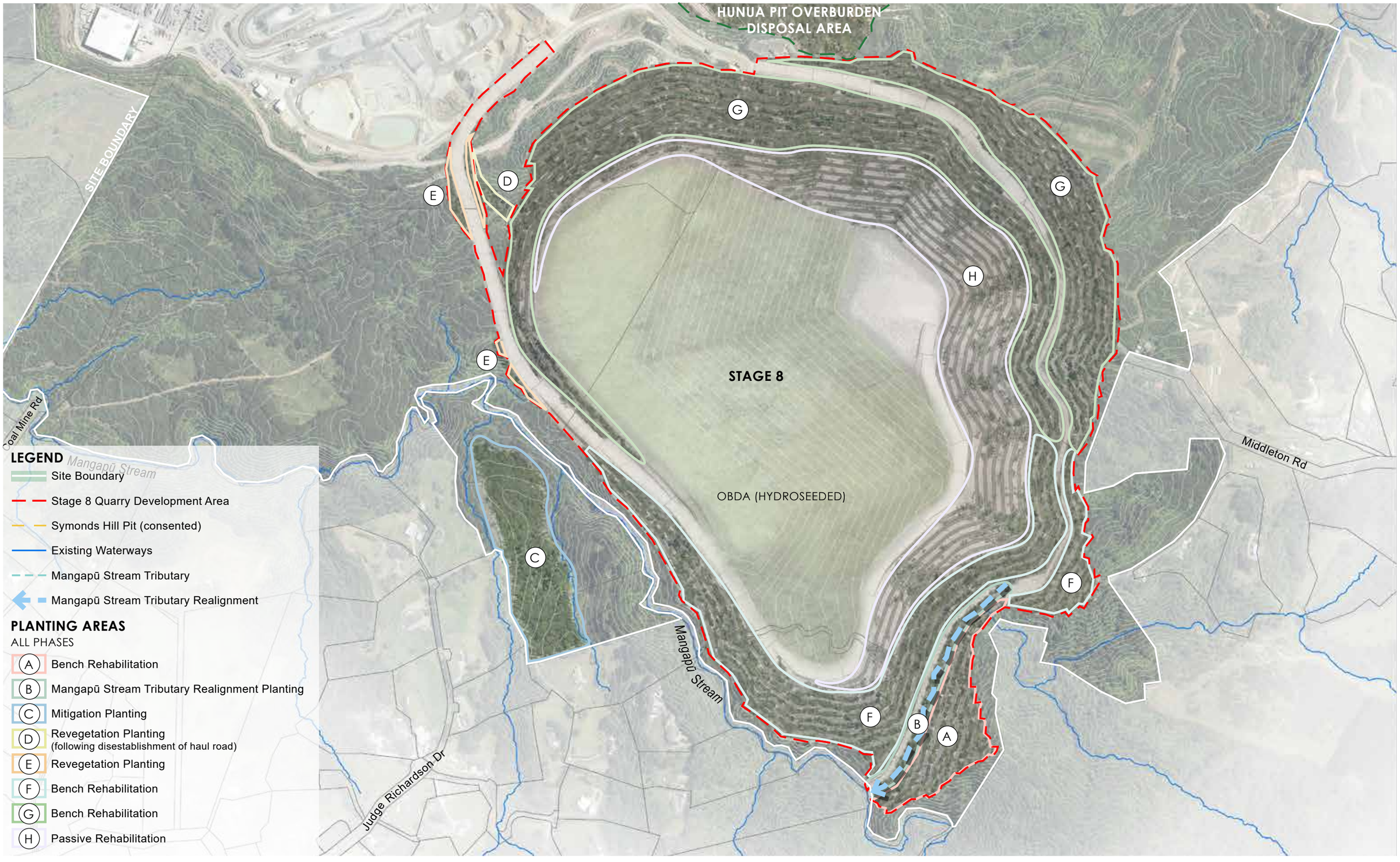
0 100 200 m

1:6,000 @ A3

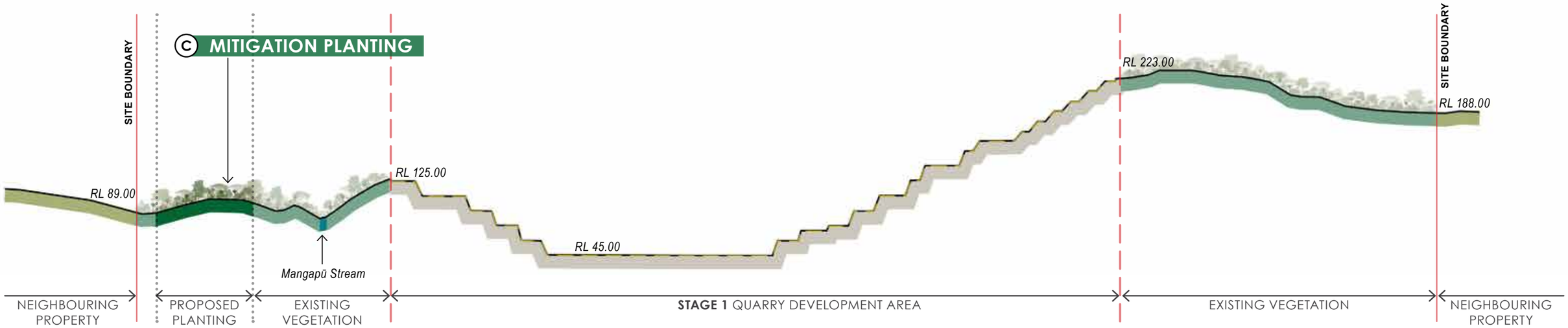
INDICATIVE TIME PERIOD (YEARS)

0 5 10 15 20 25 30 35 40 45 50

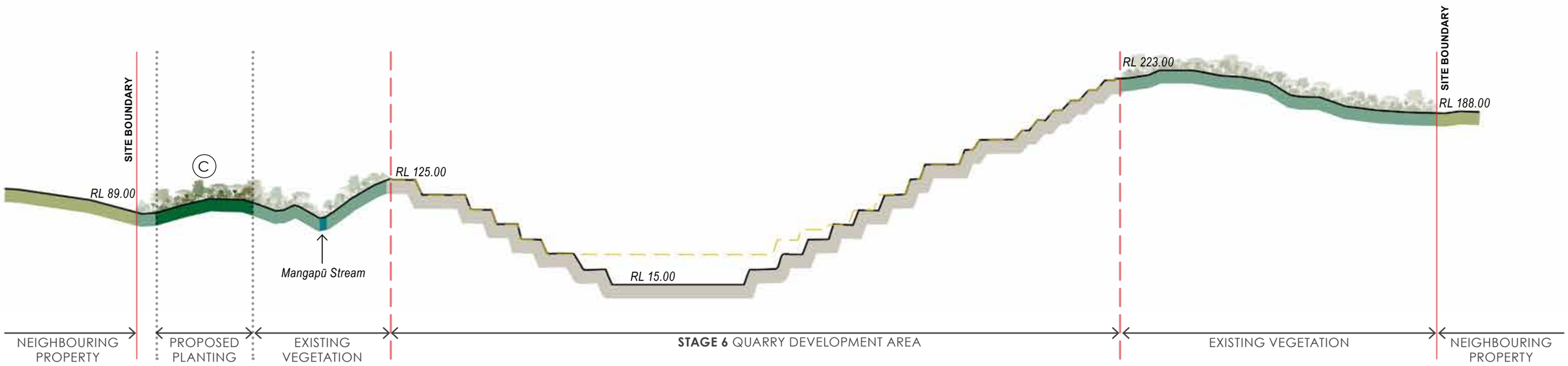
OVERALL SYMONDS HILL PIT REHABILITATION PLAN AT COMPLETION



SECTION A - PHASES 1 + 2



PHASE 1
SCALE 1:4000 (A3)



PHASE 2
SCALE 1:4000 (A3)

LEGEND

- Site Boundary
- Stage of Quarry Development Area
- Proposed Ground Level
- Proposed OBDA Ground Level
- Symonds Hill Pit (consented)
- Existing Ground Level

PLANTING AREAS - (Planting shown at mature height)

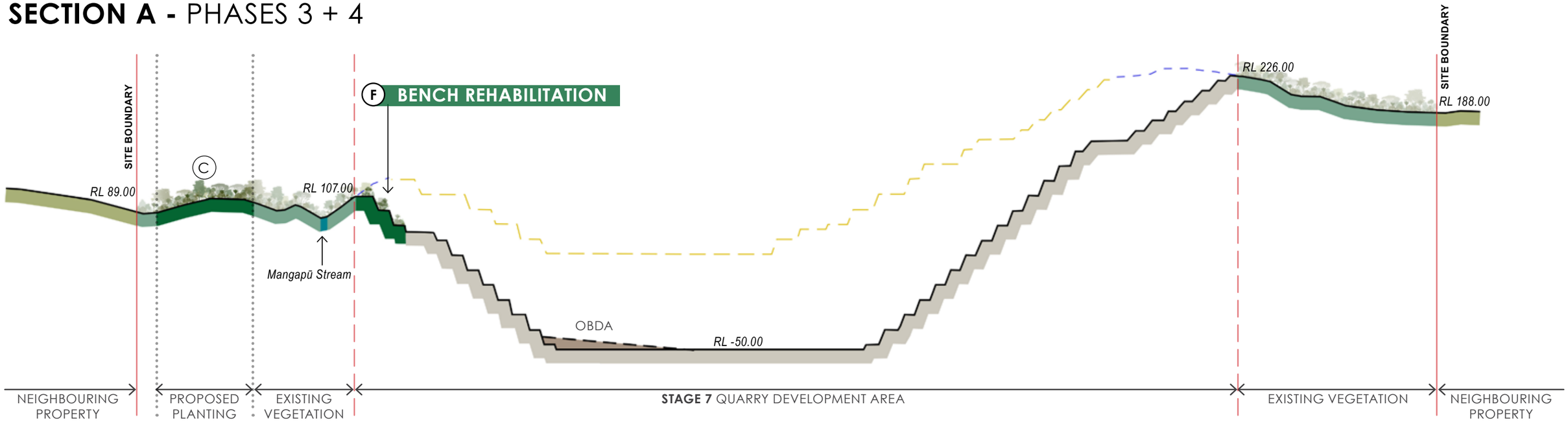
PHASE 1
- A Bench rehabilitation
- B Mangapū Stream Tributary Realignment Planting
- C Mitigation planting

PHASE 2
- D Revegetation planting (following disestablishment of haul road)

PHASE 3
- E Revegetation planting
- F Bench rehabilitation

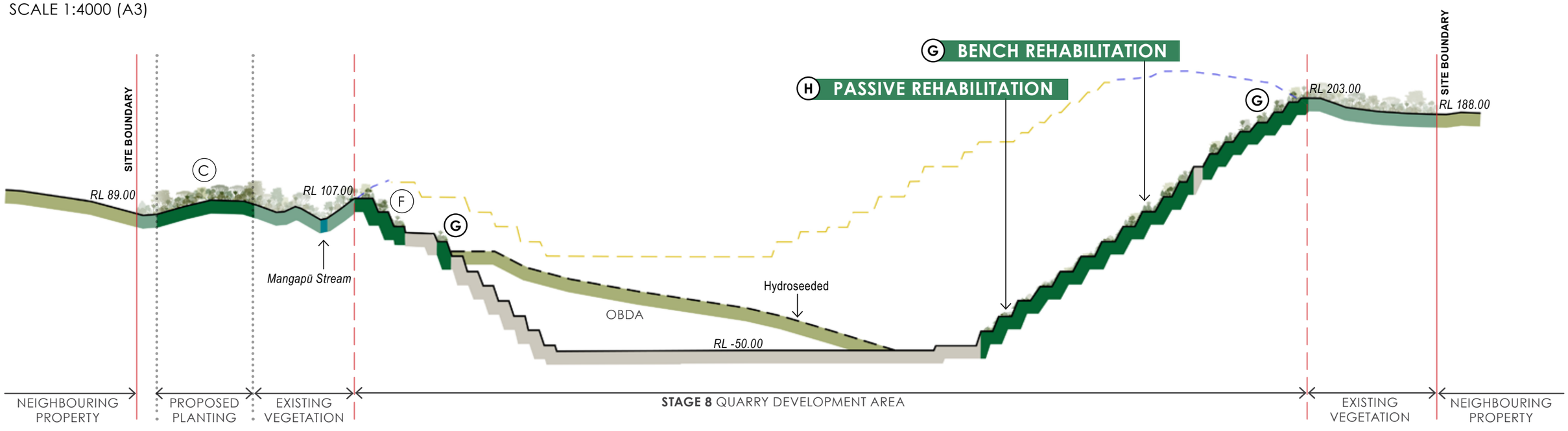
PHASE 4
- G Bench rehabilitation
- H Passive rehabilitation

SECTION A - PHASES 3 + 4



PHASE 3

SCALE 1:4000 (A3)



PHASE 4

SCALE 1:4000 (A3)

LEGEND

- Site Boundary
- Stage of Quarry Development Area
- Proposed Ground Level
- Proposed OBDA Ground Level
- Symonds Hill Pit (consented)
- Existing Ground Level

PLANTING AREAS - (Planting shown at mature height)

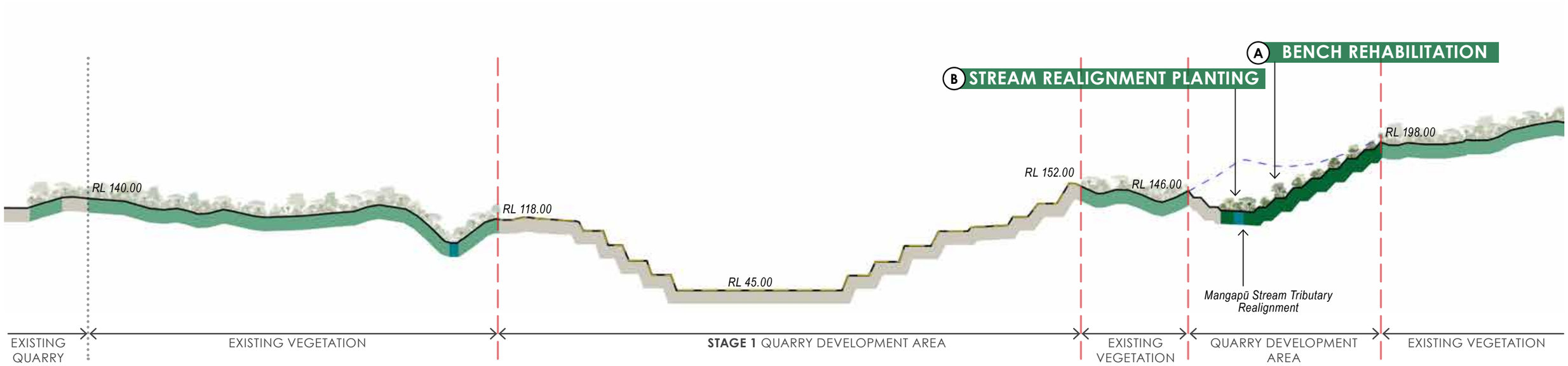
PHASE 1
- A Bench rehabilitation
- B Mangapū Stream Tributary Realignment Planting
- C Mitigation planting

PHASE 2
- D Revegetation planting (following disestablishment of haul road)

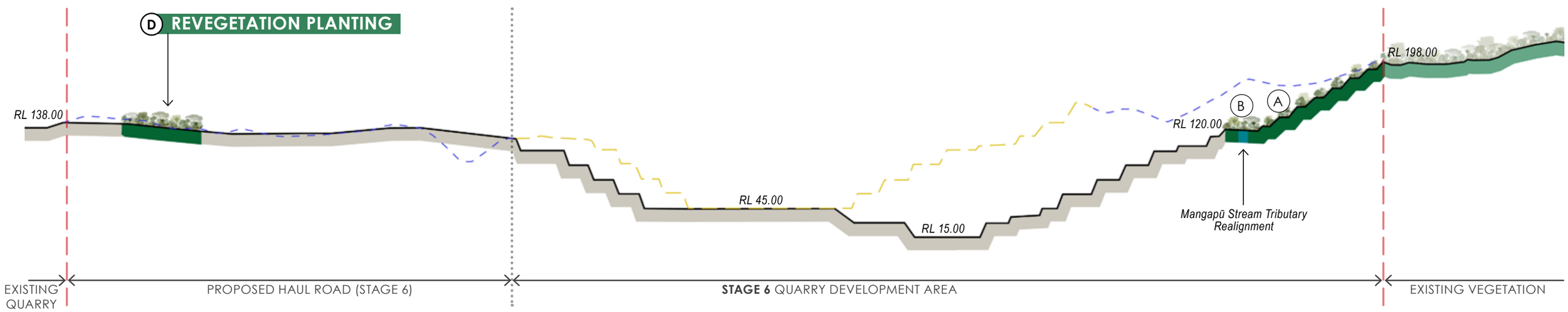
PHASE 3
- E Revegetation planting
- F Bench rehabilitation

PHASE 4
- G Bench rehabilitation
- H Passive rehabilitation

SECTION B - PHASES 1 + 2



PHASE 1
SCALE 1:4000 (A3)



PHASE 2
SCALE 1:4000 (A3)

LEGEND

- Site Boundary
- Stage of Quarry Development Area
- Proposed Ground Level
- Proposed OBDA Ground Level
- Symonds Hill Pit (consented)
- Existing Ground Level

PLANTING AREAS - (Planting shown at mature height)

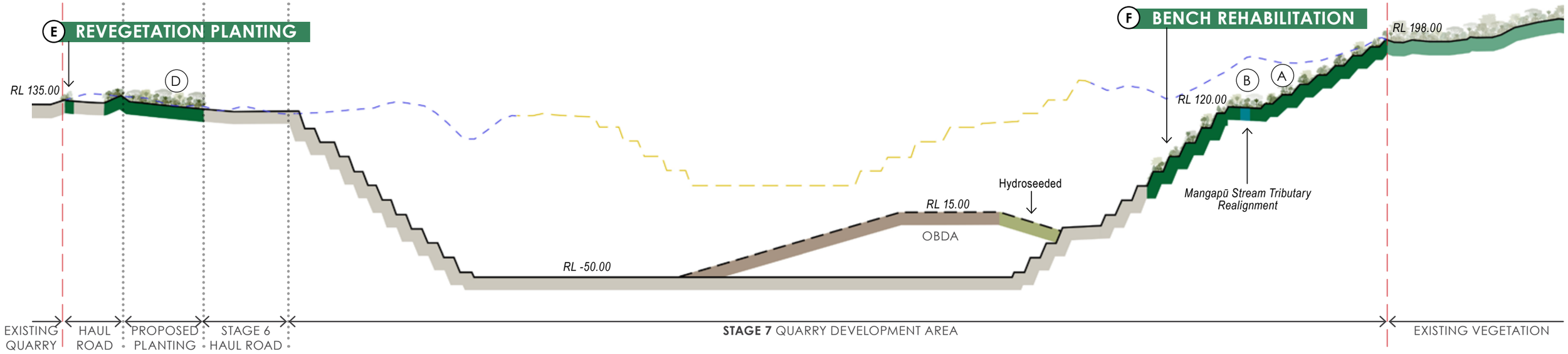
PHASE 1
- (A) Bench rehabilitation
- (B) Mangapū Stream Tributary Realignment Planting
- (C) Mitigation planting

PHASE 2
- (D) Revegetation planting (following disestablishment of haul road)

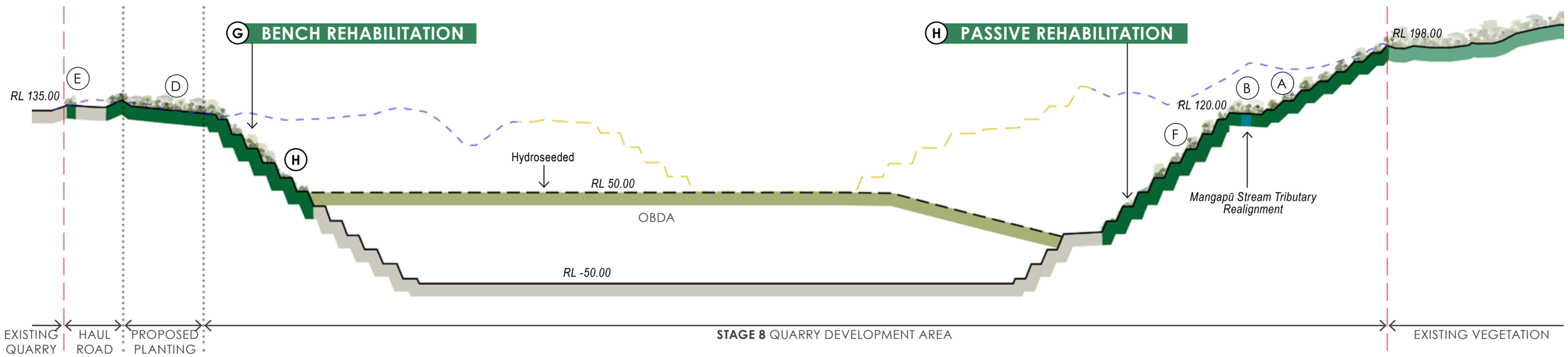
PHASE 3
- (E) Revegetation planting
- (F) Bench rehabilitation

PHASE 4
- (G) Bench rehabilitation
- (H) Passive rehabilitation

SECTION B - PHASES 3 + 4



PHASE 3
SCALE 1:4000 (A3)



PHASE 4
SCALE 1:4000 (A3)

LEGEND

- Site Boundary
- Stage of Quarry Development Area
- Proposed Ground Level
- Proposed OBDA Ground Level
- Symonds Hill Pit (consented)
- Existing Ground Level

PLANTING AREAS - (Planting shown at mature height)

PHASE 1
- A Bench rehabilitation
- B Mangapū Stream Tributary Realignment Planting
- C Mitigation planting

PHASE 2
- D Revegetation planting (following disestablishment of haul road)

PHASE 3
- E Revegetation planting
- F Bench rehabilitation

PHASE 4
- G Bench rehabilitation
- H Passive rehabilitation

5.0
QUARRY REHABILITATION PROCESS

5.0 QUARRY REHABILITATION PROCESS

STAGING OF EXTRACTION WORKS

Integrating rehabilitation with the extraction sequence ensures that works occur as soon as quarrying concludes in any given area, while also avoiding rehabilitation effort being invested in areas that may later be disturbed. A coordinated staging approach is therefore essential to achieving efficient, timely, and enduring rehabilitation outcomes.

VEGETATION PROTECTION

Existing vegetation remnants play a critical role in rehabilitation by providing seed sources, shelter, and habitat for native fauna, which in turn support natural seed dispersal. Prior to the commencement of each extraction stage, the extent of quarry activities will be clearly defined, potentially including on-ground marking, to avoid accidental removal of vegetation intended to be retained.

VEGETATION REMOVAL AND STOCKPILING

Where practicable, vegetation stripped from the Site will be mulched and stockpiled for later use. The upper soil layers (generally the top 200 mm) will also be carefully stripped and stockpiled separately from underlying subsoils and overburden to preserve their value as growth media. These materials provide essential nutrients, organic matter, and seed banks for establishing vegetation cover during rehabilitation. Mulch may be blended with topsoil to enhance substrate quality for planting and natural regeneration.

Stockpiles will be located where they will not be compacted by machinery, kept to a maximum height of 1.5m to avoid anaerobic conditions that reduce soil quality, and grassed to provide stability and reduce dust. A coordinated programme of stripping, stockpiling, and redistribution will be employed to minimise deterioration of these materials.

In addition to mulch and topsoil, low-value quarry by-products such as overburden, grit, and sludge may be blended to create a suitable planting substrate. This blending can improve both the physical structure and fertility of fill materials, although requirements will depend on substrate properties and will be evaluated during the initial years of the rehabilitation programme.

QUARRY FINISH – LANDFORM MODIFICATION

Benches and faces created through extraction typically run along contour lines, contrasting with the natural “grain” of the landscape. Softening, reshaping, or breaking up these features is key to reducing their visual impact. Landform modification will be undertaken progressively as extraction is completed and will include preparation of areas for revegetation. This may involve creating scree slopes, ripping benches, carefully returning overburden to soften terraces and faces, and applying growing media. Some benching will remain necessary for drainage and access needs.

Before scree material is deposited, bench surfaces will be ripped to create fractured rock zones, and faces scarified to key in scree and topsoil. These measures minimise slip planes between materials, improve moisture retention, and provide secure rooting environments.

DRAINAGE

Because benches can direct and concentrate water flow, drainage design is essential to prevent scouring and erosion that could damage plantings. Cut-off drains or berms will be installed on benches to protect replaced soils, create stable platforms for plant establishment, and facilitate safe maintenance access. These drains and berms will be designed to retain water on benches and release it slowly to the surrounding environment. Given that rehabilitation substrates will generally be free-draining aggregates, retaining moisture will be important for the successful establishment and progressive development of vegetation communities.

SOIL PREPARATION

Soil preparation is a critical component of successful rehabilitation, both for areas that will be left to regenerate naturally and for areas intended for planting. With appropriate planning, much of the required soil material can be sourced onsite through mulching vegetation, stockpiling topsoil, and incorporating suitable quarry by-products. While imported topsoil may be required in some situations, the strategy does not rely on it as a primary source.

The appropriate blend of rubble, fill, and topsoil will be determined on an area/location-specific basis, depending on substrate characteristics and the planting requirements of each area. Fertiliser needs will also be considered as part of developing the final soil mix. As extraction progressively concludes, soils will be stabilised to minimise erosion and dust. Where practicable, benches will be ripped to a depth of approximately 500 mm before the placement of coarse aggregates, overburden, and surface soils as part of the rehabilitation process.

REVEGETATION

Revegetation is focused on achieving rapid visual greening of the finished landform and establishing vegetation communities capable of developing into self-sustaining ecosystems over time. The emphasis is on reinstating functional and structural vegetation patterns suited to the engineered substrates and exposed conditions characteristic of rehabilitated quarry landscapes, rather than attempting to replicate preexisting species compositions.

The engineered landform typically presents harsh and highly variable conditions, ranging from exposed edges and limited soil depths to rapidly draining substrates, meaning that only certain native species are well adapted to establishing and thriving in these environments.

Revegetation, therefore, relies on species that can tolerate these conditions while progressively improving soil structure, shading substrates, and facilitating natural regeneration processes.

Species selection is guided by characteristics that support successful revegetation outcomes, including:

- High survival rates under planted conditions;
- Tolerance to environmental extremes, such as persistently wet or seasonally dry microsites and areas exposed to wind;
- Fast early growth combined with the ability to persist and suppress weeds;
- Branching growth forms that provide early visual screening of cut faces and shade;
- Attributes that attract birds, such as seed or nectar, to encourage natural dispersal and recruitment of additional native species; and
- Relatively long lifespans, ensuring vegetation stability and minimising opportunities for invasive species to colonise.

The primary objective for revegetating the more exposed upper benching is to establish an initial visual greening that can then be managed toward the long term goal of restoring a self sustaining native plant community. Achieving this requires ongoing assessment of plant survival and growth for a range of native species, with planting plans refined over time as monitoring results and lessons from earlier revegetation phases become available.

Through this approach, revegetation becomes the key driver of ecological recovery and visual integration of the final landform. It supports natural succession processes while ensuring that early and effective visual mitigation is achieved.

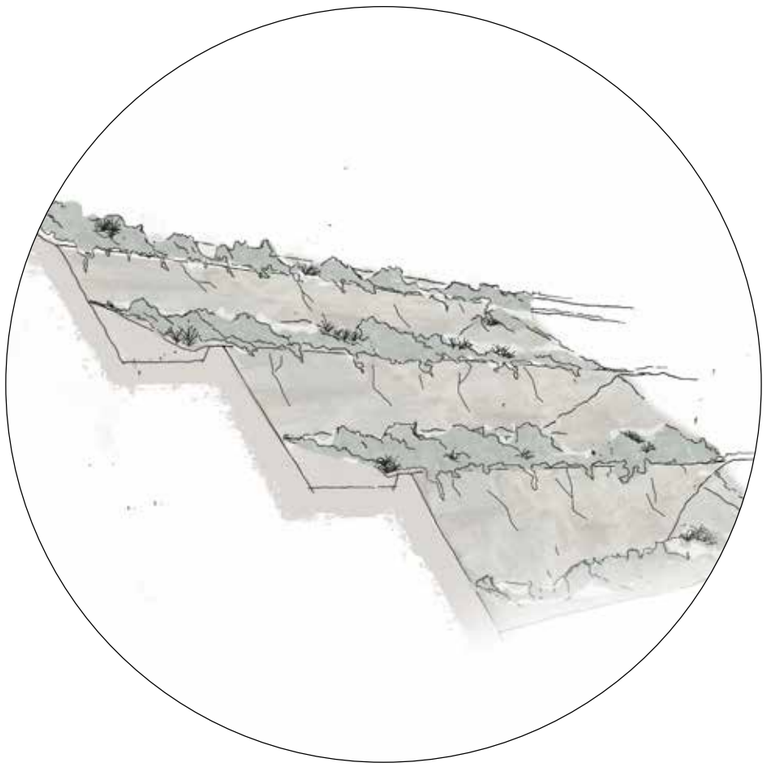
NATURAL REGENERATION AND WEED MANAGEMENT

In the short term, hydroseeding or other alternative such as straw mulch and grass seeding helps to stabilise cut and batter slopes, reduce runoff and erosion, bind soils preventing dust problems, provides rapid visual greening and inhibits invasion by some pest plants. Hydroseeding needs to be carried out very soon after completion of preparatory works, before the cut face and batter slopes dry out. Coordinating the hydroseeding with withdrawal from the face is important. In some instances, no further revegetation work, apart from hydroseeding / hydro mulching would be required. Experimentation with native grass, shrub, moss and lichen species could be undertaken.

5.0 QUARRY REHABILITATION PROCESS

BENCH REHABILITATION DIAGRAMS

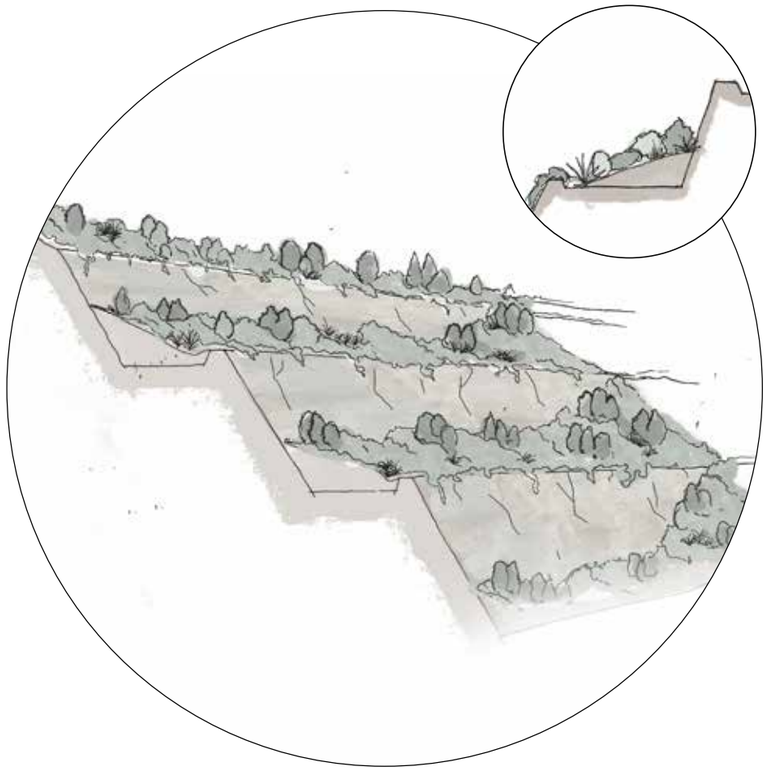
The following diagrams illustrate the progressive rehabilitation of benches at three key stages: establishment phase, Year 10, and Year 35. Together, they demonstrate the gradual stabilisation of landforms and the long-term establishment of native vegetation through targeted planting and to a lesser extent natural succession.



ESTABLISHMENT PHASE

At the establishment phase, rehabilitation works will focus on landform stabilisation and surface preparation. Benches will be reshaped and contoured to reduce sharp edges and create stable batters, with exposed rock faces retained where appropriate to reflect underlying geology. Scraped bench surfaces will exhibit areas of exposed rock, thin growth media, and roughened textures designed to promote moisture retention and provide microsites for plant establishment.

Revegetation will consist of colonising native species capable of establishing in exposed, low-nutrient conditions. These pioneer plantings will primarily provide ground cover and erosion control, rather than dense vegetation. Planting density will be vary depending on ground conditions across the benches however space for natural regeneration, will be incorporated. The overall visual character will remain open, with rehabilitation clearly transitioning from an engineered surface toward a natural landform.

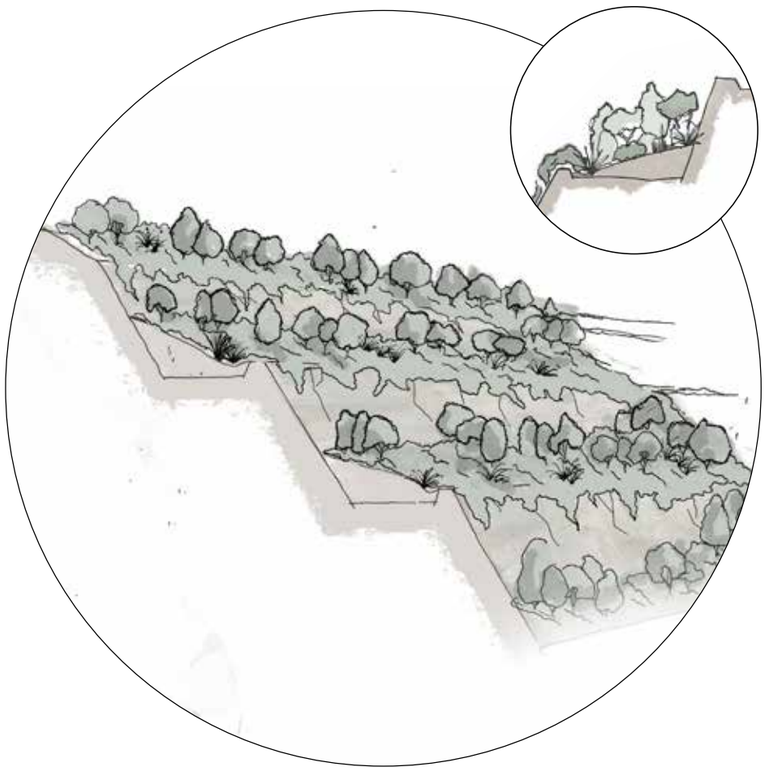


YEAR 10

By approximately Year 10, rehabilitated benches are expected to show successful establishment of pioneer vegetation, with increasing plant cover across bench surfaces and batters. Colonising species will have stabilised soils, reduced erosion, and begun modifying site conditions by improving organic matter and moisture retention.

Vegetation structure at this stage will be predominantly low-growing, with scattered shrubs beginning to emerge in favourable locations such as bench edges, drainage lines, and sheltered microsites. Exposed rock faces will remain visible but increasingly framed by vegetation, helping to soften their appearance and integrate them more effectively into the surrounding landscape.

Natural regeneration is anticipated to occur alongside the plantings, contributing to increased species diversity. While some areas may still appear sparsely vegetated, the overall landform will present as stable and progressively naturalised, with reduced visual contrast compared to the establishment stage.



YEAR 35

By Year 35, rehabilitation is expected to have matured into a largely self-sustaining vegetated landform. Pioneer species will be well established and, in some areas, gradually complemented by longer-lived shrubs and small trees consistent with the surrounding vegetation patterns.

Vegetation cover will be substantially denser, with a more complex structure and increased ecological function. Benches and batters will be largely integrated into the wider landscape, with exposed rock faces expressed as natural features rather than disturbed surfaces.

At this stage, responsive management is expected to be minimal, with vegetation stability, erosion control, and visual integration largely achieved through natural processes. The rehabilitated benches will contribute positively to the overall landscape character and ecological resilience of the Site.

5.0 QUARRY REHABILITATION PROCESS

BENCH REHABILITATION SECTION

TYPICAL REHABILITATION METHODOLOGY

Establish hardy native vegetation on benches and deposited faces, with natural regeneration to increase biodiversity at later stages.

Implement scrambling plants to reduce visual impact of cut faces.

Reduce the visual impact of the bench face by placing depositing scree, comprising overburden and growing medium, at the base of the batters. This material should taper out below the lower bank edge. Planting will be established on the placed material, with slopes not exceeding a gradient of 1:3.

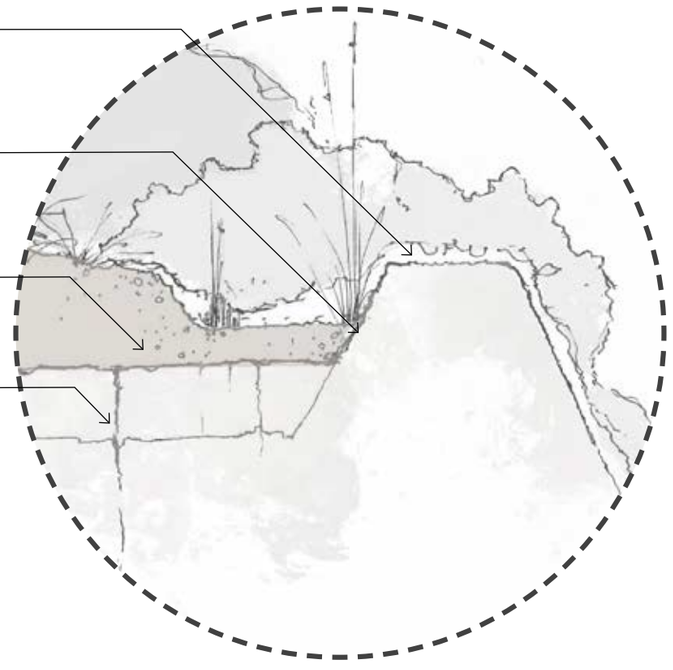
Rip bench and install cut off drain to facilitate drainage within each bench area. Refer to zoomed in detail below.

Rehabilitation planting including creeping groundcover to cut batter faces.

Cut off drain to facilitate bench drainage, planted with wet tolerant plants. minimum depth 500mm.

Deposition material (depth varies) minimum 500mm depth.

Rip bench to a minimum depth of 500mm.



CUT OFF CHANNEL/BENCHING

TYPICAL SECTION

NOT TO SCALE

5.0 QUARRY REHABILITATION PROCESS

PRECEDENT IMAGES OF QUARRY BENCH REHABILITATION

2012

2016

PRECEDENT IMAGES OF QUARRY BENCH REHABILITATION:

BELMONT QUARRY, LOWER HUTT, WELLINGTON

The images to the left and below illustrate how quarry bench rehabilitation can be successfully “re-greened” over time, helping to soften the appearance of exposed quarry faces. These examples show bench rehabilitation at Belmont Quarry, operated by Winstone Aggregates in Lower Hutt, Wellington, with photographs from 2012, 2016, and 2025.

Quarry bench rehabilitation can have a significant influence on how successfully the landscape recovers, even when viewed from a distance. The way benches are shaped, treated, and planted determines how well vegetation can establish, blend, and eventually naturalise into the wider landform. When care is taken with contouring, soil placement, and species selection, these benches can support hardy plant communities that soften visual impacts and accelerate landscape integration. In this way, well-planned treatment of each bench makes a measurable difference in the long-term appearance and performance of the rehabilitated quarry face.

2025

5.0 QUARRY REHABILITATION PROCESS
PRECEDENT IMAGES OF OBDA REHABILITATION

PRECEDENT IMAGES OF OBDA REHABILITATION: BELMONT QUARRY, LOWER HUTT, WELLINGTON

The images above illustrate how OBDA rehabilitation can be successfully “re-greened” over time, helping to integrate the exposed soil and earth. These examples show OBDA rehabilitation at Belmont Quarry, operated by Winstone Aggregates in Lower Hutt, Wellington, with photographs from 2010, 2012, 2014, and 2016. OBDA rehabilitation can strongly influence how well the surrounding landscape recovers and integrates over time. The way batter slopes are shaped, stabilised, and planted determines how successfully vegetation can establish, blend, and eventually naturalise across the modified landform. When care is taken with contouring, soil placement, and appropriate species selection, these slopes can support hardy, resilient plant communities that reduce visual contrast and promote long-term landscape cohesion. In this way, well-planned treatment of each batter slope makes a measurable difference in the overall appearance, stability, and landscape integration of the rehabilitated OBDA.

6.0

IMPLEMENTATION, MAINTENANCE AND MONITORING

6.0 IMPLEMENTATION, MAINTENANCE AND MONITORING

This section provides overarching guidance for planting implementation, staging and aftercare, including maintenance and monitoring, to help Winstone Aggregates achieve timely and effective outcomes.

RESPONSIBILITIES

Winstone Aggregates will oversee the implementation of this plan and ensure the intended outcomes for the Site are achieved. Planting and aftercare are expected to be carried out by contractors with proven experience and capacity to deliver high-quality, consistent work across the project.

All planting layouts shall be confirmed on Site with the approval of Winstone Aggregates or its nominated representative to ensure that the intended landscape, ecological and visual outcomes are achieved.

REVIEW AND RE-CERTIFICATION

This LRSMP is being provided with the substantive application and will be certified by Auckland Council prior to implementation by Winstone Aggregates, in accordance with the proposed Conditions of Consent.

TIMELINE AND STAGING

Planting work should generally be undertaken between April and September when weather conditions are mild, damp, and conducive to planting, and when the ground is workable. Operations should be suspended during periods of severe cold or sun exposure, waterlogging, drought, or persistent drying winds. The recommended annual staging timeframes for implementing the LRSMP are shown in the table to the right.

PROPOSED PLANT SPECIES

All areas of planting are to be accompanied by a full planting specification to be developed progressively as part of the staged plans. An indication of the plant species that may be used is set in the plant palette on **page 44.**

PLANT SUPPLY

The genetic source of all New Zealand native plant material shall be from the Auckland Ecological Region, preferably the Hunua Ecological District. No plant material is to be sourced from outside this area without prior approval of Winstone Aggregates or its nominated representative.

All plants shall be supplied at a minimum size of PB3 (1.5L) at the time of planting. Plants shall be installed at 1.5m centres. A detailed plant schedule, confirming species selection and quantities, shall be prepared prior to planting and must be approved by a suitably qualified Landscape Architect or Ecologist.

Plant material refers to all plants required for the Project. No plant species may be substituted without the prior approval of Winstone Aggregates or its nominated representative. If specified species are unavailable at the time of planting, substitute alternatives may be proposed and approved by a qualified landscape architect or ecologist.

All plants shall be high-quality nursery stock, true to name and type, with well-shaped trunk or stem and head. Stock shall be well hardened to suit local site conditions and free from pests, diseases, and physical defects.

Root systems shall be healthy and fibrous, with roots just reaching the container edge. Plants showing root circling or poor structure should be rejected.

Plants shall also be free from damage such as knots, bark abrasions, wind, or frost injury, and should show evidence of correct pruning.

All plant material is to be made available for inspection by Winstone Aggregates or its nominated representative, prior to planting.

Each plant, or bundle of plants, shall carry a legible label showing the approved botanical name, quantity, and any other required identified details. Plant sizes are to be specified by root trainer or litre container size.

MAINTENANCE PROGRAMME: 5 YEARS FROM PLANTING

DEVELOPMENT STAGE	SPRING/SUMMER SEASON	WINTER SEASON
PLANT SUPPLY	• Obtain seed and propagate plants. • Purchase plants as required from Hunua ecological district. • Grow on plants during summer.	• Grow on and harden off plants and deliver to the site nursery/holding area as required.
SITE PREPARATION	• Review site-wide boundary fences and upgrade where required. • Assess site for weeds and control as required. • Undertake soil samples. • Prepare planting zones. • Undertake fencing upgrades and pest management.	• Continue pest management
PLANTING	• Continue weed control (3-month buffer is required between spraying and planting).	• Commence proposed planting.
WEED AND PEST CONTROL	• Control all weed infestations within planting zones. • Undertake weed surveys over the entire site and control as necessary. • Continue pest management as required.	• Undertake weed surveys over the entire site and control as necessary. Continue pest management as required.
MONITORING AND MAINTENANCE	• Monitor and replace dead plants. • Ongoing maintenance.	• Monitor and replace dead plants. • Continue maintenance.
PROJECT COMPLETION	• Monitoring and maintenance period completed. • Assess need for further weed and pest control.	• Final monitoring and replacement of dead plants as required.

6.0 IMPLEMENTATION, MAINTENANCE AND MONITORING

PLANT SPECIES OF THE HUNUA ECOLOGICAL DISTRICT

The Hunua Ecological District contains roughly 450 native plant species, representing 20% of New Zealand's total native flora, including over 100 species of ferns. The dominant vegetation types are kauri, podocarp, broadleaved, and beech forest; tawa-dominated forest (with abundant tree ferns); taraire-dominated forest and kānuka forest and scrub.

TREES AND LARGE SHRUBS

DOMINANT CANOPY

Tawa
Beilschmiedia tawa

Kohekohe
Didymocheton spectabilis

Rewarewa
Knightia excelsa

Hinau
Elaeocarpus dentatu

PODOCARPS

Kahikatea
Dacrycarpus dacrydioides

Rimu
Dacrydium cupressinum

Miro
Pectinopitys ferruginea

REGENERATING SCRUB

Kānuka
Kunzea ericoides

Mānuka
Leptospermum scoparium

OTHER KEY SPECIES

Taraire
Beilschmiedia taraire

Tītoki
Alectryon excelsus

Kauri
Agathis australis

Puriri
Vitex lucens

FERNS AND ALLIES

TREE FERNS

Ponga
Alsophila dealbata

Mamaku
Sphaeropteris medullaris

Wheki
Dicksonia squarrosa

GROUND AND FILMY FERNS

Common Maidenhair
Adiantum cunninghamii

Hen and Chicken Fern
Asplenium bulbiferum

Kidney Fern
Hymenophyllum nephrophyllum

Fragrant Fern
Dendroconche scandens

RARE AND THREATENED SPECIES

ENDEMIC SUCCULENT

Stonecrop
Crassula hunua

REGIONALLY THREATENED

Green Mistletoe
Ileostylus micranthus

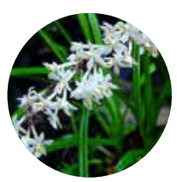
Pale Flowered Kumarahou
Pomaderris hamiltonii

Thick-leaved Kohukohu
Pittosporum kirkii

ORCHIDS AND FLOWERING HERBS

EPIPHYTIC ORCHIDS

Bamboo Orchid
Earina mucronata



Easter Orchid
Earina autumnalis

Winika
Dendrobium cunninghamii

GROUND HERBS

Bidibid
Acaena novae-zelandiae

Parataniwha
Elatostema rugosum

Tūrutu
Dianella nigra

SEDGES, GRASSES, AND CLIMBERS

SEDGES/GRASSES

Hook Sedge
Carex uncinata

Swamp Sedge
Carex virgata

Rice Grass
Microlaena stipoides

CLIMBERS

Kiekie
Freycinetia banksii

White Clematis
Clematis paniculata

Mangemange
Lygodium articulatum

Rātā
Metrosideros species

6.0 IMPLEMENTATION, MAINTENANCE AND MONITORING

PLANT TYPOLOGIES FOR NATIVE REVEGETATION AREAS

The following plant lists illustrate a range of species proposed for each area of native vegetation. These lists demonstrate typical plants selected for their specific functions and intended purposes. They are not exhaustive but provide an indication of the types of species that may be expected within these areas.

- All plants shall be a minimum bag size of PB3/1.5L at the time of planting.
- All plants shall be spaced at 1.5m centres.
- The mix of plant types shall be consistent with those outlined in the Ecology Management Plan prepared by Boffa Miskell for the Offset Planting, notably the early successional stages of ‘taraire, tawa, podocarp forest’ (WF9) and ‘kauri, podocarp, broadleaved forest’ (WF11).
- The mix of plant types for the bench and Hunua Pit OBDA planting shall consist of a mix of 40% shrubs and 60% trees.
- A detailed plant schedule shall be prepared prior to planting each area and approved by a suitably qualified Landscape Architect or Ecologist.

MITIGATION & OFFSET PLANTING

The proposed mitigation and offset plantings will be established across designated offset sites within the Winstone landholding. These plantings will comprise a diverse mix of native species that are characteristic of, and currently present within, the Significant Ecological Area (SEA_T_5323). This approach ensures that the re-vegetated areas reflect the ecological integrity of the local ecosystem, supports local biodiversity values, and contributes to the long-term enhancement of habitat resilience and connectivity across the wider landscape, while also contributing to the landscape character of the area.

Puriri
Vitex lucens

Taraire
Beilschmiedia taraire

Titoki
Alectryon excelsus

Rewarewa
Knightia excelsa

Mamaku
Sphaeropteris medullaris

Pāte
Schefflera digitata

Tawa
Beilschmiedia tawa

Nīkau
Rhopalostylus sapida

Kauri
Agathis australis

Rimu
Dacrydium cupressinum

Miro
Pectinopitys ferruginea

Silver Fern
Alsophila dealbata

Karamu
Coprosma robusta

Kānuka
Kunzea ericoides

Other species to include:
tōtara (*Podocarpus totara*)
kahikatea (*Dacrycarpus dacrydioides*)
pukatea (*Laurelia novae-zelandiae*)
pigeonwood (*Hedycarya arborea*)
putaputawētā (*Carpodetus serratus*)
māpou (*Myrsine australis*)
mahoe (*Melicytus ramiflorus*)

BENCH AND HUNUA PIT OBDA PLANTING

The proposed bench and OBDA planting areas will be established using hardy native species capable of withstanding the exposed and often harsh conditions characteristic of the quarried landscape. These resilient species will provide a vegetated green layer across the benches, softening the visual effects of quarry operations while contributing to landscape integration. In addition to improving amenity and stabilising substrates, these plantings will act as a valuable local seed source, supporting natural regeneration processes and enhancing ecological function across the wider Site.

Kānuka
Kunzea ericoides

Mānuka
Leptospermum scoparium

Māhoe
Melicytus ramiflorus

Karamu
Coprosma robusta

Toetoe
Austroderia fulvida

Koromiko
Hebe stricta

Tutu
Coriaria arborea

Tarata/Lemonwood
Pittosporum eugenioides

Māpou
Myrsine australis

6.0 IMPLEMENTATION, MAINTENANCE AND MONITORING

MONITORING

Ongoing monitoring is essential to the success of rehabilitation, enabling early identification of trends, issues, and opportunities. Annual monitoring will allow favourable microsites and high performing plant species to be recognised and prioritised, while also enabling prompt response to emerging pest plant or animal issues. Monitoring will also help manage the effects of variable climatic conditions, such as adjusting planting schedules during drought years. In addition, trial plots can be established and monitored to test and refine new approaches that may improve revegetation outcomes over time.

Monitoring will address all aspects of rehabilitation, not only plant survival. Key elements include:

- Observing the stability of finished landforms, including any small scale slumping or rockfalls that may influence revegetation success
- Assessing erosion control performance, including surface erosion on benches, batters, slopes, and scree areas.
- Monitoring water quality within the realigned Mangapū Stream Tributary, drainage channels, bench runoff paths, and receiving environments for signs of sedimentation or contamination.
- Evaluating soil fertility, particularly where plant survival is patchy or growth rates are below expectations; soil testing may be used to determine nutrient or amendment needs.
- Reviewing drainage performance, including the function of cut-off drains and berms, to ensure water is retained and released appropriately without scouring or undermining planting.
- Identifying animal pest damage (e.g., browsing, digging, or trampling) as a trigger for pest control actions.
- Monitoring the incidence and persistence of invasive plant species.
- Recording the survival and growth of planted shrubs and trees to guide infill planting and refine future species selection and planting programmes.
- Evaluating fire risk within rehabilitated and regenerating areas.
- Establishing and monitoring trial or experimental plots to test alternative rehabilitation techniques and inform responsive management.

These monitoring requirements will form part of the rehabilitation documentation. Some management measures must be implemented from the outset, but many will rely on ongoing monitoring to determine what actions are required and when. Responses may be as simple as refining existing methods or as significant as altering the timing and techniques used. Management practices will therefore be updated year by year based on monitoring insights.

Comprehensive record keeping will support the accumulation of site-specific knowledge, leading to increased efficiency and reduced costs over the life of the project. Photographic records, including fixed point photos, aerial imagery, and views from key vantage points, will be valuable tools for tracking change and confirming progress.

Initial monitoring and maintenance by Winstone or their nominated representative will occur at least every two months for the first six months following planting, and again in spring, early summer, and late summer during the first two years. Monitoring each season and stage will enable timely supplementary planting or management actions to ensure plant establishment and survival.

Independent monitoring by a suitably qualified ecologist will also be undertaken to assess the success of rehabilitation planting and determine whether additional management is required. Ecological monitoring will occur twice in the first year following planting, and then annually thereafter.

Extended maintenance will continue for **at least five years** after planting is completed. During this period, site inspections will occur at least once every three months, and any planting failures will be replaced to maintain full cover. By the end of this period, at least 90% of plants must be well established and demonstrating strong growth, with compliance confirmed by a suitably qualified and experienced Ecologist.

REPORTING

A brief Monitoring Report for Winstone Aggregates shall be prepared each year until the completion targets are met. Monitoring Report Content should include:

- Dates of visits;
- Photographs as appropriate;
- Condition of the vegetation;
- Number of plants replaced during the year;
- Stages of implementation completed;
- Pest and weed status;
- Condition of plant health;
- Identification of any arising issues that require special monitoring; and
- Any actions required.

The Monitoring Report shall be made available to Auckland Council on request.

REFERENCES

Assessment of Ecological Effects, prepared by Boffa Miskell, dated February 2026.

Landscape Effects Assessment, prepared by Boffa Miskell, dated February 2026.

Pest Management Plan, prepared by Boffa Miskell, dated February 2026.

Technical Report – Geotechnical Assessment, prepared by Tonkin & Taylor Ltd, dated 23 February 2026.

Vegetation Management Plan (VMP), prepared by Tonkin & Taylor Ltd, dated August 2010.

7.0
OFFSITE VISUAL MITIGATION PLANTING METHODOLOGY

7.0 OFFSITE VISUAL MITIGATION PLANTING METHODOLOGY

This methodology sets out an indicative step by step process for offering, designing, implementing, and establishing voluntary visual mitigation planting on private properties where owners elect to participate.

NOTIFICATION OF ELIGIBLE LANDOWNERS

Within six (6) months of consent being granted, the Consent Holder will:

- Notify all eligible landowners in the identified Viewing Groups (S1, S2, W1, W2) in writing.
- Provide a clear description of the offer, including:
  - The purpose of the mitigation planting
  - That design and installation costs are fully covered by the Consent Holder
  - The landowner's role in approving the design and maintaining the planting after establishment
  - Contact details for accepting or declining the offer.

LANDOWNER RESPONSE

Landowners may respond by:

- Accepting the offer;
- Declining the offer; or
- Requesting further information or an in person discussion before deciding.

All responses (or non responses) are recorded for reporting purposes.

SITE VISIT AND LANDSCAPE ASSESSMENT

SCHEDULING THE VISIT

Where a landowner accepts, the Consent Holder will arrange a site visit with:

- A NZILA Registered Landscape Architect (the Suitably Qualified and Experienced Person)
- The landowner (and/or their representative)

ON SITE ASSESSMENT TASKS

The SQEP will:

1. Identify locations on the property where the quarry development area is visible.
2. Confirm the level of visual effect (e.g., moderate-high).
3. Discuss with the landowner their preferences for:
   - Filtered views versus view shifting planting
   - Species types (native/exotic, evergreen/deciduous)
   - Height and density preferences.
4. Map potential planting zones using GPS or site sketch plans.
5. Photograph key viewshafts for planting design reference.

A short record of the site visit is provided to the landowner.

DEVELOPMENT OF A SITE SPECIFIC MITIGATION PLANTING PLAN

A Suitably Qualified and Experienced Practitioner (SQEP) will prepare a planting plan that includes:

- A site plan showing viewshafts and proposed planting areas
- Species list (with indicative sizes and spacing)
- Rationale for mitigation (e.g., foreshortening views, intercepting/ filtering quarry visibility)
- Planting timing (season).

The draft plan is provided to the landowner for comment. The SQEP will:

- Incorporate landowner preferences wherever practicable
- Adjust layout or species as needed
- Ensure the scheme still meets the visual mitigation objective.

Once agreed, the landowner will sign the plan to confirm approval.

IMPLEMENTATION OF PLANTING

The Consent Holder will:

- Procure plants, stakes, ties, and mulch
- Engage contractors for planting
- Prepare the ground where necessary (e.g., weed control, soil prep)

Planting must be completed to the specification in the approved plan, including the correct spacing and placement and application of mulch and necessary protection (e.g., stock-proofing).

The SQEP or contractor will:

- Inspect the planting
- Provide a brief completion report with photos to Winstone and the landowner.

ESTABLISHMENT AND MAINTENANCE

The Consent Holder is responsible for:

- Any replacement of dead plants within the first three months (establishment phase)
- Rectifying any planting errors or defects
- After the establishment phase, the landowner:
- Shall maintain the planting (watering, weed control, replacing dead plants)
- May request further advice from the SQEP if needed

If a different maintenance arrangement is agreed in writing, that agreement prevails.

RECORD KEEPING AND REPORTING

For each property, the Consent Holder will retain:

- Record of offer and landowner response
- Site visit notes
- Approved planting plan
- Completion photographs
- Any correspondence regarding alternative arrangements

Within one month of implementing planting at any property, the Consent Holder will provide a concise report to the Council including:

- Landowner and property reference
- Description of planting completed
- Date of implementation
- Any variations or notable property specific circumstances.

NON PARTICIPATION

The Consent Holder is considered to have fulfilled its obligations where:

- A landowner declines the offer
- A landowner does not respond within a reasonable timeframe
- Access is not granted
- An alternative agreement is reached
- Implementation is completed as agreed.

Together. Shaping Better Places.

Boffa Miskell is a leading New Zealand environmental consultancy with nine offices throughout Aotearoa. We work with a wide range of local, international private and public sector clients in the areas of planning, urban design, landscape architecture, landscape planning, ecology, biosecurity, Te Hīhiri (cultural advisory), engagement, transport advisory, climate change, graphics and mapping. Over the past five decades we have built a reputation for creativity, professionalism, innovation and excellence by understanding each project's interconnections with the wider environmental, social, cultural and economic context.

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