COMMUNITY HUBS & SMALLER SCALED HOUSING | NGAA POKAPUU HAPORI ME TE NOHONGA ITI-AA-TAUINE

A series of community hubs will provide key local infrastructure across the development, including smaller scaled retail, social and educational facilities, accomodation, and other commercial uses.

The hubs will adopt a rural architectural vernacular and be designed to service both local residents and recreational users of the Rangitoopuni Forest Reserve. Open space areas will be provided as part of each hub to support gathering, informal café and food-and-beverage spaces and general social use of the hubs. Hubs will be connected to the road network and recreational trails, supporting vehicular, cycle, and pedestrian access.

Clustered, smaller scaled housing, such as accommodation for workers within the development (e.g. landscape and forest restoration, revegetation, pest control management, recreational trail management, hospitality and retail servicing) will be located alongside the hubs, reinforcing their role as social focal points, with activity throughout the day and evening. Houses will be small footprint homes arranged in clusters, with shared community open space and gardens. Areas of smaller scaled housing may also be developed as small lot subdivisions, and / or build-to-sell, build-to-rent, and papakaainga opportunities.

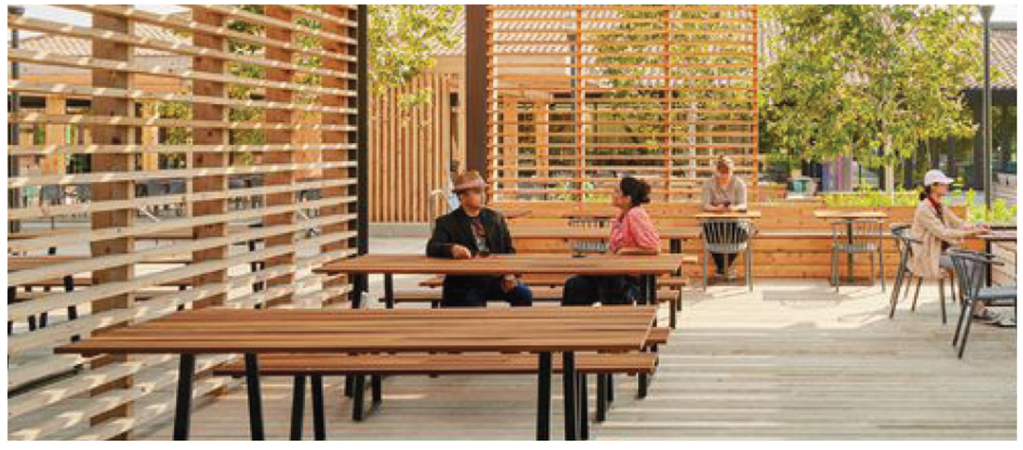




















INDICATIVE LAYOUT: COMMUNITY HUB | TAHORA TOHU: POKAPUU HAPORI

0 15m
1:500 @ A3

Indicative layout for a proposed community hub located adjacent to the consented Lot 2 retirement village and Lot 1 large-lot forest living areas. The hub is intended to function as a food and beverage–focused social destination, fostering connections with the wider community. Access is proposed via Forestry Road.





INDICATIVE LAYOUT: COMMUNITY HUB | TAHORA TOHU: POKAPUU HAPORI

0 15m
1:500 @ A3

The indicative layout for the primary community hub located in the northeast of the Site provides for a variety of offerings potentially including larger-format commercial and retail, health and well-being services, education, social infrastructure, business hub amenities and accomodation.

It combines a 'community green' and community garden to support informal use of the hub, while also providing amenity for adjacent clustered smaller scaled housing. The hub is accessible via Forestry Road and connected to the wider public road network, ensuring strong connectivity to the surrounding area.





INDICATIVE LAYOUT: RECREATION HUB LAYOUT | TAHORA TOHU: POKAPUU WHAKANGAHAU

The indicative layout for a community hub located in proximity to the central core of the protected indigenous Rangitoopuni Forest Reserve provides for connection to the Reserve via an information centre facility.

This hub provides amenity for recreational users of the Reserve, as well as residents and the wider community. It provides food and beverage services / café, smaller scaled retail, and bike facilities, alongside an information centre providing cultural and ecological interpretation and information / advice. The associated open space incorporates nature play with opportunities for cultural narrative and learning.





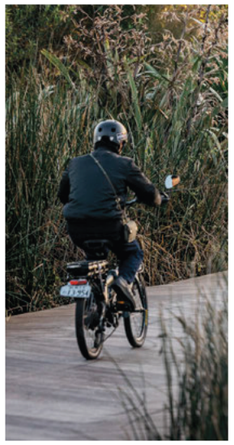
RECREATION AMENITIES | NGAA WAAHI WHAKANGAHAU

Throughout the development, a series of neighbourhood, community and cultural open spaces will be delivered for the benefit of the residents and the wider community.

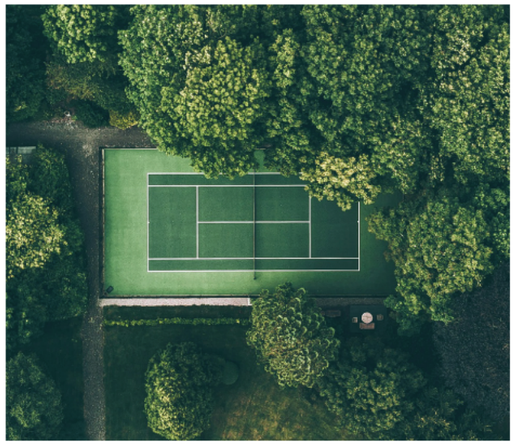






















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ECOLOGICAL RESTORATION
WHAKAORANGA HAUROPI

ECOLOGICAL RESTORATION STRATEGY | RAUTAKI WHAKAORANGA HAUROPI

1.0 VISION | TIROHANGA

Rangitoopuni will undergo a long-term ecological transformation, evolving from a production pine forest into a resilient and biodiverse indigenous forest landscape.

The restoration strategy recognises the Site's unique role as a critical ecological stepping stone between Tiritiri Matangi and the Waitaakere Ranges, while responding carefully to its landform, soils, and hydrological systems.

Over time, revegetation will extend across approximately 77% of the Site, establishing a self-sustaining forest system that supports native flora and fauna, enhances water quality, increases carbon sequestration, and fosters meaningful landscape experiences for residents and visitors.

2.0 REGENERATING FOREST STRATEGY: 1–50+ YEARS | RAUTAKI WHAKAORANGA NGAHERE

YEARS 1-5: ESTABLISHMENT & PROTECTION

Early plantings are dominated by hardy pioneer species, including kaanuka, maanuka, maahoe, karamu, houhere, maapou, houpara, and tii kouuka. These species rapidly stabilise soils, suppress weed growth, and create shelter for more sensitive forest species. Riparian margins and wetlands are densely planted with sedges, harakeke, toetoe, and rushes to shade waterways, reduce weed establishment, and improve aquatic habitat.

Long-lived canopy species such as kahikatea and tootara are introduced early in suitable valley floor and drier slope environments, supporting their establishment beneath the protective pioneer canopy. Existing natural regeneration, including cutty grass and remnant tii kouuka, is retained and integrated into the revegetation framework.

Weed and animal pest control are critical during this phase to prevent suppression of young plants and enable bird and insect populations to establish. Within five years, vegetation is expected to reach 3–5 metres in height, as the landscape transitions towards a developing, self-sustaining indigenous canopy.

YEARS 10–25: FOREST FORMATION & ENRICHMENT

By year ten, the forest begins to develop a clear structure, with an emerging canopy, mid-storey shrubs, and a shaded forest floor. Enrichment planting introduces slower-growing canopy species such as kauri, rimu, puuriri, and rewarewa in carefully selected locations. Tree ferns and shade-tolerant species naturally re-establish as spores and seeds colonise the Site.

By approximately 25 years, the forest takes on the characteristics of a mature indigenous woodland. Canopy height increases, light becomes dappled, and natural regeneration is well established. Forest edges remain dense, while internal paths and open spaces feel enclosed and sheltered. Targeted infill planting may be undertaken where required as pioneer species begin to enter into senescence.

YEARS 50+: RESILIENT NATIVE FOREST

By 50 years and beyond, forest giants come to dominate the landscape. The Site functions as a self-sustaining ecosystem, where regeneration, decay, and renewal occur as natural processes. Evidence of former pine forestry progressively disappears, replaced by rich organic soils, abundant birdlife, and complex habitat layers. Rangitoopuni evolves into an inland forest refuge, supporting regional biodiversity connectivity.

3.0 BIODIVERSITY OUTCOMES | NGAA HUA MOO TE KANORAU KOIORA

Rangitoopuni's location positions it as a natural recipient for dispersing bird species from Tiritiri Matangi and surrounding mainland forests. Early returning species are expected to include piiwakawaka, tuuii, tauhou, and native raptors. As the forest matures and the availability of fruiting trees increases, species such as kereruu, kootare, ruru, kaka, and kaakaariki are increasingly supported.

Invertebrate communities begin to recolonise early, supported by flowering pioneer species and decaying forestry slash. Over time, forest specialists such as weetaa and puuriri moth are likely to re-establish as habitat complexity and quality improve. Ongoing pest management is essential, as even low levels of pest presence can reverse decades of ecological progress.

4.0 ENVIRONMENTAL PERFORMANCE | MAHI TAIAO

CARBON SEQUESTRATION:

Revegetated native forest sequesters carbon progressively over time. Early-stage forests typically capture several tonnes of CO_2 per hectare annually, with sequestration rates increasing significantly between 25 and 50 years as canopy species mature.

While sequestration occurs more gradually than in exotic forestry systems, indigenous forest provides stable, long-term carbon storage alongside broader biodiversity and soil health benefits. Rangitoopuni is also exploring participation in emerging Nature Credit schemes, which recognise and reward overall ecosystem enhancement rather than carbon sequestration alone.

WATER & STORMWATER MANAGEMENT:

Stormwater management is based on natural systems rather than engineered infrastructure. Multi-layered vegetation intercepts rainfall, while forest litter and developing humus soils absorb and gradually release water. Overland flow paths, wetlands, and streams are retained to accommodate extreme rainfall events, reducing erosion and downstream flooding. Runoff from roads is managed through grassed swales that slow, filter, and promote infiltration of stormwater.

SOIL & ECOLOGICAL RECOVERY:

Transitioning from pine forestry to indigenous vegetation enhances soil structure, nutrient cycling, and biological activity. Decomposing forestry slash contributes to the development of organic matter and establishes beneficial microclimates, while pioneer species stabilise slopes and reduce erosion. Mycorrhizal fungi, earthworms, and soil invertebrates improve soil porosity and water infiltration. Initial improvements occur within the first decade, with full soil development continuing over multiple decades.

5.0 MICROCLIMATE BENEFITS | NGAA HUA AAHUARANGI ITI

As forest cover increases, the Site experiences moderated temperatures, reduced wind exposure, and increased humidity. Ground temperatures beneath the canopy are significantly cooler during summer compared to open areas, while night-time temperatures remain more stable. These microclimatic conditions enhance walking comfort, reduce heat stress, and improve overall ecological resilience, including a reduced risk of fire.

6.0 LANDSCAPE EXPERIENCE & MOVEMENT | WHEAKO AA-WHENUA ME TE NEKEHANGA

Rangitoopuni's open space network is designed to immerse people within a regenerating forest landscape, while safeguarding sensitive ecological areas. Walking trails connect neighbourhoods, wetlands, and streams, providing opportunities for outlook, rest, and interpretation. Cultural narratives shared by Te Kawerau ā Maki may be expressed through signage, planting strategies, and crafted landscape elements.

Movement throughout the development prioritises walking, cycling, and low-speed vehicles. Quieter forest tracks are balanced with more active community spaces, orchards, and recreation areas, supporting a diverse range of daily and seasonal experiences.

7.0 DELIVERY & LONG-TERM STEWARDSHIP | WHAKATINANATANGA ME TE KAITIAKITANGA AA-ROA

At the completion of planting contractors' maintenance obligations, vegetation will be well established, while still visibly young. Rapid change follows as plants emerge above retained forestry slash and growth accelerates, with retained slash continuing to shelter young plants, build soil structure, and support fungi and invertebrate communities.

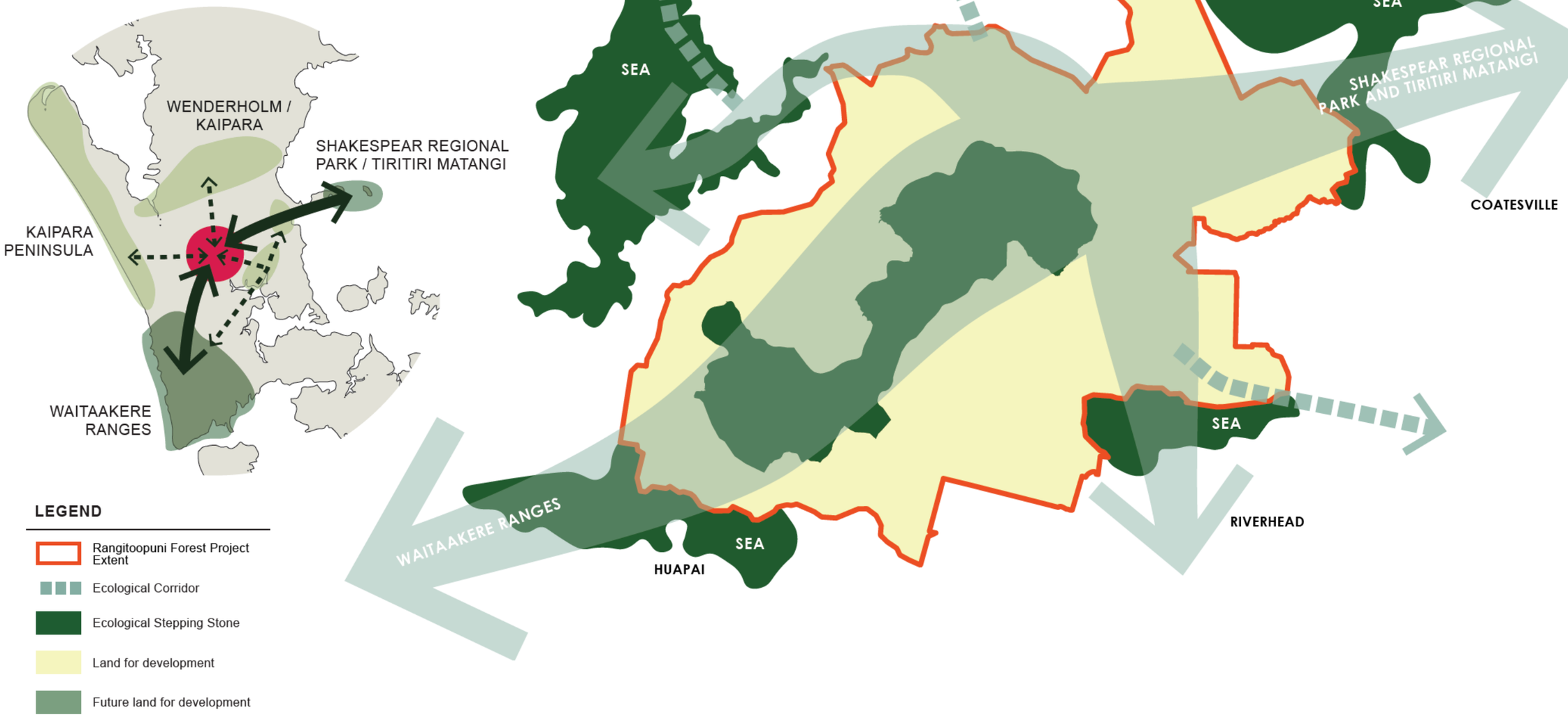
The long-term success of Rangitoopuni relies on consistent pest and weed management, ongoing monitoring, adaptive planting, and active community stewardship. With sustained care, the landscape will mature into an enduring and established forest environment—an integral part of the regional ecological network—while the Site's history of cyclical production pine forestry recedes into the past.

ECOLOGICAL CONNECTIONS | NGAA HONONGA HAUROPI

The Site provides wider, regionally scaled, ecological connectivity.

It provides a substantial inland stepping stone habitat between the eastern and western coastlines supporting avifauna connectivity between the protected habitats and breeding grounds of the offshore islands, Tiritiri Matangi and Hauturu and coastal regional parklands, such as Shakespear Regional Park in the east and the Waitaakere Ranges in the west.

The staged return of some 3000+ ha of upland landscape and catchment headlands draining both west to the Kaipara Harbour and southeast to the Waitemataa Harbour to an indigenous forest cover will provide a significant biodiversity uplift to the region. The scale of the habitat, along with proposed predator control across the forest will have overflow benefits to the wider landscape of the region. Biodiversity benefits such as those experienced in Te Whanganui-a-Tara Wellington with the establishment of Zealandia can be anticipated.



PLANTING PRECEDENTS | NGAA TAUIRA WHAKATOO

GENERAL REVEGETATION





1 **RIPARIAN** | AA-MANGA

Riparian planting typically features a mix of native grasses, shrubs, and trees along stream banks. This vegetation creates a lush, green buffer zone extending 20 metres either side of watercourses and wetlands.

Planting stabilises soil, filters pollutants, provides wildlife habitat, regulates water temperature, and mitigates floods.



2 **SUB-CANOPY** | RAAKAU RARO

A sub-canopy layer featuring maanuka and kaanuka consists of dense, bushy shrubs with small, narrow leaves. Maanuka typically produces white or pink flowers, while kaanuka has smaller white flowers. Together, they create a robust understorey beneath the canopy.

Both maanuka and kaanuka are hardy, fast-growing species that prepare the soil for the establishment of other native plants.



3 **CANOPY** | RAAKAU RUNGA

A canopy layer featuring kauri, kahikatea, tootara, niikau, and puuriri creates a diverse and visually striking forest.
The mixed canopy helps regulate temperature and humidity, creating a stable environment for understorey plants. The diverse root systems stabilise soil, prevent erosion, and enhance nutrient cycling.

The variety of species ensures a resilient forest structure capable of withstanding environmental changes.

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ROAD NETWORK
WHATUNGA RORI

ROAD NETWORK PLAN | MAHERE WHATUNGA RORI

The two primary roads within the development area (Old North Road and Forestry Road) will remain and be extended as public roads. These will allow for access through the Site in an east/west and north/south direction.

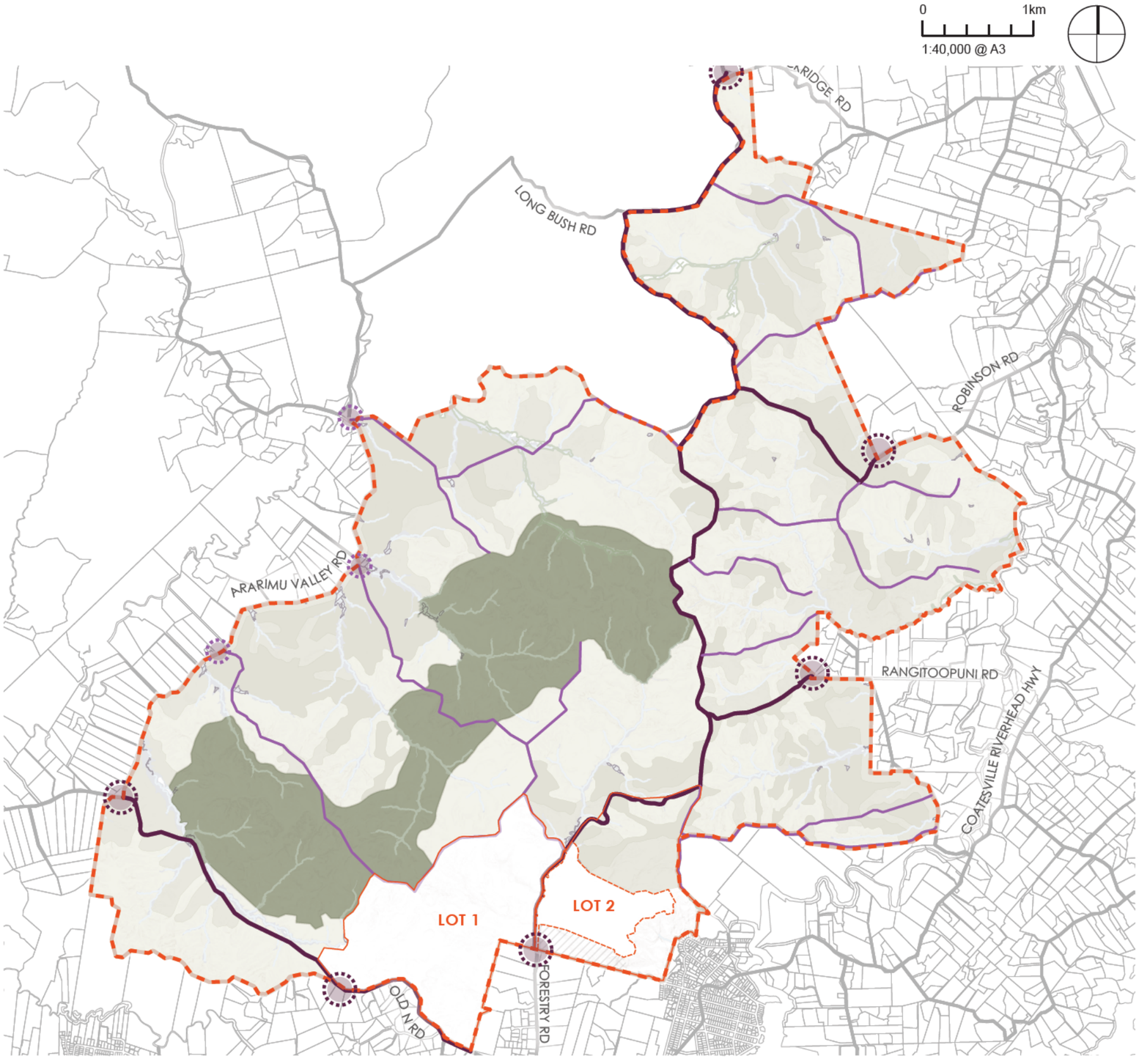
The road network generally follows the existing forestry road network, where feasible, within the residential development areas. Therefore, most of the roading is located on ridgelines and along spurs, while valley floors have generally avoided.

Jointly owned access lots (JOALs) will connect development areas to the public roads. These JOALs will also enable access across the Site, linking the Riverhead catchment to the Ararimu Valley catchment.

Minor JOALs will connect neighbourhoods within each development sector.

The roading network is supported by a network of walking tracks through neighbourhood development areas.

Connections to the public road network beyond the development are available at multiple locations around the perimeter of the Site, these connections will be the subject of further transport planning investigation.



LEGEND

- Rangitoopuni Forest Project Extent
- Lot 1 and Lot 2 Boundaries
- Retirement Village Boundary
- Rangitoopuni Forest Reserve
- Private Road Site Entry Point
- Public Road Site Entry Point
- Private Road
- Public Road

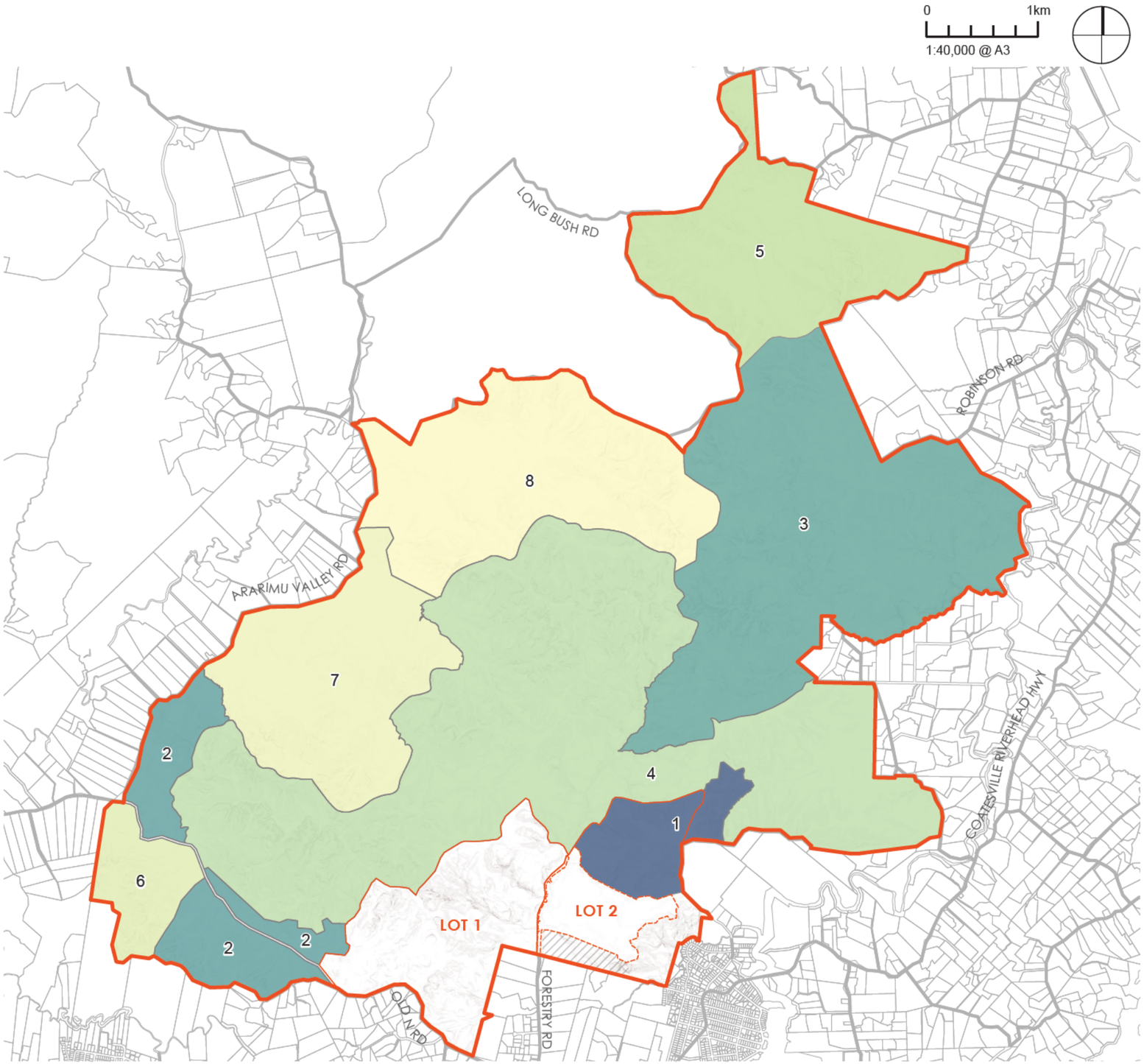
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YIELD & STAGING
PUTANGA ME WAAHANGA

STAGING PLAN | MAHERE WAAHANGA

The development stages, as shown indicatively on the map, are generally aligned to follow the sequence of planned production forestry felling.

In some instances, portions of the pine forest may be cleared prior to maturity to enable the efficient establishment of cohesive development areas.



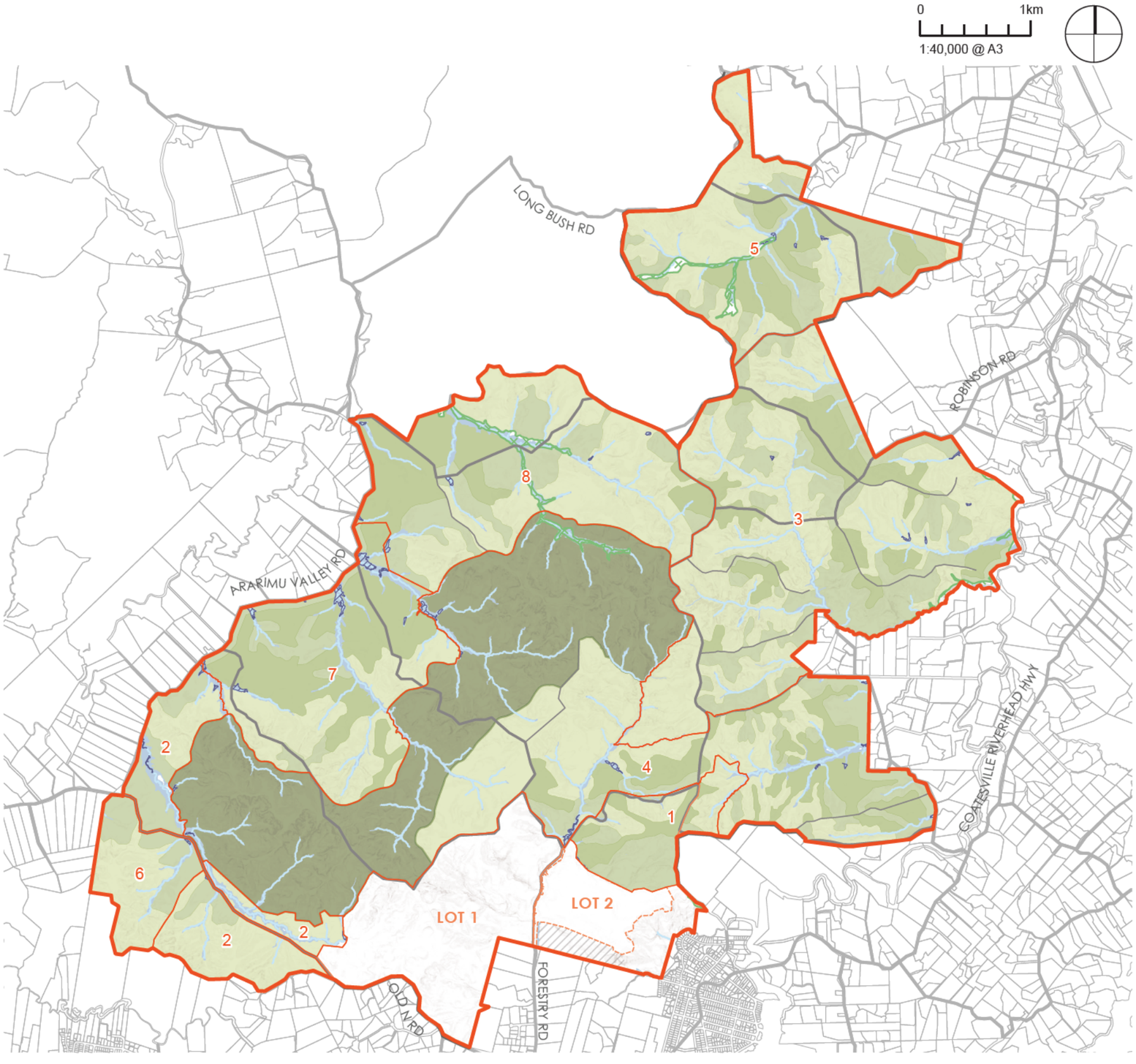
LEGEND

- Rangitoopuni Forest Project Extent
- Lot 1 and Lot 2 Boundaries
- Retirement Village Boundary
- Wastewater Disposal Area
- Stage 1
- Stage 2
- Stage 3
- Stage 4
- Stage 5
- Stage 6
- Stage 7
- Stage 8

YIELD PLAN | MAHERE PUTANGA

INDICATIVE YIELD CALCULATION BY STAGE*				
Stage	**2,500 m² Forest Lots (+ / - 10%)****	**4,000 m² Forest Lots (+ / - 10%)**	**1ha+ Forest Lots (+ / - 10%)**	**Total Yield by stage (+ / - 10%)**
1	65 - 80	39 - 48	37 - 45	141 - 173
2	0	76 - 92	86 - 105	161 - 197
3	271 - 331	330 - 404	286 - 350	888 - 1085
4	281 - 344	145 - 177	185 - 226	611 - 747
5	171 - 210	159 - 194	111 - 135	441 - 539
6	**0**	56 - 68	39 - 48	95 - 116
7	**394 - 482**	74 - 91	83 - 102	552 - 674
8	**252 - 308**	158 - 193	147 - 180	557 - 681
Total	**1,435 - 1,754**	**1,037 - 1,267**	**974 - 1,190**	**3,446 - 4,212**

* **Excludes** Lot 1, Retirement Village (within Lot 2), and a part of Old North Rd.
Excludes Lot 2 DP 138520, comprising 3.96ha of land that is part of land parcel NA118D/300.
** **Includes** community hubs and smaller scaled housing.

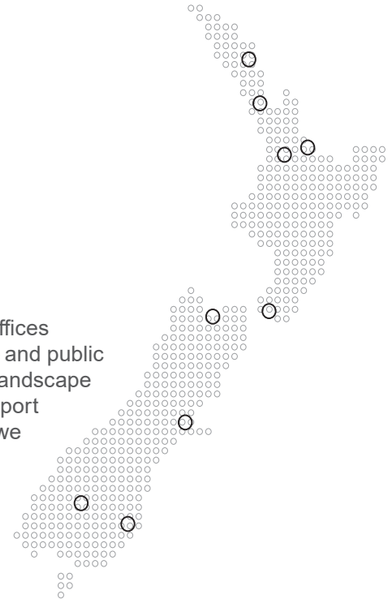


LEGEND

- Rangitoopuni Forest Project Extent
- Retirement Village Boundary
- Stage Boundary
- Rangitoopuni Forest Reserve
- 2,500 m² Forest Lots
- 4,000 m² Forest Lots
- 1ha+ Forest Lots
- Streams
- Flood Prone Areas
- Flood Plain
- Significant Ecological Areas – Terrestrial
- Wastewater Disposal Area

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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