Appendix E

Subdivision Consent
Landscape Package

Boffa Miskell

WAIRAKEI SOUTH

LANDSCAPE PACKAGE - SUBDIVISION CONSENT STAGE

PREPARED FOR FAST TRACK APPROVAL
MAY 2026

Boffa Miskell

Boffa Miskell is proudly a
Toitū net carbonzero certified consultancy

DOCUMENT QUALITY ASSURANCE

This document may be cited as:
Boffa Miskell Limited, May 7, 2026 4:15 pm. WAIRAKEI SOUTH Report prepared by Boffa Miskell Limited for Bell Road Limited Partnership.

For any information regarding this report please contact:
bryan.sanson@boffamiskell.co.nz

VERSION:	ISSUE DATE:	PREPARED BY:	DESCRIPTION:	REVIEWED BY:
FINAL	May 2026	Bryan Sanson Senior Principal / NZILA Registered Landscape Architect Tessa Milne Landscape Architect	Issued for Fast Track Application Approval	Morne Hugo Partner / NZILA Registered Landscape Architect Bryan Sanson Senior Principal / NZILA Registered Landscape Architect Mark Apaldoorn Partner / Transport Planner - CPEngNZ, FEng(NZ) Rebecca Ryder Partner / NZILA Registered Landscape Architect

APPROVED FOR ISSUE:
Bryan Sanson | NZILA Registered Landscape Architect | Senior Principal | May 2026

RELEASE AND RELIANCE

This report has been prepared by Boffa Miskell Limited on the specific instructions of our Client. It is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Boffa Miskell does not accept any liability or responsibility in relation to the use of this report contrary to the above, or to any person other than the Client. Any use or reliance by a third party is at that party's own risk. Where information has been supplied by the Client or obtained from other external sources, it has been assumed that it is accurate, without independent verification, unless otherwise indicated. No liability or responsibility is accepted by Boffa Miskell Limited for any errors or omissions to the extent that they arise from inaccurate information provided by the Client or any external source.

File ref: BM250088_WS_Landscape_SC_Doc_FINAL

Cover photograph: Looking south towards Wairakei South Site from Papamoa coast , © Bluehaven Group, 2021

Boffa Miskell

CONTENTS

EXECUTIVE SUMMARY

Wairakei South was referred as a Fast Track Project and confirmed in December 2024.

The Wairakei South Development is a transformative, privately funded urban development project poised to play a critical role in addressing the Western Bay of Plenty sub-region's growing housing and business land shortfalls. Encompassing approximately 350 hectares within the high-growth Eastern Corridor between Pāpāmoa, Te Tumu, and Te Puke, Wairakei South will deliver approximately 2,750 new homes within 128 hectares, alongside 50 hectares of industrial, 4 hectares of commercial centres, and a 4 hectare primary school over the next 10-20 years, creating a vibrant, integrated, and connected mixed-use community.

This document is prepared for the Wairakei South Development Fast Track Application and in support of the Wairakei South Masterplan document that precedes this document. It provides more detail on the planting strategies, landscape treatments, public amenities and pedestrian networks proposed throughout the reserve and transportation networks within the Wairakei South Development that are proposed in the Masterplan.

The detail provided in this document and the supporting graphic drawings is to a level sufficient to inform all parties of the design intentions and treatments for all public realm aspects of the development. Further detail and design resolution will be undertaken after continued engagement and collaboration with Council, Iwi and other key stakeholders to be refined and supplied at Engineering Design Approval stages.

LEGEND

- SITE BOUNDARY
- RESIDENTIAL (MDRZ) ZONE
- EMPLOYMENT (INDUSTRIAL)
- SERV. SERVICE CENTRE (COMMERCIAL)
- NEIGHBOURHOOD & LOCAL CENTRES (COMMERCIAL)
- PRIMARY SCHOOL
- STORMWATER RESERVE
- NEIGHBOURHOOD RESERVES / GREEN LINKS / STORMWATER CONNECTIONS
- POTENTIAL FUTURE ROAD CONNECTION TO TE PUKE (ROAD RESERVE)

LANDSCAPE AREA CLASSIFICATIONS

The public realm within Wairakei South consists of several different zone classifications, all of which require a well-integrated and considered approach to landscape and amenity treatments to ensure they suit the varied needs and environments they reside in.

This document outlines the various planting strategies, pedestrian network treatments, furniture palettes and reserve design considerations for the following future vested public zones:

STREETSCAPES

All vested streets throughout the development will have a substantial amount of planting integrated into the streetscape to provide amenity, shade and support placemaking and wayfinding. The network of shared paths and cycleways are also to have a defined aesthetic that supports safe and active movement, whilst enabling opportunities for placemaking and storytelling.

STORMWATER RESERVES

Extensive water treatment and filtration planting, shade tree planting, and active mode transport corridors are present throughout the stormwater reserve network. There are also strong opportunities for ecological enhancement planting, wayfinding, storytelling and mana whenua involvement in the creation and management of this network.

NEIGHBOURHOOD RESERVES

Several neighbourhood reserves are strategically located throughout the development. Design of these important community spaces is to be done collaboratively with council as they are developed through the stages. Each reserve will include typical amenities, facilities, groundcover and shade tree planting to best utilize each site and provide the necessary recreation and open space for a thriving community.

GREEN LINKS

These are small reserves located extensively throughout the develoment that provide critical links between the streetscape and stormwater networks. These green links provide local pocket open spaces for the neghbourhoods and are designed as a network that interconnect the on and off-street active mode transport corridors, waters infrastructure, support wayfinding and provide additional general amenity to the development.

MITIGATION AREAS

Strategic planting and use of physical distancing along important interfaces bordering the development help to mitigate visual impacts. Also includes ecological enhancement and habitat restoration to reflect the areas historical ecosystems. Combined, these measures strengthen the integration of the development within the wider rural landscape.

Boffa Miskell

1.0 STREETSCAPE NETWORK

1.1 STREETSCAPE PLANTING STRATEGY

This plan illustrates the various streetscape categories within Wairakei South. Each streetscape category has a specific landscape treatment and planting strategy reflecting their different hierarchy within the road network.

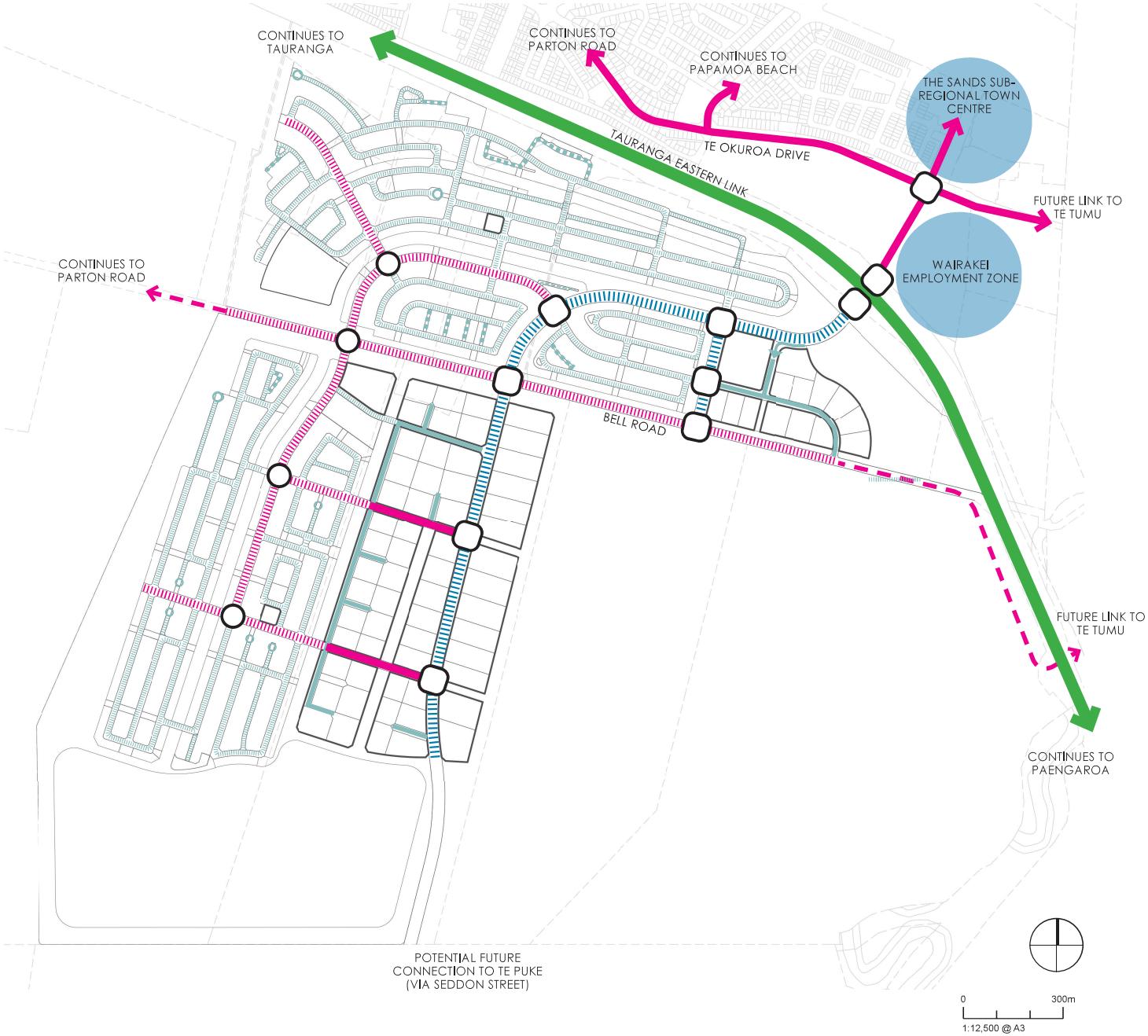
The streetscape categories vary depending on the location, and function of the area they are in, but predominantly fall within the following three categories:

1. **SECONDARY ARTERIAL ROADS**
2. **COLLECTOR ROADS**
3. **RESIDENTIAL ROADS**
4. **SHARED LANES**

Further detail on the various typical landscape treatments and plant strategies for each of these categories can be found in the following pages.

NOTE:
Refer to Sheet *1.7 Traffic Calming & Pedestrian Crossings* for more detail on the traffic calming and pedestrian management measures proposed.

Refer to *Appendix I - Integrated Transport Assessment, Boffa Miskell* & *Appendix D - Engineering Drawings, Maven* for more detail on road classifications.



LEGEND

- EXPRESSWAY (T.E.L)
- SECONDARY ARTERIAL
- COLLECTOR
- COLLECTOR (INDUSTRIAL)
- LOCAL (INDUSTRIAL)
- RESIDENTIAL
- SHARED LANE
- KEY NETWORK SIGNALISED INTERSECTION
- KEY NETWORK ROUNDABOUT
- LEFT TURN ONLY POINT OF ACCESS
- EXISTING COLLECTOR
- EXISTING RURAL ROAD

1.2 SECONDARY ARTERIAL ROAD

PLANTING STRATEGY

The secondary arterial roads as identified in the diagram to the right, function as the primary transport corridor running through the Wairakei South development, as such it will have a specific treatment to all vegetation to ensure the road is clearly discernible from the lesser collector and local roads.

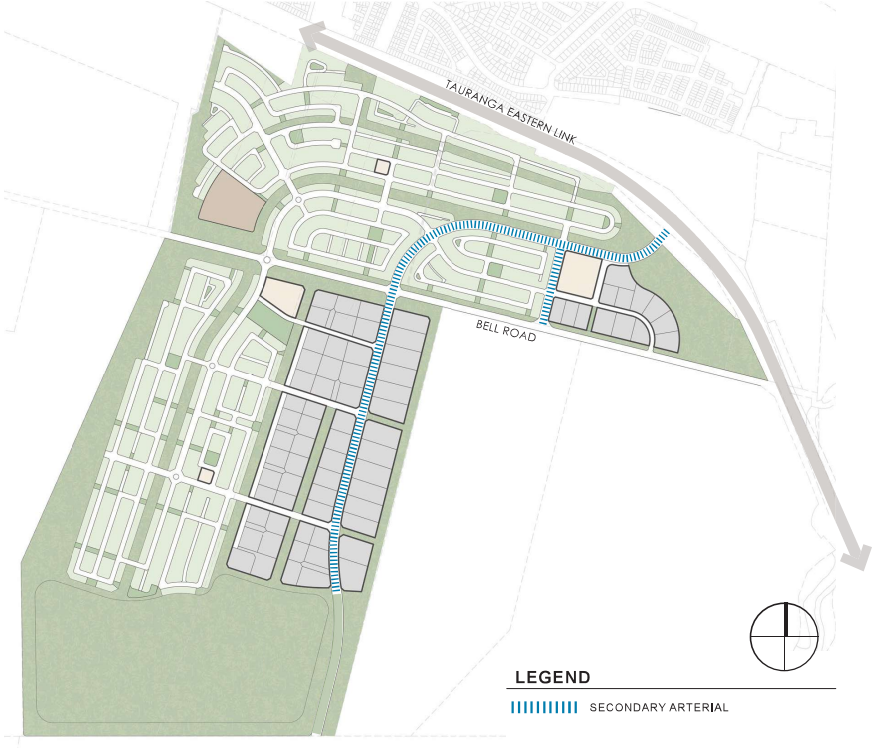
Wide berms and central median area allow space to plant large specimen trees. These tree give form and scale to the wide streetscape.

A mix of low native and exotic groundcover species are proposed to be planted beneath all trees within berm areas directly adjacent to the road carriageway and the entire central median to provide a strong aesthetic and greening of this primary transport corridor. Shrub and groundcover species are to be hardy grasses and shrubs that can tolerate the harsh conditions these road classifications present.

To allow for open sightlines around the road area most plant species selected grow less than 500mm in height.

In locations such as intersections and pedestrian crossings, where visibility is a key consideration, only those species that grow less than 300-350mm in height are to be used.

Trees and groundcovers will be installed in accordance with Western Bay of Plenty District Council Infrastructure Development Code Drawings: W200 - Streetscape, including compliance with street tree offset distances to roading infrastructure as outlined in Standard Drawing W201 - Street Trees: Tree Location)



PLANTING PALETTES

The below is a list of proposed trees and groundcover plants that are suitable to be used in the streetscape (berms) within this street classification. Final selections are to be confirmed at Engineering Approval stage and subject to council review.

STREET TREE PALETTE [SUGGESTED SPP.]

- Agathis australis / Kauri
- Metrosideros excelsa / Pohutukawa
- Carpinus betulus / Hornbeam
- Quercus palustria / Pin Oak
- Acer palmatum ‘Bloodgood’ / Maple
- Liriodendron chinensis / Chinese Tulip
- Knightia excelsa / Rewarewa

GROUNDCOVERS - GENERAL BERM PALETTE [SUGGESTED SPP.]

- Coprosma acerosa / Taupata
- Coprosma repens ‘Poor Knights’
- Coprosma ‘Red Rocks’
- Dianella nigra ‘Little Jess’
- Dietes irioides / Butterfly Iris
- Hebe ‘Wiri Mist’ / Koromiko
- Lomandra Nyalla
- Muehlenbeckia astonii / Pohuehue
- Phormium ‘Green Dwarf’ / ‘Emerald Gem’
- Pimelia prostrata / NZ daphine
- Pittosporum ‘Golf Ball’ / Dwarf Pittosporum

GROUNDCOVERS - LOW GROWING PALETTE [SUGGESTED SPP.]

- Carex comans ‘Bronze’
- Coprosma ‘Hawera’
- Dianella nigra / Little Jess
- Hebe ‘Emerald Gem’
- Libertia ixiodies / Mikoikoi
- Libertia peregrinans / Mikoikoi
- Lomandra ‘Lime Tuff’
- Muehlenbeckia complexa / Pohuehue
- Pimelea prostrata / NZ daphine
- Pratia angulata / Pānakenake

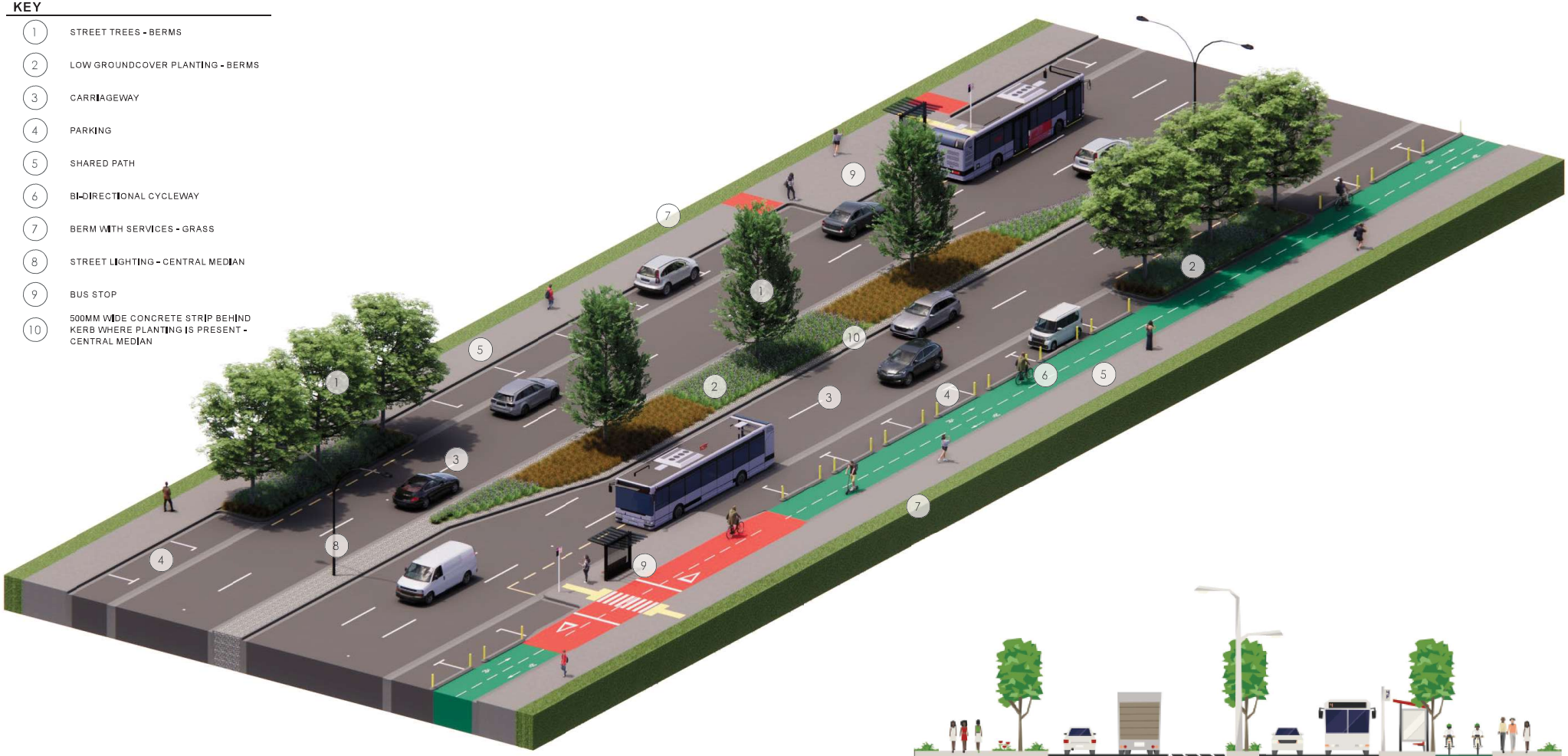
1.2.1 SECONDARY ARTERIAL ROAD

3D VISUAL OF ROAD CORRIDOR

This profile of the secondary arterial road illustrates how the road functions as intended through a fully integrated and well considered design approach. This 36m corridor can accommodate the vehicular and active transport modes, public transport, infrastructure, parking and landscaping.

KEY

1. STREET TREES - BERMS
2. LOW GROUNDCOVER PLANTING - BERMS
3. CARRIAGEWAY
4. PARKING
5. SHARED PATH
6. BI-DIRECTIONAL CYCLEWAY
7. BERM WITH SERVICES - GRASS
8. STREET LIGHTING - CENTRAL MEDIAN
9. BUS STOP
10. 500MM WIDE CONCRETE STRIP BEHIND KERB WHERE PLANTING IS PRESENT - CENTRAL MEDIAN



ROAD PROFILE: SECONDARY ARTERIAL [36M] | SPEED 60KM/HR

1.3 COLLECTOR ROAD

PLANTING STRATEGY

The primary collector roads run through the residential zones of the development, and act as the main transport corridor and public transport route for the residents within Wairakei South.

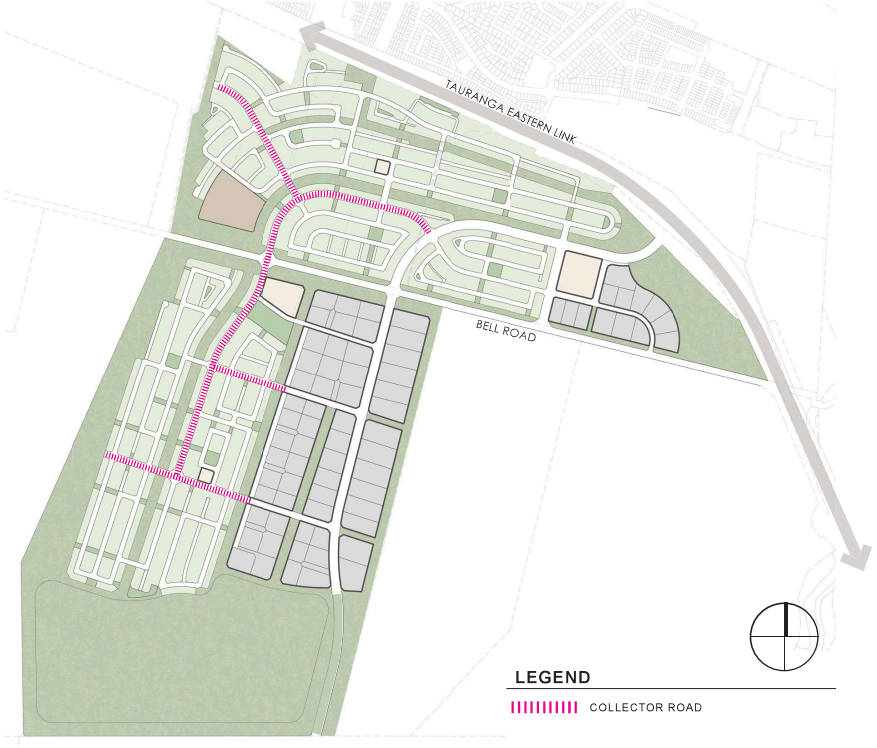
As the road and berm widths are reduced compared to the secondary arterial road corridor street trees are to be more upright growing species to provide the desired height and form but without impacting on the adjoining carriageways,

A mix of low native and exotic groundcover species are proposed to be planted beneath all trees within berm areas directly adjacent to the road carriageway to provide a strong aesthetic and greening of this primary transport corridor. Shrub and groundcover species are to be hardy grasses and shrubs that can tolerate the harsh conditions these road classifications present.

All plants are to enable good open sightlines, with most plant species selected being the type that generally grow less than 500mm in height.

In locations such as intersections and pedestrian crossings, where visibility is a key consideration, only those species that grow less than 300-350mm in height are to be used.

Trees and groundcovers will be installed in accordance with Western Bay of Plenty District Council Infrastructure Development Code Drawings: W200 - Streetscape, including compliance with street tree offset distances to roading infrastructure as outlined in Standard Drawing W201 - Street Trees: Tree Location)



PLANTING PALETTES

The below is a list of proposed trees and groundcover plants that are suitable to be used in the streetscape (berms) within this street classification. Final selections are to be confirmed at Engineering Approval stage and subject to council review.

STREET TREE PALETTE [SUGGESTED SPP.]

- Agathis australis / Kauri
- Metrosideros ‘Maori Princess’ - Pohutukawa
- Carpinus betulus ‘Fastigiata’ / Upright Hornbeam
- Ginkgo biloba ‘Fastigiata’ / Upright Ginkgo
- Quercus robur ‘Fastigiata’ / Upright English Oak
- Knightia excelsa / Rewarewa
- Alectryon excelsus / Titoki

GROUNDCOVERS - GENERAL BERM PALETTE [SUGGESTED SPP.]

- Coprosma acerosa / Taupata
- Coprosma repens ‘Poor Knights’
- Coprosma ‘Red Rocks’
- Dianella nigra ‘Little Jess’
- Dietes irioides / Butterfly Iris
- Hebe ‘Wiri Mist’ / Koromiko
- Lomandra Nyalla
- Muehlenbeckia astonii / Pohuehue
- Phormium ‘Green Dwarf’ / ‘Emerald Gem’
- Pimelia prostrata / NZ daphine
- Pittosporum ‘Golf Ball’ / Dwarf Pittosporum

GROUNDCOVERS - LOW GROWING PALETTE [SUGGESTED SPP.]

- Carex comans ‘Bronze’
- Coprosma ‘Hawera’
- Dianella nigra / Little Jess
- Hebe ‘Emerald Gem’
- Libertia ixiodies / Mikoikoi
- Libertia peregrinans / Mikoikoi
- Lomandra ‘Lime Tuff’
- Muehlenbeckia complexa / Pohuehue
- Pimelea prostrata / NZ daphine
- Pratia angulata / Pānakenake

1.3.1 COLLECTOR ROAD

3D VISUAL OF ROAD CORRIDOR

This profile of the primary collector road illustrates how the road functions as intended through a fully integrated and well considered design approach. This 25m corridor can accommodate the vehicular and active transport modes, public transport, infrastructure, resident driveways, parking and landscaping.

KEY

1. STREET TREES
2. LOW GROUNDCOVER PLANTING - BERMS
3. CARRIAGEWAY
4. PARKING
5. DRIVEWAYS / VEHICLE CROSSINGS
6. SHARED PATH
7. BERM WITH SERVICES - GRASS
8. STREET LIGHTING
9. BUS STOP
10. PAINTED CENTRAL MEDIAN

ROAD PROFILE: COLLECTOR [25M] | SPEED 40KM/HR

1.4 RESIDENTIAL STREETS

PLANTING STRATEGY

There are four street classifications that have been developed to service the residential areas within Wairakei South. These are located and scaled dependant on the number of vehicle movements and residential lots they service. As such, the landscape treatments and pathway designs vary to reflect the different needs for each.

The 18m and 20m wide residential streets have trees to both sides, whereas the local residential and access lanes have trees along one side only. Trees are to be those of smaller, more compact in nature and/ or those with an upright form to still provide height and shade but not impact on the carriageways and adjoining residential lots.

Low groundcover plants are proposed underneath the trees and within all berm areas that sit adjacent the carriageway to continue the strong aesthetic along these corridors and provide side friction to the vehicle lanes, supporting a lower speed environment beneficial to pedestrian safety. Shrub and groundcover species will be to be hardy grasses and shrubs that can tolerate the harsh conditions these road classifications present.

All plants will enable open sightlines, with all plant species selected being the type that generally grow less than 400mm in height. In locations such as intersections and mid-block pedestrian crossings, where visibility is a key consideration, only those species that grow less than 300-350mm in height are to be used.

Trees and groundcovers will be installed in accordance with Western Bay of Plenty District Council Infrastructure Development Code Drawings: W200 - Streetscape, including compliance with street tree offset distances to roading infrastructure as outlined in Standard Drawing W201 - Street Trees: Tree Location)

PLANTING PALETTES

The below is a list of proposed trees and groundcover plants that are suitable to be used in the streetscape (berms) within this street classification. Final selections are to be confirmed at Engineering Approval stage and subject to council review.

STREET TREE PALETTE [SUGGESTED SPP.]

- Acer palmatum ‘Senkaki’
- Pohutukawa ‘Maori Princess’ / Small Pohutukawa
- Carpinus betulus ‘Fastigiata’ / Upright Hornbeam
- Sophora microphylla / Kowhai
- Cornus ‘Eddies White Wonder’ / Flowering Dogwood
- Olea Europea ‘El Greco’ / Olive
- Magnolia ‘Little Gem’ / Small Mangnolia
- Pyrus salicifolia ‘Pendula’ / Weeping Pear

GROUNDCOVERS - GENERAL BERM PALETTE [SUGGESTED SPP.]

- Coprosma acerosa / Taupata
- Coprosma ‘Red Rocks’
- Dianella nigra ‘Little Jess’
- Dietes irioides / Butterfly Iris
- Hebe ‘Wiri Mist’ / Koromiko
- Lomandra Nyalla
- Muehlenbeckia astonii / Pohuehue
- Pimelea prostrata / NZ daphine
- Pittosporum ‘Golf Ball’ / Dwarf Pittosporum

GROUNDCOVERS - LOW GROWING PALETTE [SUGGESTED SPP.]

- Carex comans ‘Bronze’
- Coprosma ‘Hawera’
- Dianella nigra / Little Jess
- Hebe ‘Emerald Gem’
- Libertia ixiodies / Mikoikoi
- Libertia peregrinans / Mikoikoi
- Lomandra ‘Lime Tuff’
- Muehlenbeckia complexa / Pohuehue
- Pimelia prostrata / NZ daphine
- Pratia angulata / Pānakenake

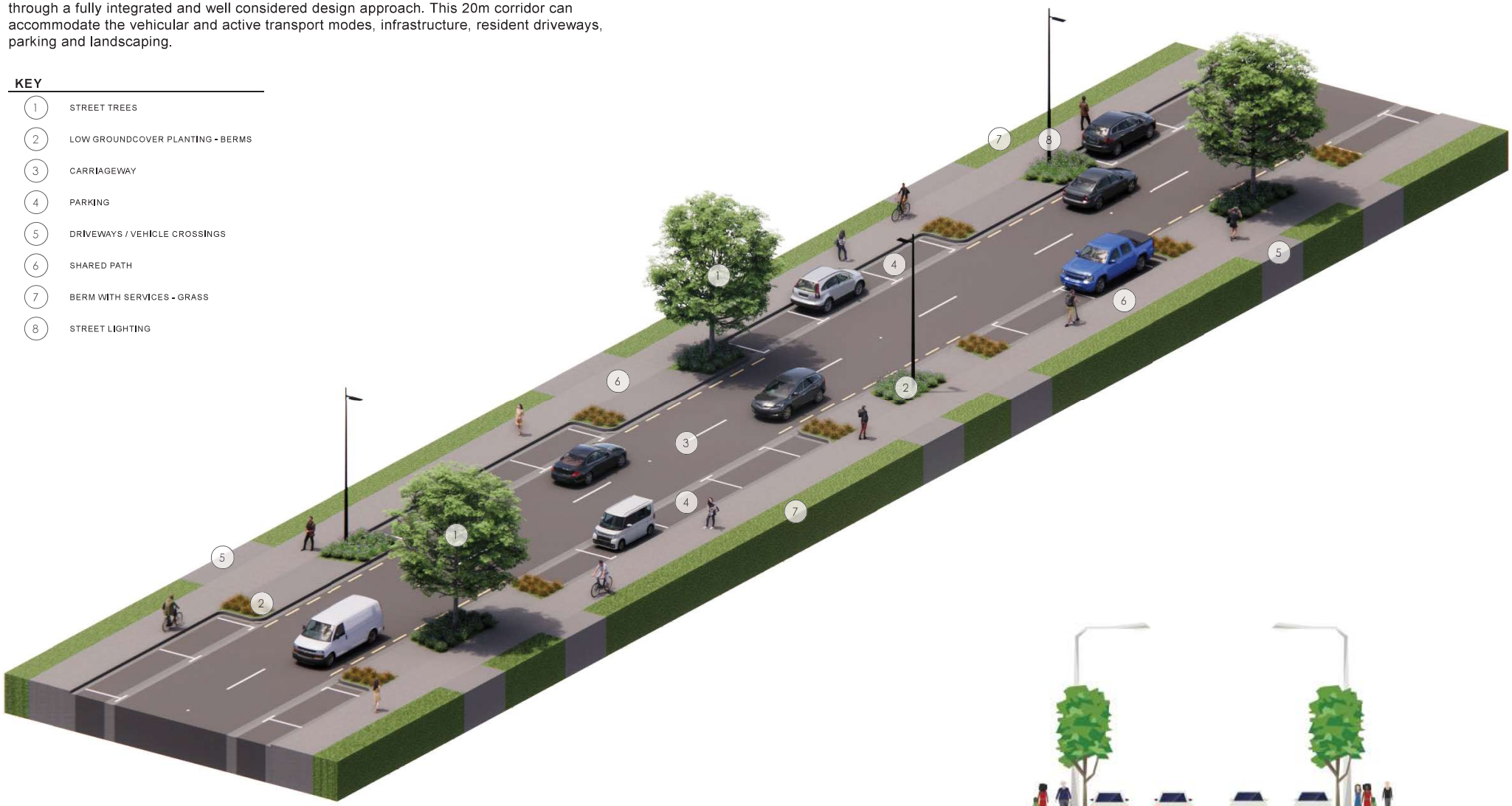
1.4.1 RESIDENTIAL STREETS

3D VISUAL OF ROAD CORRIDOR - PRIMARY RESIDENTIAL

This profile of the primary residential road illustrates how the road functions as intended through a fully integrated and well considered design approach. This 20m corridor can accommodate the vehicular and active transport modes, infrastructure, resident driveways, parking and landscaping.

KEY

1. STREET TREES
2. LOW GROUNDCOVER PLANTING - BERMS
3. CARRIAGEWAY
4. PARKING
5. DRIVEWAYS / VEHICLE CROSSINGS
6. SHARED PATH
7. BERM WITH SERVICES - GRASS
8. STREET LIGHTING



ROAD PROFILE: PRIMARY RESIDENTIAL [20M] | SPEED 40KM/HR

1.4.2 RESIDENTIAL STREETS

3D VISUAL OF ROAD CORRIDOR - SECONDARY RESIDENTIAL

This profile of the secondary residential road illustrates how the road functions as intended through a fully integrated and well considered design approach. This 18m corridor can accommodate the vehicular and active transport modes, infrastructure, resident driveways, parking and landscaping.

KEY

1. STREET TREES
2. LOW GROUNDCOVER PLANTING - BERMS
3. CARRIAGEWAY
4. PARKING
5. DRIVEWAYS / VEHICLE CROSSINGS
6. SHARED PATH
7. BERM WITH SERVICES - GRASS
8. STREET LIGHTING

ROAD PROFILE: SECONDARY RESIDENTIAL [18M] | SPEED 40KM/HR | <300 DWELLING UNITS

1.4.3 RESIDENTIAL STREETS

3D VISUAL OF ROAD CORRIDOR - MINOR RESIDENTIAL

This profile of the minor residential road illustrates how the road functions as intended through a fully integrated and well considered design approach. This 12m corridor can accommodate the vehicular and active transport modes, infrastructure, resident driveways, parking and landscaping.

KEY

1. STREET TREES
2. LOW GROUNDCOVER PLANTING - BERMS
3. CARRIAGEWAY
4. PARKING
5. DRIVEWAYS / VEHICLE CROSSINGS
6. SHARED PATH
7. BERM WITH SERVICES - GRASS
8. STREET LIGHTING

ROAD PROFILE: MINOR RESIDENTIAL [12M] | SPEED 40KM/HR | <50 DWELLING UNITS

1.4.5 RESIDENTIAL STREETS

3D VISUAL OF ROAD CORRIDOR - ACCESS LANE

This profile of the access lane illustrates how these shared zones functions as intended through a fully integrated and well considered design approach. This 9m corridor creates a a safe low speed environment that can accommodate vehicles, resident driveways, landscaping and a space for residents to interact and enjoy.

KEY

1. STREET TREES
2. LOW GROUNDCOVER PLANTING - BERMS
3. CARRIAGEWAY / SHARED SPACE
4. DRIVEWAYS / VEHICLE CROSSINGS
5. STREET LIGHTING
6. NO-PARKING LINES

ROAD PROFILE: Access Lane (9m) | Private | Speed 10km/hr | <20 Dwelling Units

1.5 BELL ROAD COLLECTOR

PLANTING STRATEGY

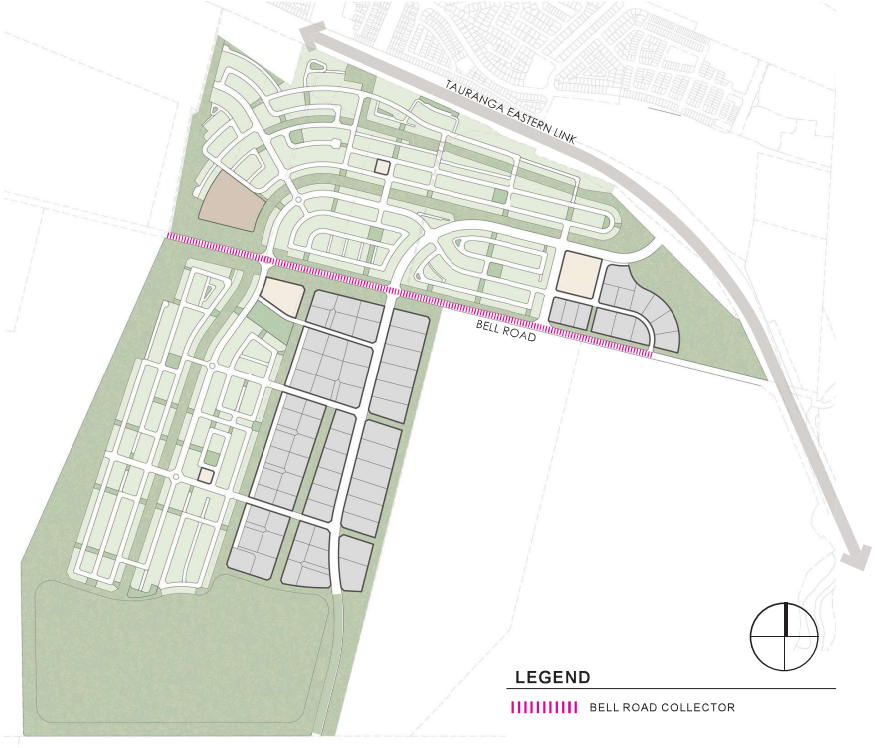
Bell Road is an existing rural road that is proposed to be upgraded along the section that runs through the Wairakei South Development area. The intention is to retain some of the rural aesthetic of the road, but improve on the current provisions with shared pathways, wide shoulders, centre medians, lighting, etc.

This road corridor will have limited landscape treatments, with planting only incorporated on the sloped berms leading down to the swales either side of the corridor. No trees are proposed in the corridor itself but will be present in numbers along the swale corridors.

Low groundcover plants are proposed for the slopes, with a defined edge against the sides of the shared pathways, then a transition to typical swale/ wetland plant species as the slope blends into the swales. Shrub and groundcover species are to be hardy grasses and shrubs that can tolerate the harsh conditions

In locations such as intersections and mid-block pedestrian crossings, where visibility is a key consideration, only those species that grow less than 300-350mm in height are to be used. Colour variation in the vegetation can also support the emphasis of pedestrian specific zones.

Groundcovers are to be installed in accordance with Western Bay of Plenty District Council Infrastructure Development Code Drawings: W200 – Streetscape.



PLANTING PALETTES

The below is a list of proposed trees and groundcover plants that are suitable to be used in the streetscape (berms) within this street classification. Final selections are to be confirmed at Engineering Approval stage and subject to council review.

GROUNDCOVERS - GENERAL BERM PALETTE [SUGGESTED SPP.]

- Coprosma acerosa / Taupata
- Coprosma repens ‘Poor Knights’
- Coprosma ‘Red Rocks’
- Dianella nigra ‘Little Jess’
- Dietes irioides / Butterfly Iris
- Hebe ‘Wiri Mist’ / Koromiko
- Lomandra Nyalla
- Muehlenbeckia astonii / Pohuehue
- Phormium ‘Green Dwarf’ / ‘Emerald Gem’
- Pimelia prostrata / NZ daphine
- Pittosporum ‘Golf Ball’ / Dwarf Pittosporum

GROUNDCOVERS - LOW GROWING PALETTE [SUGGESTED SPP.]

- Carex comans ‘Bronze’
- Coprosma ‘Hawera’
- Dianella nigra / Little Jess
- Hebe ‘Emerald Gem’
- Libertia ixiodies / Mikoikoi
- Libertia peregrinans / Mikoikoi
- Lomandra ‘Lime Tuff’
- Muehlenbeckia complexa / Pohuehue
- Pimelea prostrata / NZ daphine
- Pratia angulata / Pānakenake

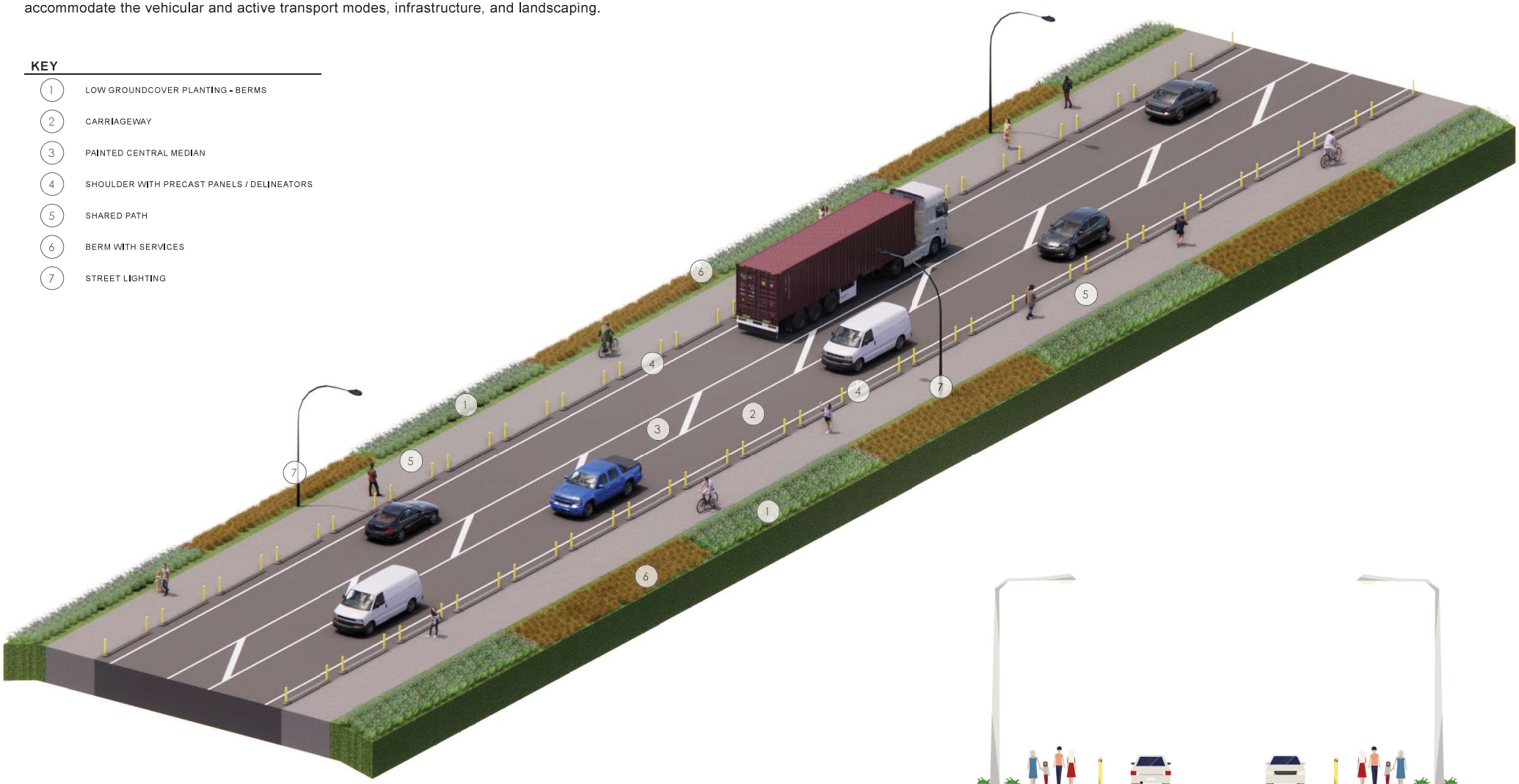
1.5.1 BELL ROAD COLLECTOR

3D VISUAL OF ROAD CORRIDOR

This profile of the Bell Road collector upgrade illustrates how the road functions as intended through a fully integrated and well considered design approach. This 25m corridor can accommodate the vehicular and active transport modes, infrastructure, and landscaping.

KEY

1. LOW GROUNDCOVER PLANTING - BERMS
2. CARRIAGEWAY
3. PAINTED CENTRAL MEDIAN
4. SHOULDER WITH PRECAST PANELS / DELINEATORS
5. SHARED PATH
6. BERM WITH SERVICES
7. STREET LIGHTING



ROAD PROFILE: BELL ROAD (MID BLOCK) [25M] | SPEED 60KM/HR

1.6 INDUSTRIAL ROADS

PLANTING STRATEGY

The two roads running through the industrial zones of the development are designed with additional space to accommodate heavy vehicles and wide turning radius' to support industrial activities. The industrial collector profile also supports public transport and through traffic to ensure strong interconnectedness of the roading network within Wairakei South.

The industrial streets will have similar treatment to the tree framework in the collector road corridors, with a focus on ensuring trees of scale and upright form are accommodated to respond to the larger bulk and scale of the industrial buildings anticipated within this zone.

Low groundcover plants are proposed to be located underneath the trees and all the berms that sit adjacent the carriageway to provide a strong aesthetic and greening of this corridor. Shrub and groundcover species are to be hardy grasses and shrubs that can tolerate the harsh conditions these road classifications present.

All plants are to enable good open sightlines, with most plant species selected being the type that generally grow less than 500mm in height.

In locations such as intersections and mid-block pedestrian crossings, where visibility is a key consideration, only those species that grow less than 300-350mm in height are to be used.

Trees and groundcovers are to be installed in accordance with Western Bay of Plenty District Council Infrastructure Development Code Drawings: W200 - Streetscape, including compliance with street tree offset distances to roading infrastructure as outlined in Standard Drawing W201 - Street Trees: Tree Location)

PLANTING PALETTES

The below is a list of proposed trees and groundcover plants that are suitable to be used in the streetscape (berms) within this street classification. Final selections are to be confirmed at Engineering Approval stage and subject to council review.

STREET TREE PALETTE [SUGGESTED SPP.]

- Agathis australis / Kauri
- Carpinus betulus 'Fastigiata' / Upright Hornbeam
- Ginkgo biloba 'Fastigiata' / Upright Ginkgo
- Quercus robur 'Fastigiata' / Upright English Oak
- Knightia excelsa / Rewarewa
- Alectryon excelsus / Titoki

GROUNDCOVERS - GENERAL BERM PALETTE [SUGGESTED SPP.]

- Coprosma acerosa / Taupata
- Coprosma repens 'Poor Knights'
- Coprosma 'Red Rocks'
- Dianella nigra 'Little Jess'
- Dietes irioides / Butterfly Iris
- Hebe 'Wiri Mist' / Koromiko
- Lomandra Nyalla
- Muehlenbeckia astonii / Pohuehue
- Phormium 'Green Dwarf' / 'Emerald Gem'
- Pimelia prostrata / NZ daphine
- Pittosporum 'Golf Ball' / Dwarf Pittosporum

GROUNDCOVERS - LOW GROWING PALETTE [SUGGESTED SPP.]

- Carex comans 'Bronze'
- Coprosma 'Hawera'
- Dianella nigra / Little Jess
- Hebe 'Emerald Gem'
- Libertia ixiodies / Mikoikoi
- Libertia peregrinans / Mikoikoi
- Lomandra 'Lime Tuff'
- Muehlenbeckia complexa / Pohuehue
- Pimelea prostrata / NZ daphine
- Pratia angulata / Pānakenake

1.6.1 INDUSTRIAL ROADS

3D VISUAL OF ROAD CORRIDOR

This profile of the industrial collector road illustrates how the road functions as intended through a fully integrated and well considered design approach. This 25m corridor can accommodate the vehicular and active transport modes, public transport, infrastructure, business driveways, parking and landscaping.

KEY

1. STREET TREES
2. LOW GROUNDCOVER PLANTING - BERMS
3. CARRIAGEWAY
4. PARKING
5. DRIVEWAYS / VEHICLE CROSSINGS
6. SHARED PATH
7. BERM WITH SERVICES - GRASS
8. STREET LIGHTING
9. PAINTED CENTRAL MEDIAN

ROAD PROFILE: INDUSTRIAL COLLECTOR [25M] | SPEED 40KM/HR

1.6.2 INDUSTRIAL ROADS

3D VISUAL OF ROAD CORRIDOR

This profile of the local industrial road illustrates how the road functions as intended through a fully integrated and well considered design approach. This 20m corridor can accommodate the vehicular and active transport modes, infrastructure, business driveways, parking and landscaping.

KEY

1. STREET TREES
2. LOW GOUNDCOVER PLANTING - BERMS
3. CARRIAGEWAY
4. PARKING
5. DRIVEWAYS / VEHICLE CROSSINGS
6. SHARED PATH
7. BERM WITH SERVICES - GRASS
8. STREET LIGHTING
9. PAINTED CENTRAL MEDIAN

ROAD PROFILE: INDUSTRIAL LOCAL [20M] | ADJ. RESERVE EDGE | SPEED 40KM/HR

1.7 TRAFFIC CALMING & PEDESTRIAN CROSSINGS

This plan shows the locations of all the primary intersections, pedestrian crossings, traffic calming and management measures proposed on the roading network within Wairakei South.

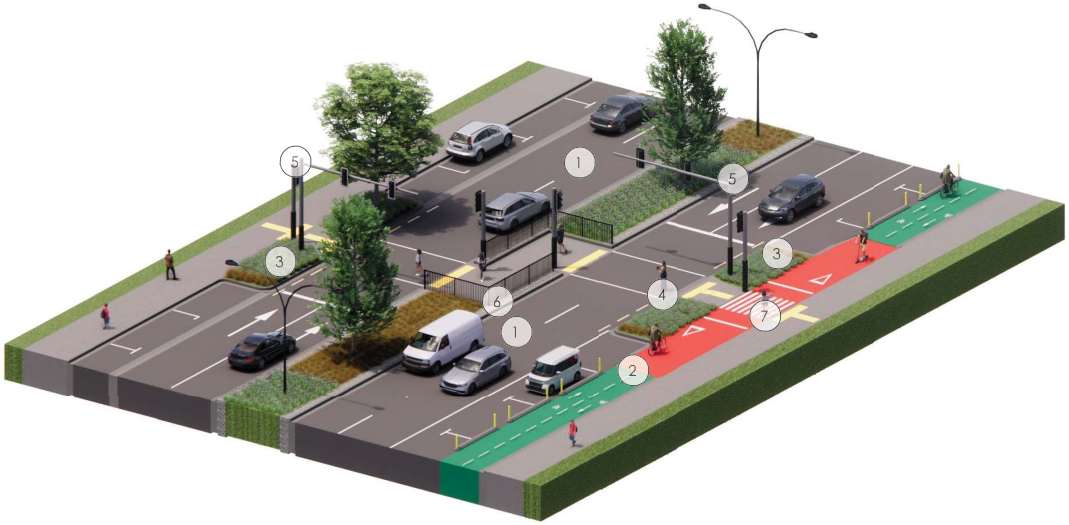
The following pages provide visual illustrations of the proposed pedestrian crossings and traffic calming measures to outline the design intent and show how the streets will function safely for both vehicles and pedestrians.

NOTE:
Refer to *Appendix I - Integrated Transport Assessment, Boffa Miskell* & *Appendix D - Engineering Drawings, Maven* for more detail on traffic calming.

1.7.1 PEDESTRIAN CROSSINGS

The below 3D visuals illustrate the intended design configuration of pedestrian crossings proposed in Wairakei South. These are in addition to typical crossings required at intersections, which are captured in the civil drawings. Locations for these treatments can be found on the plan on page *1.7 Traffic Calming and Pedestrian Crossings*.

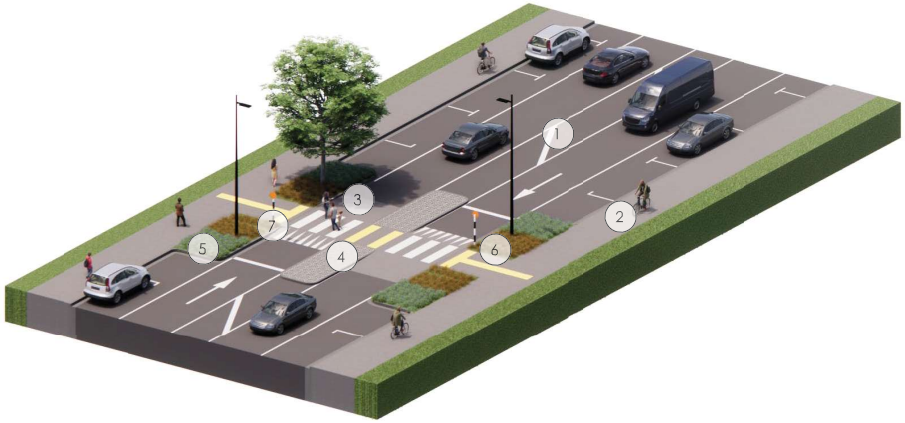
STAGGERED SIGNALISED PEDESTRIAN CROSSING



KEY

1. CARRIAGEWAY
2. BI-DIRECTIONAL CYCLEWAY
3. LOW PLANTING TO RETAIN OPEN SIGHTLINES
4. WIDENED BERM / SHARED PATH TO EDGE OF TRAFFIC LANES
5. PEDESTRIAN / TRAFFIC SIGNALS
6. FENCED PATH EDGES TO CENTRAL MEDIAN FOR PEDESTRIAN SAFETY
7. PEDESTRIAN CROSSING TO CYCLEWAY

RAISED TABLE PEDESTRIAN CROSSING



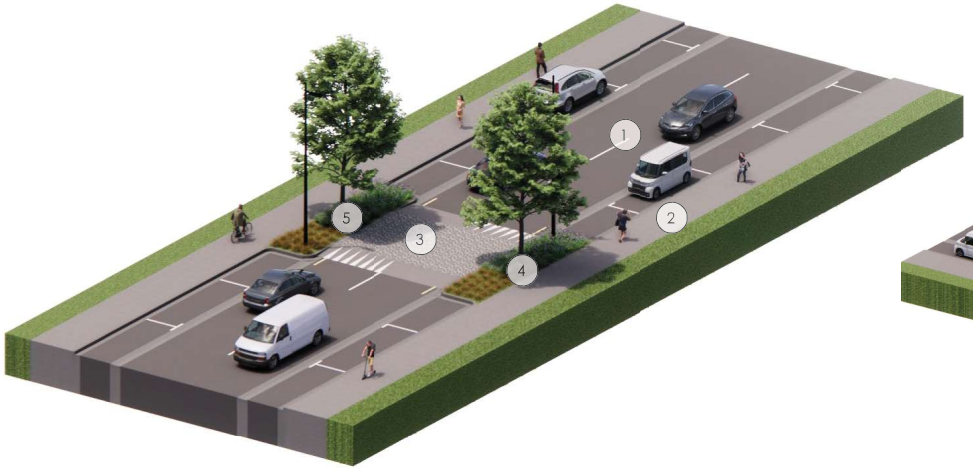
KEY

1. CARRIAGEWAY
2. SHARED PATHWAY
3. RAISED TABLE PEDESTRIAN CROSSING
4. PEDESTRIAN REFUGE ISLAND
5. LOW PLANTING TO RETAIN OPEN SIGHTLINES
6. WIDENED BERM / SHARED PATH TO EDGE OF TRAFFIC LANES
7. PEDESTRIAN CROSSING SIGNS / LIGHTING

1.7.2 TRAFFIC CALMING

The below 3D visuals and example imagery illustrate the intended design configuration of speed tables proposed in Wairakei South. Locations for these treatments can be found on the plan on page *1.7 Traffic Calming and Pedestrian Crossings*.

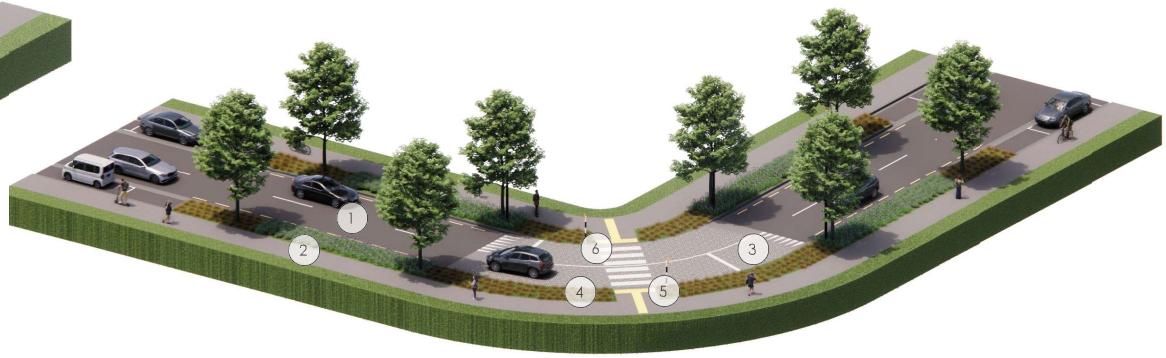
SPEED TABLE / RAISED CAUSEWAY



KEY

1. CARRIAGEWAY
2. SHARED PATHWAY
3. RAISED TABLE (LENGTH VARIES DEPENDING ON LOCATION)
4. WIDENED BERM TO EDGE OF TRAFFIC LANES TO RESTRICT WIDTH
5. LOW PLANTING AND TREES TO CREATE THRESHOLD AND SIDE FRICTION

RAISED CAUSEWAY



KEY

1. CARRIAGEWAY
2. SHARED PATHWAY
3. RAISED TABLE / CAUSEWAY (LENGTH VARIES DEPENDING ON LOCATION)
4. WIDENED BERM TO EDGE OF TRAFFIC LANES TO RESTRICT WIDTH
5. LOW PLANTING AND TREES TO CREATE THRESHOLD AND SIDE FRICTION
6. PEDESTRIAN CROSSING MAY BE INCLUDED WITHIN RAISED CAUSEWAY DEPENDING ON LOCATION

Boffa Miskell

2.0 STORMWATER NETWORK

2.1 STORMWATER NETWORK

This section outlines the various stormwater reserve areas within Wairakei South. Each stormwater reserve category has a specific landscape treatment and planting strategy.

The stormwater reserve categories vary depending on the function they complete within the the wider stormwater system, but predominantly fall within the following three categories:

1. **STORMWATER DIVERSION SWALES**
2. **STORMWATER CONVEYANCE AND TREATMENT SWALES**
3. **STORMWATER ATTENUATION AND TREATMENT WETLANDS**

Further detail on the various typical landscape treatments and plant strategies for each of these categories can be found in the subsequent pages.

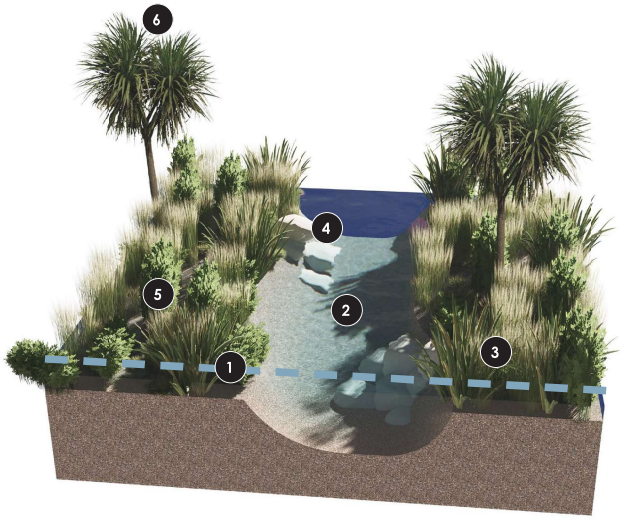
NOTE:
Refer to *Appendix D - Engineering Drawings, Maven* & *Appendix G - Stormwater Management Plan, Maven* for more detail.

STORMWATER CONVEYANCE NETWORK

The extensive stormwater conveyance network throughout the development are to act as movement corridors for freshwater, ecology, habitat and residents alike and to follow the following design criteria to inform the design in latter stages of the project and ensure key performance outcomes are met:

- Low flow channels to run along the base of each swale corridor, with meandering alignment and varied form and size to channel profiles.
- Low flow channels and other water bodies will have their edges planted as a minimum requirement, with extensive planting to other areas where able to do so. If suitable, the channels themselves will have wetland plants within the water bodies to provide treatment for improved water quality and habitat for aquatic wildlife.
- Where the RL of the swale floor is <300mm above the RL of the water table, they will be fully planted with suitable wetland species that allow for stormwater to still flow through but minimises maintenance due to impracticalities of mowing these areas with having elevated water saturation levels within the soil structure.
- Slopes steeper than 1:3 will be fully planted as they are not suitable for mowing.
- Trees with large scale canopy structure will be planted in clusters throughout the stormwater network to provide shading of water bodies, habitat for birdlife, structure to the vegetation framework and general shade, scale and amenity for residents moving through and recreating within the corridors.
- There will be a shared pathway network throughout the stormwater corridors that serve dual purpose as community movement infrastructure and maintenance access for council staff.
- The pathway network will sit above the 50-year event stormwater flood level to ensure they are usable most of the time as legitimate multi-modal movement corridors.
- Where suitable to do so there will be areas for general open space for residents to recreate and socialise in placed throughout the network.
- Cultural expression and opportunities for mana whenua to influence cultural storytelling and placement will be included throughout the stormwater network.

Indicative low flow channel diagram



KEY

1. Indicative surface water level
2. Meandering channels with varied profiles to create variety of habitat for native aquifauna
3. Shallow marsh planting with larger species planted along the edge to create overhang / shading
4. Large rocks and logs placed within areas of the lowflow channel (at edges) to create variety in habitat and resting spaces for native fish and insects
5. Reed species selected to support native fish spawning habitat
6. Clusters of trees placed to create shading and provide bird habitat

STORMWATER WETLANDS

- The stormwater wetlands located to the east and south of the development areas have a primary function of attenuating and treating stormwater, but they are also designed to provide wider, ecological, biodiversity and recreation opportunities. The following design criteria are to inform the design in latter stages of the project and ensure key performance outcomes are met:
- Low flow channels will run throughout each wetland, with meandering alignment and varied form and size to channel profiles, plus deep pools providing areas of open water for managing sediment settlement and enabling waterfowl to better interact with the wetland.
- The wetland will consist of areas of shallow and deep marsh with suitable wetland species (rushes and sedges) installed to treat the water and provide habitat for invertebrates, aquatic wildlife and birds.
- Trees with large scale canopy structure and riparian shrub species will be planted in clusters throughout the wetland by way of islands within and surrounding the treatment wetland / pond area to provide shading of water bodies, habitat for birdlife, vertical scale and form and increase the biodiversity of the wetland.
- Old logs and tree stumps discovered in the site excavation works will be repurpose into the wetland area to act as natural fish and lizard habitat, and bird perching structures. Any logs that are suitable for carving should be offered to local Iwi to utilise.
- Vegetate all areas where there is heavily waterlogged soils and grass isn't likely to perform.
- There will be a shared pathway network throughout the stormwater wetlands that serve dual purpose as community movement corridors and maintenance access for council staff.
- Where suitable to do so there will be areas for general open space for residents to recreate and socialise in placed throughout the network.
- Cultural expression and opportunities for mana whenua to influence cultural storytelling and placement will be included throughout the stormwater network.

2.3 LANDSCAPE MITIGATION

This section outlines the mitigation measures identified in *Appendix K - Assessment of Landscape Effects* prepared by Boffa Miskell for the Wairakei South Development that relate specifically to the stormwater reserves and note the treatments required to manage visual effects and integrate the site within the wider landscape.

The three primary outcomes relating to vegetation within and scale of the reserves are noted as follows:

1. LARGE RURAL CANOPY CLUSTERS

Incorporation of clusters of large rural canopy trees, a mixture of fast-growing exotic and interplanted with pockets of native revegetatioon species to provide scale and character to the development that visually integrates it into the surrounding rural landscape. The purpose is to provide an overall visual screening interface of 75% whilst providing angled views outward, from the development, toward Te Rae O Papamoa and the Te Puke Foothills.

2. PHYSICAL DISTANCING

The use of stormwater reserves for the provision of large canopy vegetation and achieving physical separation from the boundary

3. RECONNECT THE SITE TO ITS HISTORICAL INDIGENOUS STATE

Establishing vegetation cover in the southern stormwater treatment wetland that provides large groupings of canopy native lowland forest, remnant of the wetland and podocarp forest that dominated this landscape. The purpose is to reconnect the site to its indigenous historical state and provide a strong vegetated framework of canopy vegetation that connects to the 'mountains to sea' connection of vegetation cover. This is critical to the enhancement of landscape values to the underlying abiotic and biotic attributes within the landscape.

4. VISUAL DOMINANCE

Ensuring built form avoids visual dominance in the landscape by way of colour, building branding methods, signage and spot lighting (illuminated signage) at the boundary interfaces.

Ensure building setbacks and height controls at boundary interface.

NOTES:

1. Detail on how the above are measures are applied to the design response can be found in the following pages.
2. Refer to Industrial Zone Design Guidelines for more information and visuals on these mitigation provisions

LEGEND

- SITE BOUNDARY
- RESIDENTIAL (MDRZ) ZONE
- EMPLOYMENT (INDUSTRIAL)
- SERVICE CENTRE (COMMERCIAL)
- NEIGHBOURHOOD & LOCAL CENTRES (COMMERCIAL)
- PRIMARY SCHOOL
- STORMWATER RESERVE
- NEIGHBOURHOOD RESERVES / GREEN LINKS / STORMWATER CONNECTIONS
- LANDSCAPE MITIGATION OUTCOMES 1 & 2 AREAS [1]
- LANDSCAPE MITIGATION OUTCOME 3 AREA [1]
- LANDSCAPE MITIGATION OUTCOME 4 AREA [2]

2.4 STORMWATER SWALE PLANTING

PLANTING STRATEGY

There are several swales running through Wairakei South Development, all of which will be serving multiple purposes within the development, including the conveyance and treating of stormwater, provide general open space and amenity, and support active mode transport with a network of shared pathways. These are true blue/green networks.

Generally, the swale bases will all be fully planted out due to their close proximity to the water table, which will provide water treatment and ecological habitat. These will be planted with low growing wetland plants that support this environment and ensure open sightlines are retained. The slopes which are out of the regular floodable areas will mostly be grassed, providing open space for passive recreation opportunities.

Clusters and individual placement of specimen trees will be scattered throughout the swale corridors, on the swale floors, and slopes to provide shade, amenity, and attract birds into the area. Most trees are to be native species, with some larger stature, faster growing exotics proposed for the corridors on the edges of the development area.

Careful placement of trees and shrubs will ensure open sightlines are retained, shade is made available to residents and the overall amenity of the reserve network is of a high standard. Where possible all plant species are to be native and sourced from the local ecological district to ensure good establishment and extension of natural habitat.

Tree placement has also been coordinated with civil design to ensure there are no conflicts with underground services for those located within the swale network.

PLANTING PALETTES

The below is a list of proposed trees and groundcover plants that are suitable to be used in the streetscape (berms) within this street classification and are shown as a guide to. Final selections are to be confirmed at Engineering Approval stage and subject to further engagement with Iwi, and council review.

RIPARIAN

- Aristotelia serrata / Makomako
- Austroderia fulvida / Toetoe
- Carex maorica / Maori Sedge
- Carex secta / Purei
- Carex testacea / Sepckled Sedge
- Coprosma repens / Mirror Plant
- Coprosma robusta / Karamu
- Dianella nigra / Turutu
- Dodonaea viscosa / Akeake
- Kunzea robusta / Kanuka
- Leptospermum scoparium / Manuka
- Muehlenbeckia complexa / Small Leaved Pohuehue
- Phormium tenax / Harakeke
- Veronica stricta / Koromiko

TREES

- Agathis australis / Kauri
- Alectryon excelsus / Titoki
- Coprosma lucida / Karamu
- Cordyline australis / Tī Kōuka
- Dacrycarpus dacrydioides / Kahikatea
- Knightia excelsa / Rewarewa
- Myoporum laetum / Ngaio
- Myrsine australis / Mapou
- Plagianthus regius / Ribbonwood
- Podocarpus totara / Totara
- Prumnopitys ferruginea / Miro
- Prumnopitys taxifolia / Matai
- Sophora microphylla / Kowhai
- Syzygium maire / Maire Tawaki
- Vitex lucens / Puriri

SWALE TREATMENT

- Apodasmia similis / Oioi
- Astelia grandis
- Austroderia fulvida / Toetoe
- Austroderia toetoe / Toetoe
- Carex Geminata / Rautahi
- Carex Lessoniana / Cutty Grass
- Carex Maorica / NZ Sedge
- Carex virgata / Swamp Sedge
- Coprosma propinqua / Mingimingi
- Coprosma tenuicaulis / Hukihuki, Swamp Coprosma
- Coprosma tenuifolia / Wavy-Leaved Coprosma
- Cyperus ustulatus / Giant Umbrella Sedge
- Eleocharis acuta / Sharp Spike Sedge
- Elocharis sphacelata / Bammboo Spike Sedge
- Juncus australis / Leafless Rush
- Juncus edgariae / Edgar's Rush
- Juncus pallidus / Giant Rush
- Machaerina articulata / Jointed Twig Rush
- Machaerina juncea / Bare Twig-Rush
- Machaerina tenax
- Phormium tenax / Harakeke
- Veronica stricta / Koromiko

TREES - MITIGATION SPECIES:

- Agathis australis / Kauri
- Alectryon excelsus / Titoki
- Coprosma lucida / Karamu
- Corynocarpus laevigatus / Karaka
- Knightia excelsa / Rewarewa
- Liquidambar styraciflua / Liquidambar
- Populus nigra / Poplar
- Quercus robur / English Oak

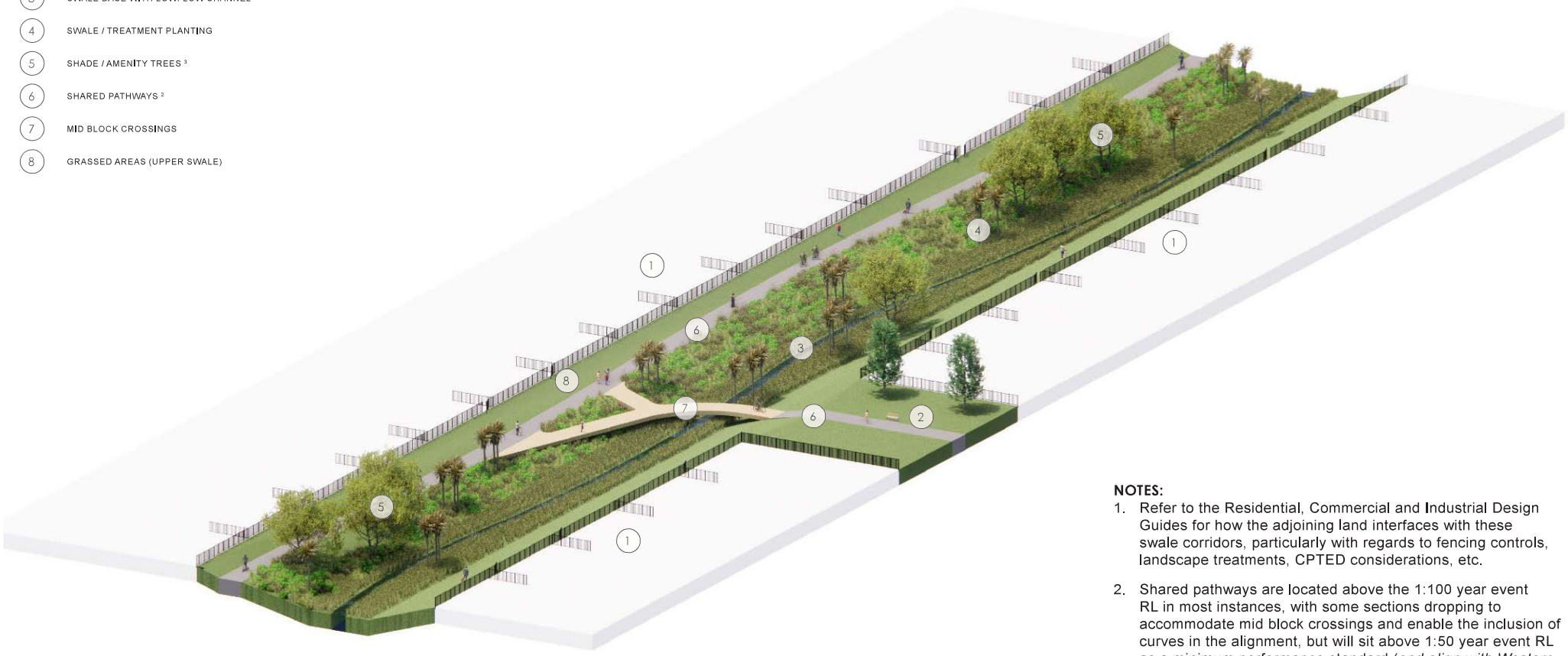
2.4.1 STORMWATER SWALE PLANTING

3D VISUAL OF SWALE CORRIDOR (SWALE N1 & N2)

This profile illustrates how the swales function as an integrated asset for the development. Accommodating stormwater runoff, treatment, biodiversity, amenity, open space and shared pathway network. Swales N1 & N2 are 32m wide.

KEY

1. RESIDENTIAL LOTS [1]
2. GREEN LINK CONNECTIONS
3. SWALE BASE WITH LOWFLOW CHANNEL
4. SWALE / TREATMENT PLANTING
5. SHADE / AMENITY TREES [3]
6. SHARED PATHWAYS [2]
7. MID BLOCK CROSSINGS
8. GRASSED AREAS (UPPER SWALE)



NOTES:

1. Refer to the Residential, Commercial and Industrial Design Guides for how the adjoining land interfaces with these swale corridors, particularly with regards to fencing controls, landscape treatments, CPTED considerations, etc.
2. Shared pathways are located above the 1:100 year event RL in most instances, with some sections dropping to accommodate mid block crossings and enable the inclusion of curves in the alignment, but will sit above 1:50 year event RL as a minimum performance standard (*and align with Western Bay of Plenty District Council's Development Code*)
3. Trees located within the swale floor are to have clear main stems for the bottom 0.5m at time of install and are to be of species that maintain a clear stem for the bottom 1m once mature to ensure stormwater can flow around them cleanly.

2.4.2 STORMWATER SWALE PLANTING

3D VISUAL OF SWALE CORRIDOR (SWALE N3)

This profile illustrates how the swales function as an integrated asset for the development. Accomodating stormwater runoff, treatment, biodiversity, and amenity. Swale N3 is 25m wide.

KEY

1. RESIDENTIAL LOTS [1]
2. RESIDENTIAL ROAD CORRIDOR
3. SWALE BASE WITH LOWFLOW CHANNEL
4. SWALE / TREATMENT PLANTING
5. SHADE / AMENITY TREES [2]
6. SHARED PATHWAYS (ON STREET)
7. MID BLOCK CROSSINGS
8. GRASSED AREAS (UPPER SWALE)
9. GREEN LINK CONNECTIONS

NOTES:

1. Refer to the Residential, Commercial and Industrial Design Guides for how the adjoining land interfaces with these swale corridors, particularly with regards to fencing controls, landscape treatments, CPTED considerations, etc.
2. Trees located within the swale floor are to have clear main stems for the bottom 0.5m at time of install and are to be of species that maintain a clear stem for the bottom 1m once mature to ensure stormwater can flow around them cleanly.

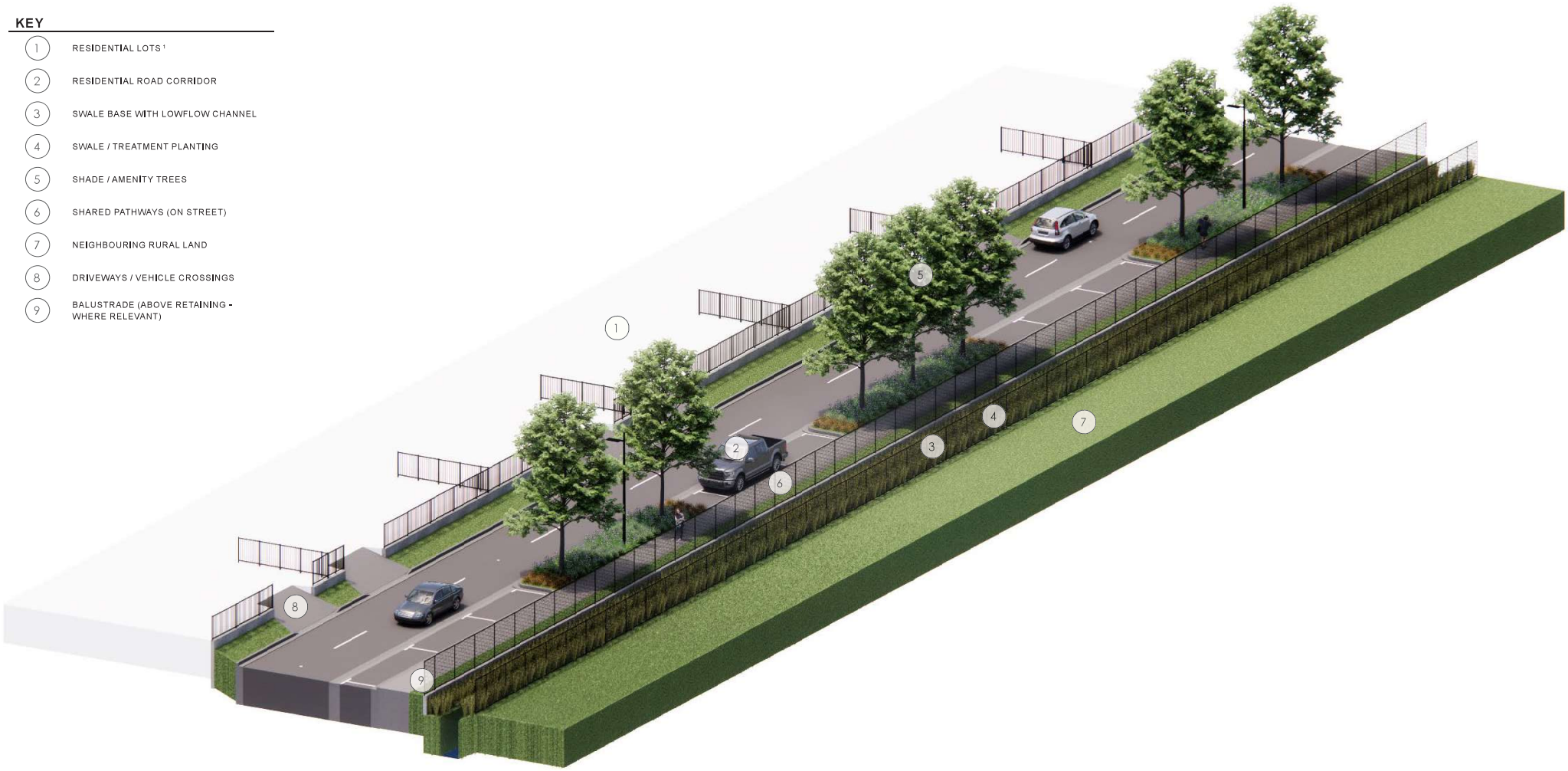
2.4.3 STORMWATER SWALE PLANTING

3D VISUAL OF SWALE CORRIDOR (SWALE N4)

This profile illustrates how the swales function as an integrated asset for the development.
Accomodating stormwater runoff, treatment, and separation buffer to adjoining land.
Swale N4 width varies from 4-26m wide.

KEY

1. RESIDENTIAL LOTS [1]
2. RESIDENTIAL ROAD CORRIDOR
3. SWALE BASE WITH LOWFLOW CHANNEL
4. SWALE / TREATMENT PLANTING
5. SHADE / AMENITY TREES
6. SHARED PATHWAYS (ON STREET)
7. NEIGHBOURING RURAL LAND
8. DRIVEWAYS / VEHICLE CROSSINGS
9. BALUSTRADE (ABOVE RETAINING - WHERE RELEVANT)



NOTES:

1. Refer to the Residential, Commercial and Industrial Design Guides for how the adjoining land interfaces with these swale corridors, particularly with regards to fencing controls, landscape treatments, CPTED considerations, etc.

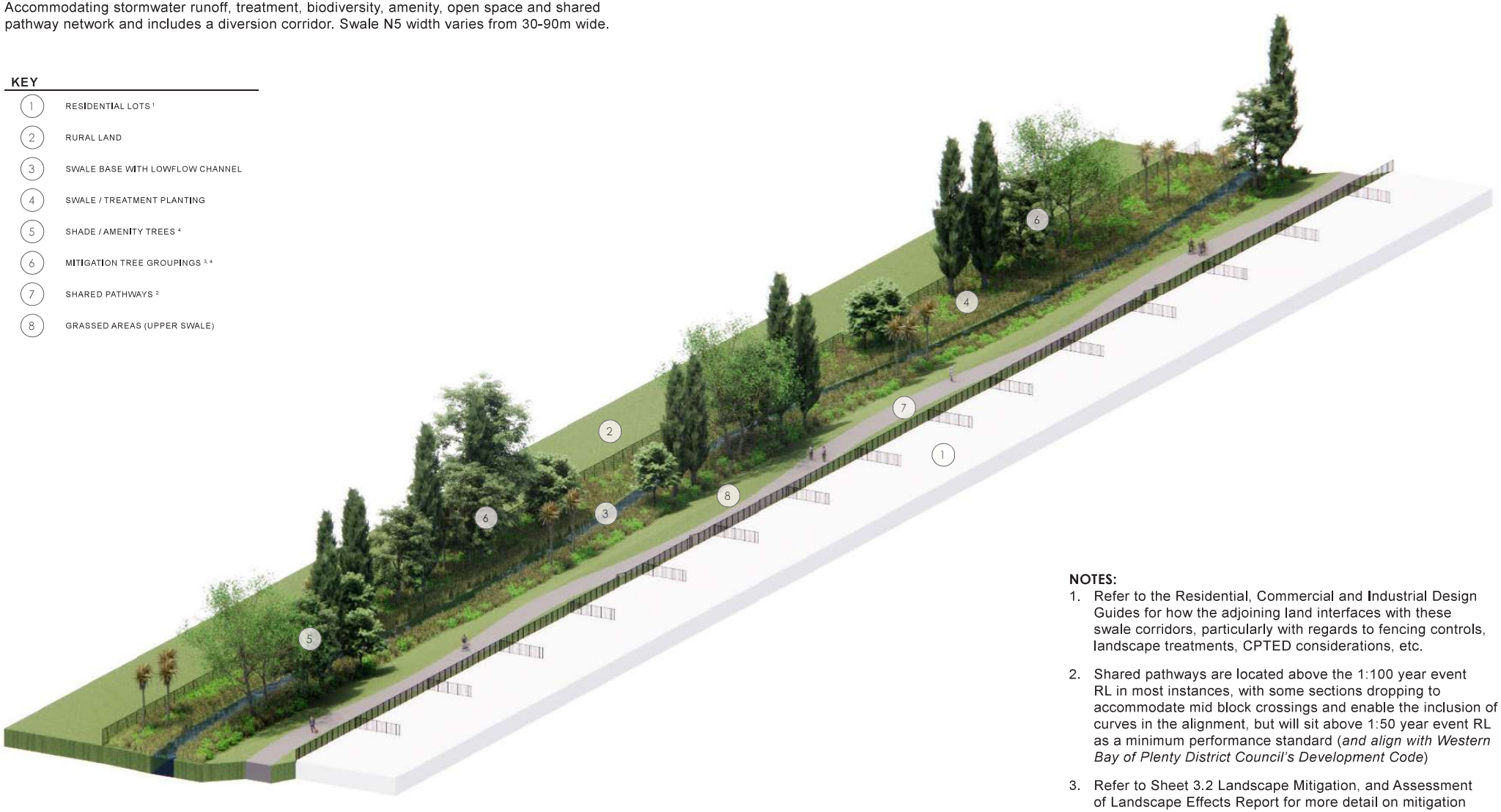
2.4.4 STORMWATER SWALE PLANTING

3D VISUAL OF SWALE CORRIDOR (SWALE N5)

This profile illustrates how the swales function as an integrated asset for the development. Accommodating stormwater runoff, treatment, biodiversity, amenity, open space and shared pathway network and includes a diversion corridor. Swale N5 width varies from 30-90m wide.

KEY

1. RESIDENTIAL LOTS [1]
2. RURAL LAND
3. SWALE BASE WITH LOWFLOW CHANNEL
4. SWALE / TREATMENT PLANTING
5. SHADE / AMENITY TREES [4]
6. MITIGATION TREE GROUPINGS [3, 4]
7. SHARED PATHWAYS [2]
8. GRASSED AREAS (UPPER SWALE)



NOTES:

1. Refer to the Residential, Commercial and Industrial Design Guides for how the adjoining land interfaces with these swale corridors, particularly with regards to fencing controls, landscape treatments, CPTED considerations, etc.
2. Shared pathways are located above the 1:100 year event RL in most instances, with some sections dropping to accommodate mid block crossings and enable the inclusion of curves in the alignment, but will sit above 1:50 year event RL as a minimum performance standard (*and align with Western Bay of Plenty District Council's Development Code*)
3. Refer to Sheet 3.2 Landscape Mitigation, and Assessment of Landscape Effects Report for more detail on mitigation requirements
4. Trees located within the swale floor are to have clear main stems for the bottom 0.5m at time of install and are to be of species that maintain a clear stem for the bottom 1m once mature to ensure stormwater can flow around them cleanly.

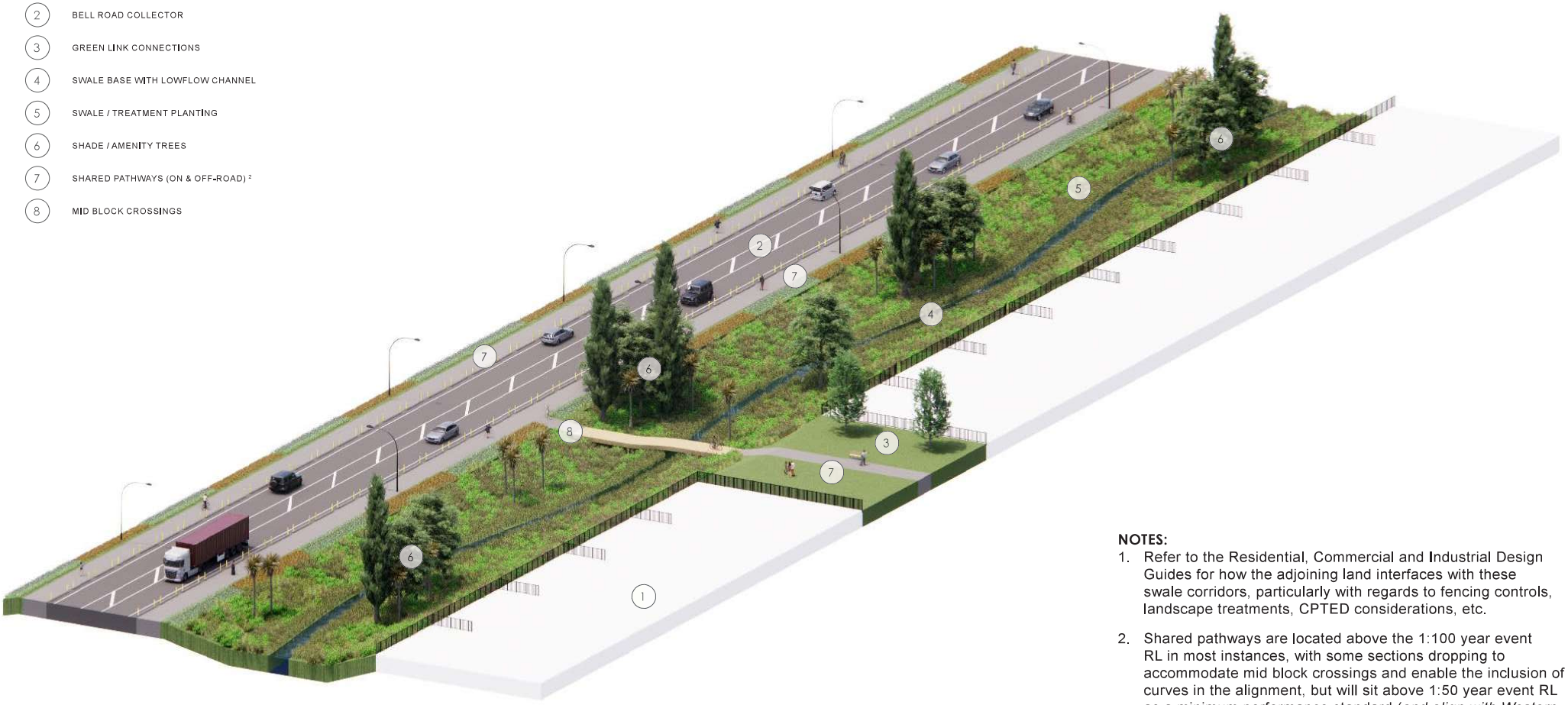
2.4.5 STORMWATER SWALE PLANTING

3D VISUAL OF SWALE CORRIDOR (SWALE N6)

This profile illustrates how the swales function as an integrated asset for the development. Accommodating stormwater runoff, treatment, biodiversity, amenity, and shared pathway network. Swale N6 is 21m wide.

KEY

1. RESIDENTIAL LOTS [1]
2. BELL ROAD COLLECTOR
3. GREEN LINK CONNECTIONS
4. SWALE BASE WITH LOWFLOW CHANNEL
5. SWALE / TREATMENT PLANTING
6. SHADE / AMENITY TREES
7. SHARED PATHWAYS (ON & OFF-ROAD) [2]
8. MID BLOCK CROSSINGS



NOTES:

1. Refer to the Residential, Commercial and Industrial Design Guides for how the adjoining land interfaces with these swale corridors, particularly with regards to fencing controls, landscape treatments, CPTED considerations, etc.
2. Shared pathways are located above the 1:100 year event RL in most instances, with some sections dropping to accommodate mid block crossings and enable the inclusion of curves in the alignment, but will sit above 1:50 year event RL as a minimum performance standard (*and align with Western Bay of Plenty District Council's Development Code*)
3. Trees located within the swale floor are to have clear main stems for the bottom 0.5m at time of install and are to be of species that maintain a clear stem for the bottom 1m once mature to ensure stormwater can flow around them cleanly.

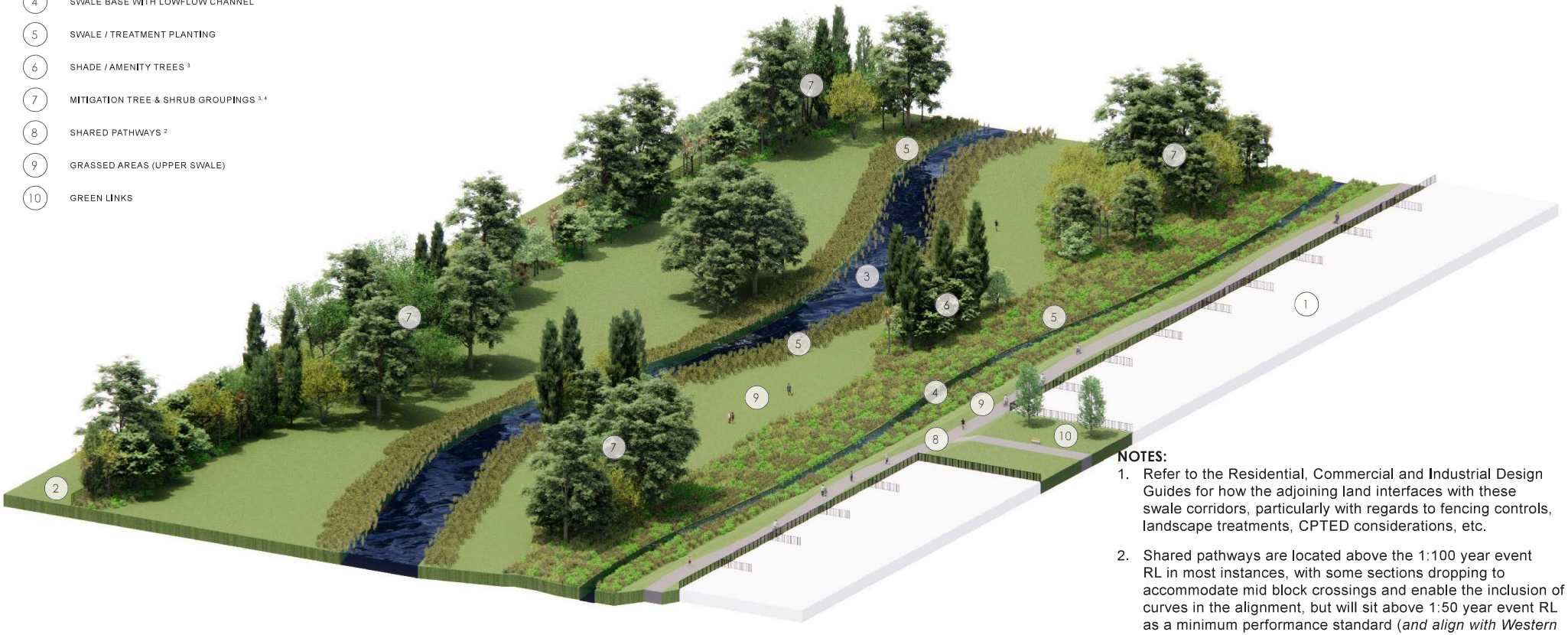
2.4.6 STORMWATER SWALE PLANTING

3D VISUAL OF SWALE CORRIDOR (SWALE S1)

This profile illustrates how the swales function as an integrated asset for the development. Accommodating stormwater runoff, treatment, biodiversity, amenity, open space and shared pathway network and includes a diversion corridor. Swale S1 varies from 78-175m wide.

KEY

1. RESIDENTIAL LOTS [1]
2. RURAL LAND
3. STORMWATER DIVERSION CHANNEL
4. SWALE BASE WITH LOWFLOW CHANNEL
5. SWALE / TREATMENT PLANTING
6. SHADE / AMENITY TREES [3]
7. MITIGATION TREE & SHRUB GROUPINGS [3, 4]
8. SHARED PATHWAYS [2]
9. GRASSED AREAS (UPPER SWALE)
10. GREEN LINKS



NOTES:

1. Refer to the Residential, Commercial and Industrial Design Guides for how the adjoining land interfaces with these swale corridors, particularly with regards to fencing controls, landscape treatments, CPTED considerations, etc.
2. Shared pathways are located above the 1:100 year event RL in most instances, with some sections dropping to accommodate mid block crossings and enable the inclusion of curves in the alignment, but will sit above 1:50 year event RL as a minimum performance standard (*and align with Western Bay of Plenty District Council's Development Code*)
3. Refer to Sheet 2.3 Landscape Mitigation, and Assessment of Landscape Effects Report for more detail on mitigation outcomes.
4. Trees located within the swale floor are to have clear main stems for the bottom 0.5m at time of install and are to be of species that maintain a clear stem for the bottom 1m once mature to ensure stormwater can flow around them cleanly.

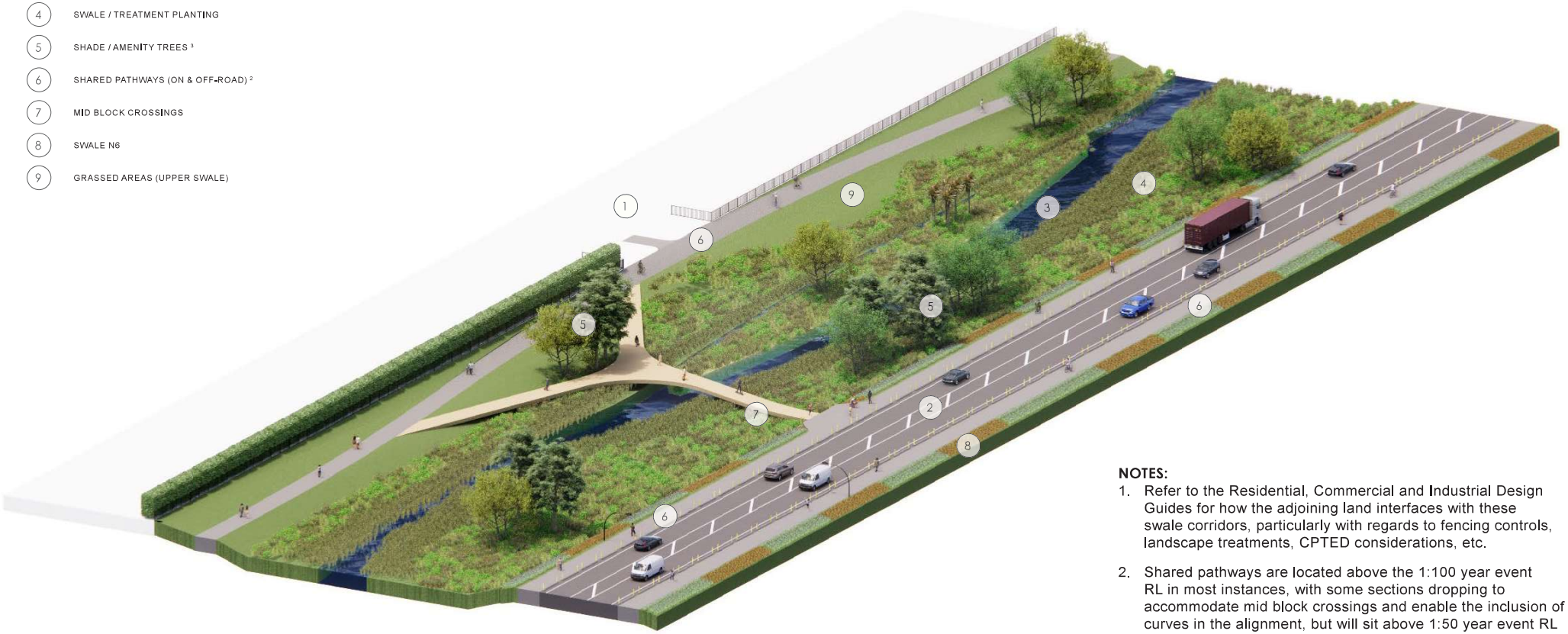
2.4.7 STORMWATER SWALE PLANTING

3D VISUAL OF SWALE CORRIDOR (SWALE S2)

This profile illustrates how the swales function as an integrated asset for the development. Accommodating stormwater runoff, treatment, biodiversity, amenity, and shared pathway network. Swale S2 is 50m wide.

KEY

1. NEIGHBOURHOOD CENTRE (COMMERCIAL)[1]
2. BELL ROAD COLLECTOR
3. SWALE BASE WITH LOWFLOW CHANNELS
4. SWALE / TREATMENT PLANTING
5. SHADE / AMENITY TREES [3]
6. SHARED PATHWAYS (ON & OFF-ROAD) [2]
7. MID BLOCK CROSSINGS
8. SWALE N6
9. GRASSED AREAS (UPPER SWALE)



NOTES:

1. Refer to the Residential, Commercial and Industrial Design Guides for how the adjoining land interfaces with these swale corridors, particularly with regards to fencing controls, landscape treatments, CPTED considerations, etc.
2. Shared pathways are located above the 1:100 year event RL in most instances, with some sections dropping to accommodate mid block crossings and enable the inclusion of curves in the alignment, but will sit above 1:50 year event RL as a minimum performance standard (*and align with Western Bay of Plenty District Council's Development Code*)
3. Trees located within the swale floor are to have clear main stems for the bottom 0.5m at time of install and are to be of species that maintain a clear stem for the bottom 1m once mature to ensure stormwater can flow around them cleanly.

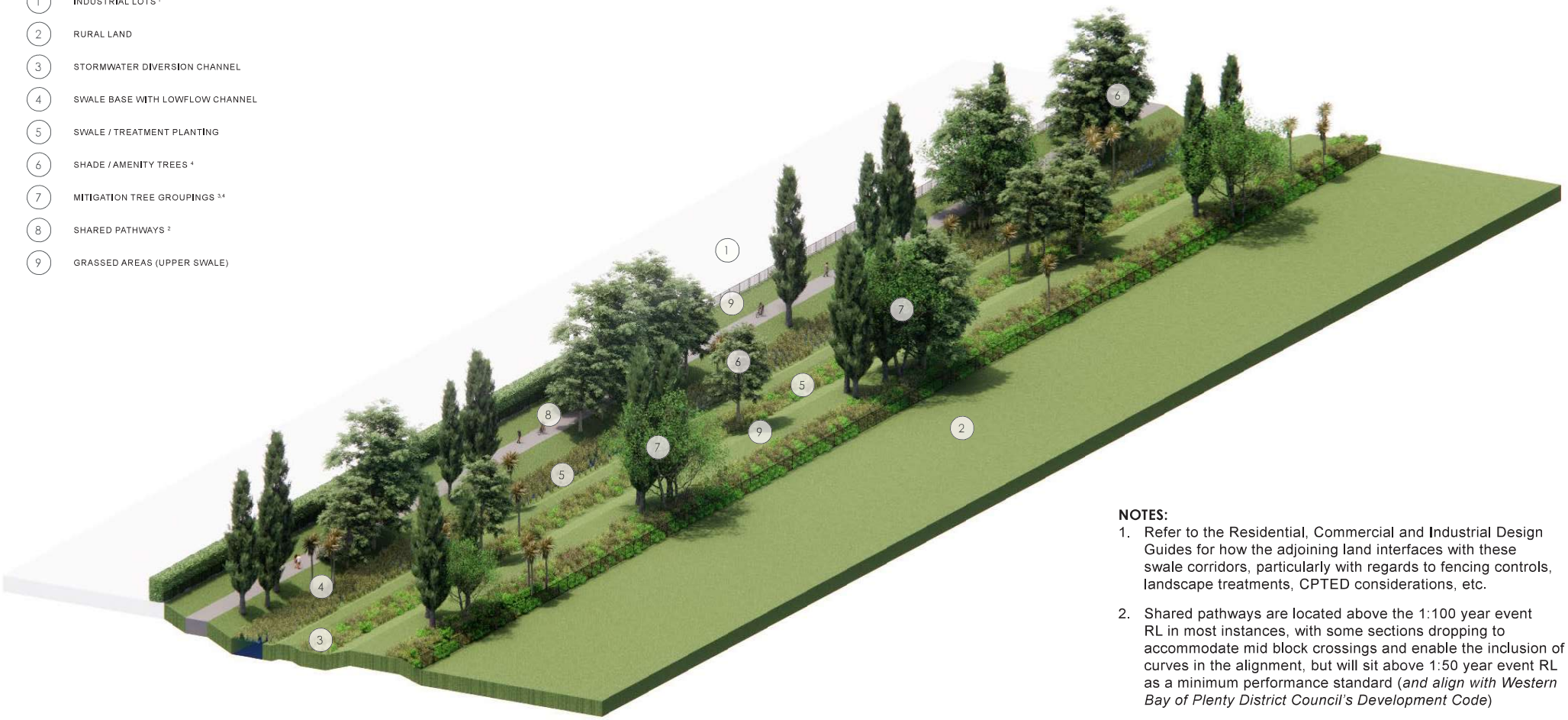
2.4.8 STORMWATER SWALE PLANTING

3D VISUAL OF SWALE CORRIDOR (SWALE S3)

This profile illustrates how the swales function as an integrated asset for the development. Accommodating stormwater runoff, treatment, biodiversity, amenity, open space and shared pathway network. Swale S3 is 35m wide.

KEY

1. INDUSTRIAL LOTS [1]
2. RURAL LAND
3. STORMWATER DIVERSION CHANNEL
4. SWALE BASE WITH LOWFLOW CHANNEL
5. SWALE / TREATMENT PLANTING
6. SHADE / AMENITY TREES [4]
7. MITIGATION TREE GROUPINGS [3,4]
8. SHARED PATHWAYS [2]
9. GRASSED AREAS (UPPER SWALE)



NOTES:

1. Refer to the Residential, Commercial and Industrial Design Guides for how the adjoining land interfaces with these swale corridors, particularly with regards to fencing controls, landscape treatments, CPTED considerations, etc.
2. Shared pathways are located above the 1:100 year event RL in most instances, with some sections dropping to accommodate mid block crossings and enable the inclusion of curves in the alignment, but will sit above 1:50 year event RL as a minimum performance standard (*and align with Western Bay of Plenty District Council's Development Code*)
3. Refer to Sheet 3.2 Landscape Mitigation, and Assessment of Landscape Effects Report for more detail on mitigation requirements
4. Trees located within the swale floor are to have clear main stems for the bottom 0.5m at time of install and are to be of species that maintain a clear stem for the bottom 1m once mature to ensure stormwater can flow around them cleanly.

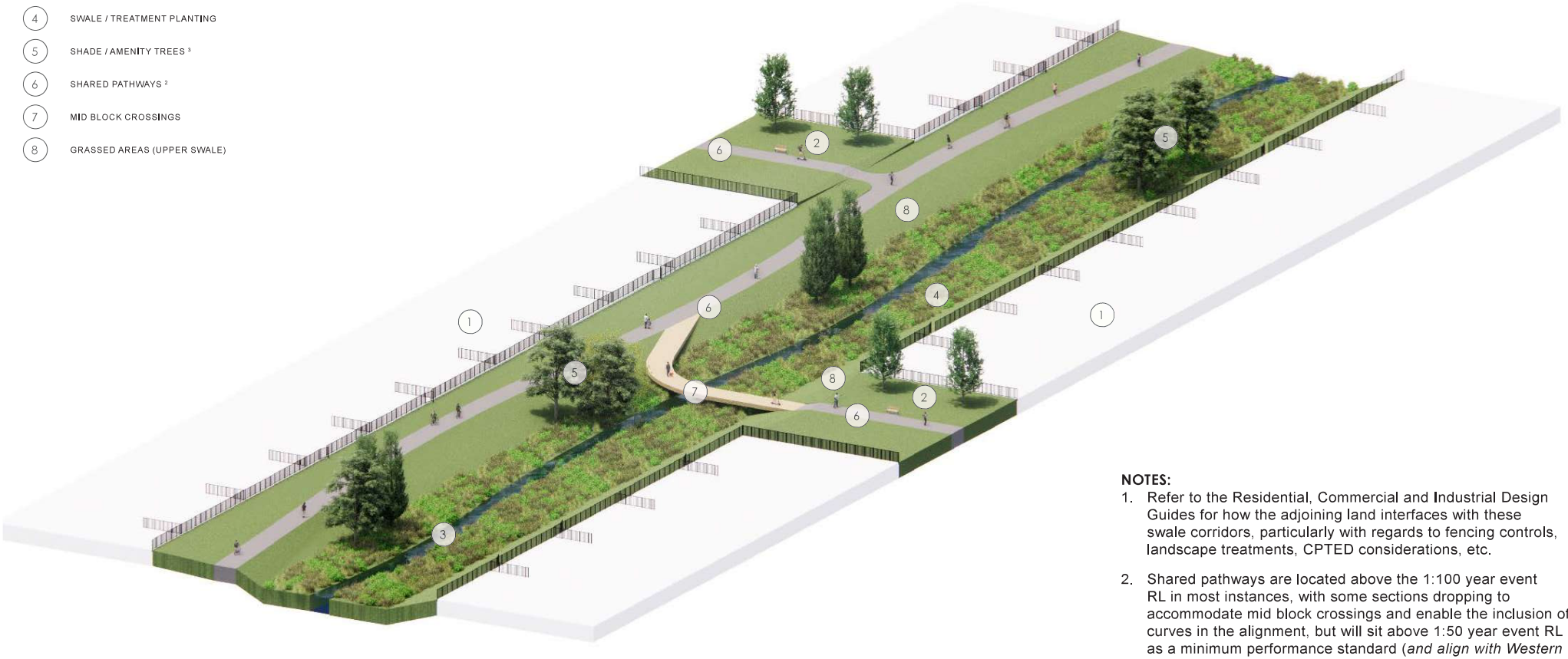
2.4.9 STORMWATER SWALE PLANTING

3D VISUAL OF SWALE CORRIDOR (SWALE S4 & S5)

This profile illustrates how the swales function as an integrated asset for the development. Accommodating stormwater runoff, treatment, biodiversity, amenity, open space and shared pathway network. Swales S4 & S5 are 38.5m wide.

KEY

1. RESIDENTIAL LOTS [1]
2. GREEN LINK CONNECTIONS
3. SWALE BASE WITH LOWFLOW CHANNEL
4. SWALE / TREATMENT PLANTING
5. SHADE / AMENITY TREES [3]
6. SHARED PATHWAYS [2]
7. MID BLOCK CROSSINGS
8. GRASSED AREAS (UPPER SWALE)



NOTES:

1. Refer to the Residential, Commercial and Industrial Design Guides for how the adjoining land interfaces with these swale corridors, particularly with regards to fencing controls, landscape treatments, CPTED considerations, etc.
2. Shared pathways are located above the 1:100 year event RL in most instances, with some sections dropping to accommodate mid block crossings and enable the inclusion of curves in the alignment, but will sit above 1:50 year event RL as a minimum performance standard (*and align with Western Bay of Plenty District Council's Development Code*)
3. Trees located within the swale floor are to have clear main stems for the bottom 0.5m at time of install and are to be of species that maintain a clear stem for the bottom 1m once mature to ensure stormwater can flow around them cleanly.

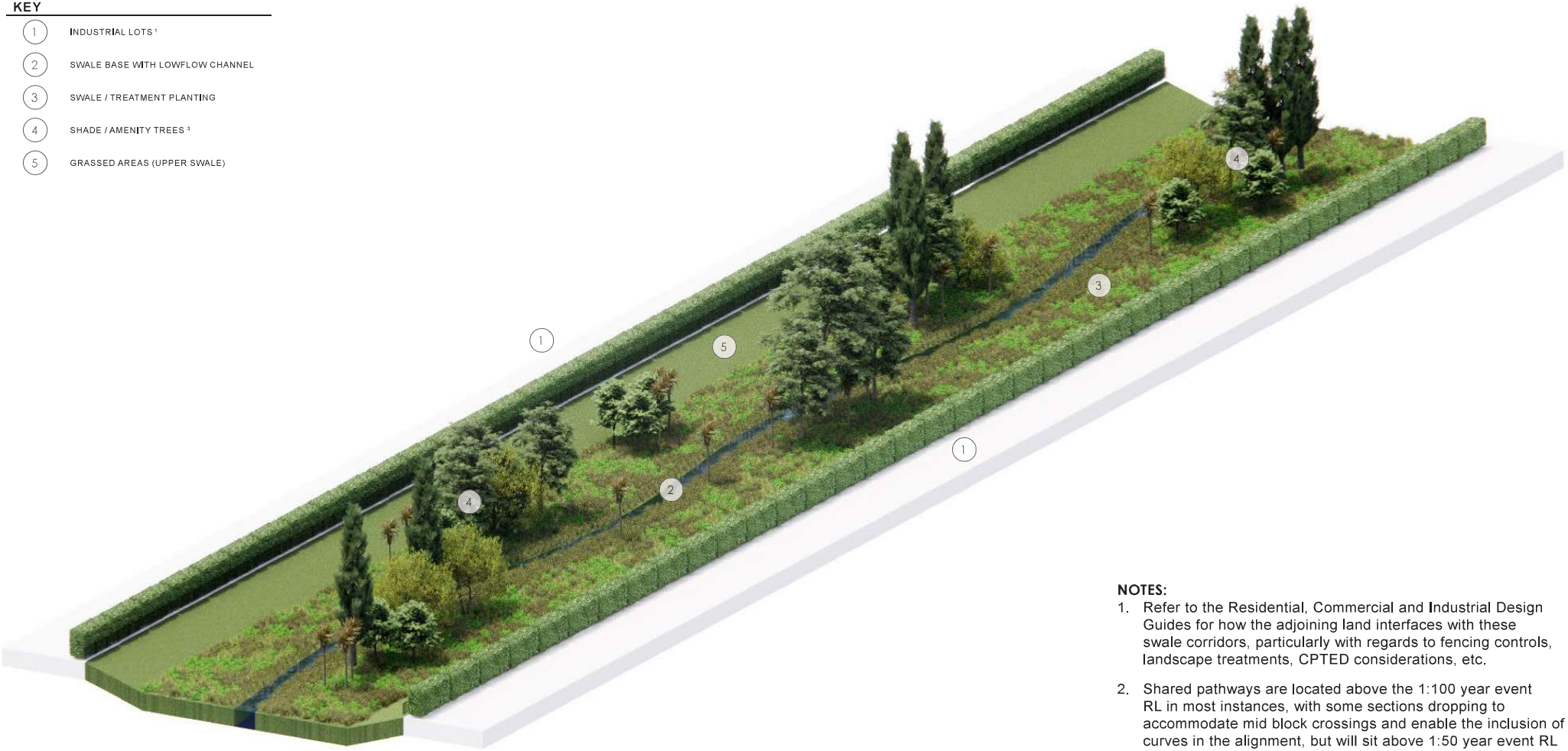
2.4.10 STORMWATER SWALE PLANTING

3D VISUAL OF SWALE CORRIDOR (SWALE S6)

This profile illustrates how the swales function as an integrated asset for the development. Accommodating stormwater runoff, treatment, biodiversity, amenity, open space and shared pathway network. Swale S6 is 38.5m wide)

KEY

1. INDUSTRIAL LOTS [1]
2. SWALE BASE WITH LOWFLOW CHANNEL
3. SWALE / TREATMENT PLANTING
4. SHADE / AMENITY TREES [3]
5. GRASSED AREAS (UPPER SWALE)



NOTES:

1. Refer to the Residential, Commercial and Industrial Design Guides for how the adjoining land interfaces with these swale corridors, particularly with regards to fencing controls, landscape treatments, CPTED considerations, etc.
2. Shared pathways are located above the 1:100 year event RL in most instances, with some sections dropping to accommodate mid block crossings and enable the inclusion of curves in the alignment, but will sit above 1:50 year event RL as a minimum performance standard (*and align with Western Bay of Plenty District Council's Development Code*).
3. Trees located within the swale floor are to have clear main stems for the bottom 0.5m at time of install and are to be of species that maintain a clear stem for the bottom 1m once mature to ensure stormwater can flow around them cleanly.

2.5 STORMWATER MANAGEMENT AREA PLANTING

PLANTING STRATEGY

Wairakei South has two large stormwater attenuation areas that manage runoff coming from the development and the wider catchment upstream of the site. The primary stormwater treatment for the development is achieved through the vegetated stormwater conveyance swales, therefore the two wetland areas are not needed to service this function, but they are still needed for attenuation capacity during larger rain events.

Due to their low-lying nature of the ground levels which is required to maximise storage volume, they are not suitable for secondary recreation functions such as open space, sports fields, etc. Instead, these management areas support wider ecological and cultural outcomes, improves the water quality (in addition to the treatment swales), increases resilience and provides a high level of amenity to the development.

All management areas are to be planted with native species that specialise in these environments and are proven to successfully treat stormwater runoff. All other areas which are out of the regular floodable areas will mostly be grassed, providing open space for passive recreation opportunities (where suitable to do so).

Clusters and individual specimen trees will be scattered throughout the wetland to provide scale, shade, amenity, and attract birds into the area. Most trees are to be native species, with some larger stature, faster growing exotics proposed for the corridors on the edges of the development area to support the landscape visual mitigation requirements.

Where possible all native plant species will be sourced from the local suppliers with seed sourced within the local ecological district to ensure good establishment and extension of natural habitat.

PLANTING PALETTES

The below is a list of proposed trees shrubs and groundcover plants that are suitable to be used in the stormwater management areas. Final selections are to be confirmed at Engineering Approval stage and subject to further engagement with Iwi, and council review.

RIPARIAN

- Aristotelia serrata / Makomako
- Austroderia fulvida / Toetoe
- Carex maorica / Maori Sedge
- Carex secta / Purei
- Carex testacea / Sepckled Sedge
- Coprosma repens / Mirror Plant
- Coprosma robusta / Karamu
- Dianella nigra / Turutu
- Dodonaea viscosa / Akeake
- Kunzea robusta / Kanuka
- Leptospermum scoparium / Manuka
- Muehlenbeckia complexa / Small Leaved Pohuehue
- Phormium tenax / Harakeke
- Veronica stricta / Koromiko

TREES

- Agathis australis / Kauri
- Alectryon excelsus / Titoki
- Coprosma lucida / Karamu
- Cordyline australis / Tī Kōuka
- Dacrycarpus dacrydioides / Kahikatea
- Knightia excelsa / Rewarewa
- Myoporum laetum / Ngaio
- Myrsine australis / Mapou
- Plagianthus regius / Ribbonwood
- Podocarpus totara / Totara
- Prumnopitys ferruginea / Miro
- Prumnopitys taxifolia / Matai
- Sophora microphylla / Kowhai
- Syzygium maire / Maire Tawaki
- Vitex lucens / Puriri

WETLAND

- Apodasmia similis / Oioi
- Astelia grandis
- Austroderia fulvida / Toetoe
- Austroderia toetoe / Toetoe
- Carex Geminata / Rautahi
- Carex Lessoniana / Cutty Grass
- Carex Maorica / NZ Sedge
- Carex virgata / Swamp Sedge
- Coprosma propinqua / Mingimingi
- Coprosma tenuicaulis / Hukihuki, Swamp Coprosma
- Coprosma tenuifolia / Wavy-Leaved Coprosma
- Cyperus ustulatus / Giant Umbrella Sedge
- Eleocharis acuta / Sharp Spike Sedge
- Elocharis sphacelata / Bammboo Spike Sedge
- Juncus australis / Leafless Rush
- Juncus edgariae / Edgar's Rush
- Juncus pallidus / Giant Rush
- Machaerina articulata / Jointed Twig Rush
- Machaerina juncea / Bare Twig-Rush
- Machaerina tenax
- Phormium tenax / Harakeke
- Phormium tenax ‘purpureum’
- Veronica stricta / Koromiko

2.5.1 NORTHERN STORMWATER MANAGEMENT AREA

The northern stormwater management area, positioned near the main entrance of the development, is envisioned as a sculptural landscape feature that creates an immediate sense of identity and arrival.

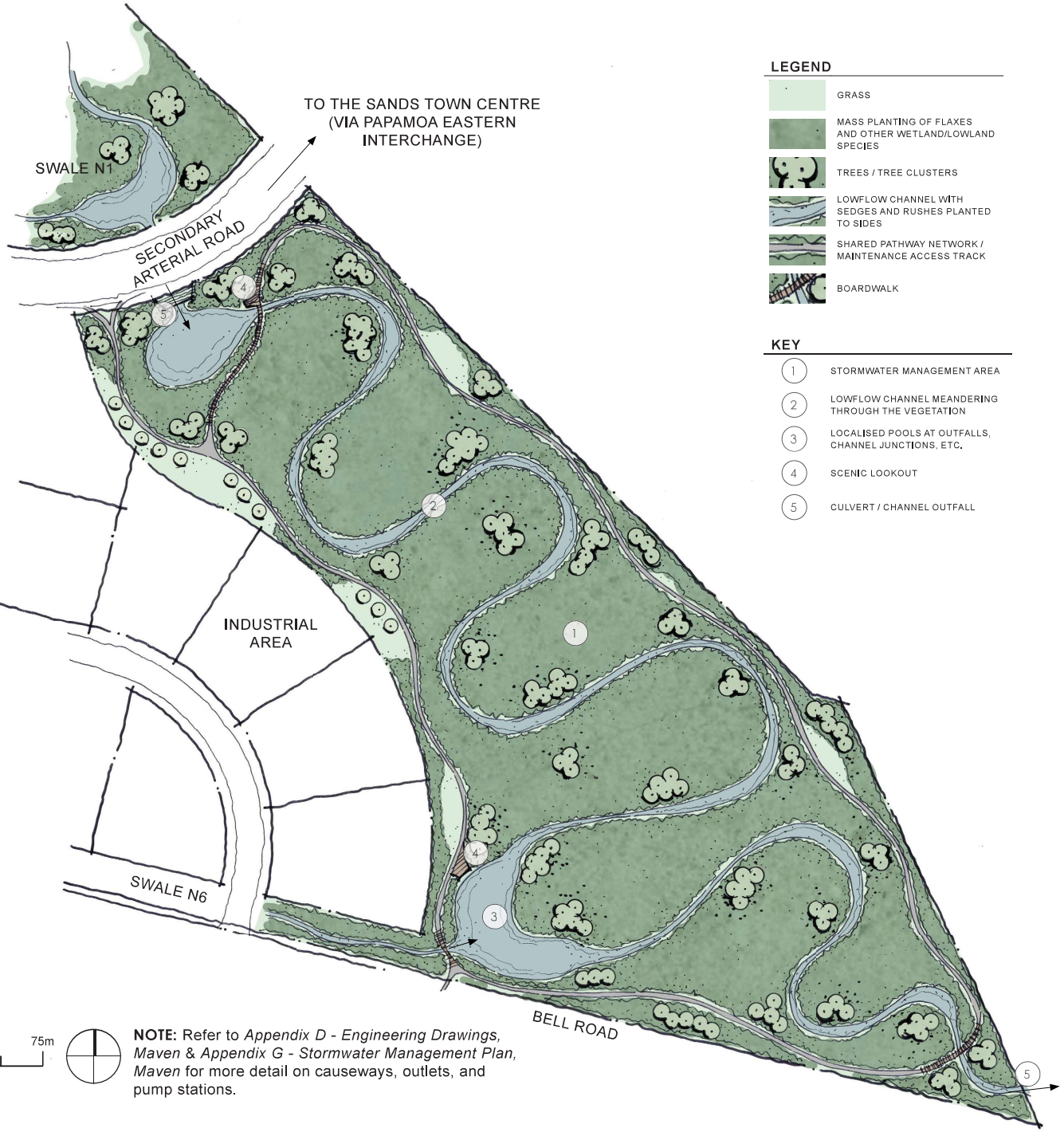
This expressive environment is shaped by meandering low-flow channels that weave through a mosaic of densely planted wetland habitats, forming a dynamic and visually engaging foreground to the development.

Planting palettes are intentionally curated, using deliberate species selections to introduce form, rhythm, and architectural structure. Tree clusters would also be present across the site.

Around the wmanagement area, an access track and shared-use pathway form a continuous movement corridor that supports multimodal travel, fitness loops, and passive recreational experiences.

Overall, this area becomes a bold, sculptural entrance experience setting the tone for a development supporting wider ecological and cultural outcomes and improving the water quality, resilience and amenity of the development.

Final design is subject to further collaboration and inputs from local iwi, Western Bay of Plenty District Council and the developer.



NOTE: Refer to *Appendix D - Engineering Drawings, Maven* & *Appendix G - Stormwater Management Plan, Maven* for more detail on causeways, outlets, and pump stations.

2.5.2 SOUTHERN STORMWATER MANAGEMENT AREA

The southern stormwater management area, positioned between the development and surrounding rural landscape offers a large-scale regenerative ecosystem that incorporates low flow channels with pools through expansive wetland and lowland vegetation, including clusters of native trees to maximise ecological and hydrological performance.

All low-flow channels connect and lead to the engineered outlet situation in the southeastern corner where water levels are controlled and flows run back into the Kopuaroa Canal and out to the Kaituna River.

Raised recreation areas adjacent to the surrounding residential lots and green link local purpose reserves ensure strong connectivity to the reserve and offer flexible space for informal play, rest areas, community gathering, and expansive views over the reserve out to the Papamoa Ranges.

A connected pathway network runs around and through the immersive natural environment. Offering residents and visitors with a series of contrasting experiences from shaded groves to open water views and close ecological encounters. This pathway seconds as a maintenance access track to support ongoing management of the area.

Final design is subject to further collaboration and inputs from local iwi, Western Bay of Plenty District Council and the developer.

NOTE: Refer to *Appendix D - Engineering Drawings, Maven* & *Appendix G - Stormwater Management Plan, Maven* for more detail on causeways, outlets, and pump stations.

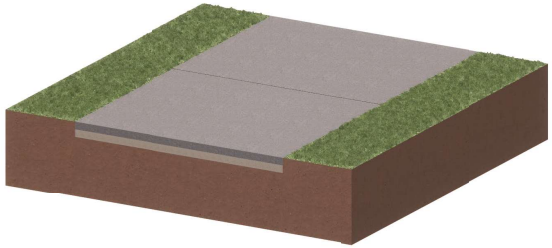
Boffa Miskell

3.0 PATHWAY TREATMENTS + FURNITURE PALETTES

3.1 PATHWAY TREATMENTS

The shared pathway network within Wairakei South has three distinct treatments proposed for the shared pathway network. These differ on the location, environmental requirements and anticipated use. Further detail is provided in the below 3D visuals and example imagery.

SHARED PATHWAY NETWORK - STREETSCAPE

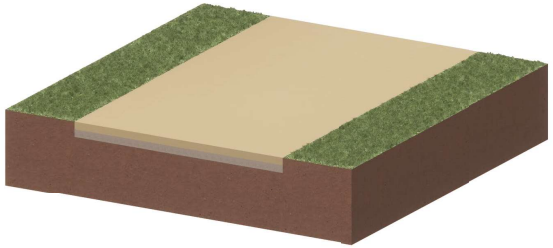


Typical Widths: 2.5 - 3.0m wide

Material: Concrete with 4% (half) black oxide (colour TBC)

Treatments: Sandblasted patterns for directional indication, identifying it as a shared pathway. Potential for cultural expression / gateway threshold treatments (subject to engagement with Iwi)

SHARED PATHWAY NETWORK - STORMWATER RESERVES



Typical Widths: 3.0m wide

Material: PAP6 / Hoggin over compacted basecourse

Other: To be located above 1:50 year rain event RL at a minimum, preferably above 1:100 year rain event if able to.

SWALE CHANNEL CROSSINGS - STORMWATER RESERVES

Typical Widths: 3.0-3.5m wide

Material: Timber structure

Treatments: Kick rails where boardwalk RL is less than 0.9m above ground level, reverting to balustrades where surface RL is more than 1m. Opportunity for artistic inputs to balustrade to provide added cultural expression

3.2 FURNITURE PALETTES

The following palettes are proposed for the public realm spaces within the Wairakei South Development.

STREETSCAPE / COMMERCIAL HUB FURNITURE PALETTE

METRO SINGLE & DOUBLE SEATS

Supplier: Streetscape NZ

Material: HDG Steel / Hardwood

Treatments: 2 pot epoxy painted (black or similar colour - TBC)

METRO SINGLE BENCH

Supplier: Streetscape NZ

Material: HDG Steel / Hardwood

Treatments: 2 pot epoxy painted (black or similar colour - TBC)

RIVA BENCH SEAT

Supplier: Streetscape NZ

Material: HDG Steel / Hardwood

Treatments: 2 pot epoxy painted (black or similar colour - TBC)

TRIUMPH BIKE RACK

Supplier: Streetscape NZ

Material: Stainless or HDG Steel

Treatments: Polished stainless steel or 2 pot epoxy painted (black or similar colour - TBC)

PAN SINGLE OR TWIN WASTE BIN

Supplier: Streetscape NZ

Material: HDG Steel / Hardwood

Treatments: 2 pot epoxy painted (black or similar colour - TBC)

RESERVE NETWORK FURNITURE PALETTE

NOMAD PICNIC SET

Supplier: Streetscape NZ

Material: HDG Steel / Hardwood

Treatments: 2 pot epoxy painted (black or similar colour - TBC)

RIVA SEAT

Supplier: Streetscape NZ

Material: HDG Steel / Hardwood

Treatments: 2 pot epoxy painted (black or similar colour - TBC)

RIVA BENCH SEAT

Supplier: Streetscape NZ

Material: HDG Steel / Hardwood

Treatments: 2 pot epoxy painted (black or similar colour - TBC)

TRIUMPH BIKE RACK

Supplier: Streetscape NZ

Material: Stainless or HDG Steel

Treatments: Polished stainless steel or 2 pot epoxy painted (black or similar colour - TBC)

PAN SINGLE OR TWIN WASTE BIN

Supplier: Streetscape NZ

Material: HDG Steel / Hardwood

Treatments: 2 pot epoxy painted (black or similar colour - TBC)

DRINKING FOUNTAIN

ACC CBD ACCESSIBLE FOUNTAIN

Supplier: Streetscape NZ

Material: Stainless

Additions: Water bottle filler and dog bowl base (TBC)

STREET LIGHTING COLUMN PALETTE

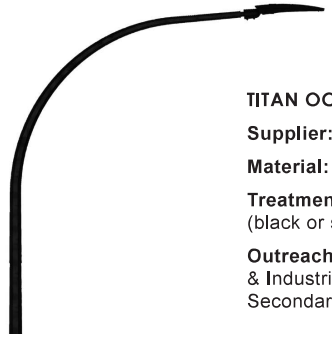
KINGSTON COLUMN

Supplier: ibex

Material: HDG Steel

Treatments: 2 pot epoxy painted (black or similar colour - TBC)

Outreach: Single 1m arm to all Residential Roads



TITAN OCTAGON COLUMN

Supplier: ibex

Material: HDG Steel

Treatments: 2 pot epoxy painted (black or similar colour - TBC)

Outreach: Single for Collector & Industrial Roads / Double for Secondary Arterial

Boffa Miskell

4.0 NEIGHBOURHOOD RESERVES

4.1 DESIGN PROVISIONS - RESERVES, OPEN SPACE & COMMUNITY FACILITIES

Referenced from *Council's objectives and policies and Recreation Aotearoa Parks Categories Framework,* other industry best practice guidance, wider spatial planning context and the anticipated population of Wairakei South the below table outlines the required open spaces and community facilities to be provided within the development (excluding stormwater management reserves).

Note: *Reserve design provisions, level of service and performance outcomes have been workshopped with and supported by Western Bay of Plenty District Council*

Refer to Appendix C - Masterplan, Boffa Miskell for more detail on reserve classifications, policy and objectives used to inform design outcomes proposed for Wairakei South.

TYPE	INDICATIVE SIZE	QUANTITY	LOCATION	ASSESSED REQUIREMENTS
Active Reserve	<8ha	N/A	N/A	Not required as existing provisions present at Gordon Spratt Reserve in Papamoa, those in Te Puke and the future provision for new Active Reserves proposed in Te Tumu
Neighbourhood Reserves **(Local Reserve)**	3.3ha *(cumulative total)*	Approx. 8x reserves (total) 1x reserve to be approx. 1-1.5ha in size and act as Major Neighbourhood Reserve Remaining reserves to be approx. nominal size of 2,500m2 per reserve	Spread throughout development area (Max 400m walking radius accessible to most residents) Major Neighbourhood Reserve to be located centrally within development to allow for the best accessibility to majority of residents within a 1.5km walking radius	Include Local Reserve LOS Major Neighbourhood reserve to have high quality playground & public toilets – should be co-located adjacent neighbourhood centre Remaining reserves to have varied LOS with different play spaces, open space, shade trees, pathways, etc. Consideration of physical barriers to the 400m accessibility to be taken into account when planning number and location of neighbourhood reserves e.g. roads, stormwater reserves, etc.
Local Area Open Space	12ha *(cumulative total - incl. Neighbourhood Reserves)*	Spread throughout the development area Includes neighbourhood reserves	Spread throughout development (within 2km walking radius accessible to most residents)	Network of different reserve types including: stormwater conveyance, treatment wetlands, walkway Strips, etc. spread across the development. Total based on LOS requiring 1.7ha/1,000 people with anticipated population of 7,200 (2.4 people per household x 3,000 homes)
Major Neighbourhood Playspace	Footprint approx. 500m2	1	Located within the Major Neighbourhood Reserve	Careful consideration to providing play opportunities and equipment for a range of ages and abilities
Walkways and Cycleways	N/A	N/A	Located throughout the development area, within road and stream reserve corridors, reserves, etc. Include connections to wider networks outside the development area, i.e. Papamoa, Te Ara o Wairakei, Tauranga Eastern Link, etc.	Consideration of shared path design criteria depending on anticipated volume of use for specific road corridors. Shared pathway network to be spread throughout stormwater reserve network and link into neighbourhood reserves, school and other key community facilities.
Public Toilets	N/A	1	Located within the Major Neighbourhood Reserve	Size and level of service to meet the requirements for anticipated usage and population
Event Infrastructure	N/A	N/A	All Neighbourhood Reserves	Power and water connections to all Neighbourhood Reserves.
Basketball 3x3 Court	N/A	1	To be provided for somewhere in the reserve network within development. Ideally would be located within the Major Neighbourhood Reserve	Court to meet FIBA standards, court size to be 13x17m (11x13m playing area with runout zones) Consideration of location with regards to accessibility, CPTED/visibility, etc.
Signage, Wayfinding, Cultural Recognition & Interpretation	N/A	N/A	Opportunities to be located throughout the entire reserve network within development	To align with Council's Wayfinding and Signage Strategy and working closely with mana whenua

OTHER COMMUNITY FACILITIES:

Primary School	3.5 - 4ha (*preferred approx. size*)	1	Located on the PT loop and collector road, relatively flat land given design requirements of school	Whilst under the responsibility and ownership of MOE, school's are important community facilities so are included in the consideration as part of the wider reserve network within the development
Secondary School	N/A	N/A	N/A	Not required as existing provisions present in Papamoa, Te Puke and the future provision for new secondary school proposed in Te Tumu
Neighbourhood Centre	1.4ha	1	Located on the primary roading network, PT loop, and multi modal network and accessible to a majority of residents.	Direct connection to the wider reserve network is recommended.

4.2 NEIGHBOURHOOD RESERVES

PRIMARY RESERVE LOCATIONS

(A) – (G) NEIGHBOURHOOD RESERVES

Neighbourhood Reserves are for the local community. They provide areas for passive recreation e.g., play, walking, biking, gathering and informal sports, and in some cases, spaces for small community events.

Approx 2,500m2 in size and placed throughout the development so all residents have at least one neighbourhood reserve within a five minute / 400m walking radius.

(1) MAJOR NEIGHBOURHOOD RESERVE

Major Neighbourhood Reserves offer a more significant recreation offering than a Neighbourhood Reserve, which may have complementary active recreation opportunities (e .g. basketball court, skate and/or bike facilities), caters to a broad range of ages and abilities, incorporates larger scale multi-age suitable play space, nature play elements, and provided toilets, shade/shelter, drinking fountains.

Approx 1.2-1.5ha in size and placed centrally in the development, to ensure a large portion of residents are within a ten minute / 800m walking radius.

(2) PRIMARY SCHOOL

While not owned and managed by council, publicly run primary schools provide open space and play amenities that can still typically be utilised by the community.

Approx 3.5-4ha in size and placed centrally in the development, to ensure a large portion of residents are within a ten minute / 800m walking radius and it is accessible from the shared pathway network in the swale corridors.

LEGEND

- SITE BOUNDARY
- RESIDENTIAL (MDRZ) ZONE
- EMPLOYMENT (INDUSTRIAL)
- SERV. SERVICE CENTRE (COMMERCIAL)
- NEIGHBOURHOOD & LOCAL CENTRES (COMMERCIAL)
- PRIMARY SCHOOL
- STORMWATER RESERVE
- NEIGHBOURHOOD RESERVES / GREEN LINKS / STORMWATER CONNECTIONS

4.3 MAJOR NEIGHBOURHOOD RESERVE

PERFORMANCE OUTCOMES, FEATURES AND ELEMENTS

RESERVE TYPE - MAJOR NEIGHBOURHOOD RESERVES:

MAJOR NEIGHBOURHOOD RESERVES OUTCOMES

Required for Neighbourhood Reserves:

Purpose:

Neighbourhood Reserves are "local" reserves that are provided for and developed primarily to serve a localized area and surrounding residential community. They are predominantly used for passive and informal active recreation such as play, walking, dog walking, cycling, relaxation, socialisation, and informal sports like "backyard cricket".

They will be movement "hubs", to facilitate people connecting to/from other open space and community facility areas within the development.

Neighbourhood Reserves also provide open space amenity and visual attractiveness in urban built environments. Due to their number and dispersed location across the suburb, they are key places where the identity (cultural, heritage, ecological and landscape) of the Keenan Road Urban Development Area can be recognised and celebrated.

Users will likely include people of all ages, individuals, groups, and families. They will include those who live nearby and those from across the suburb who are using the walking and cycling network, or accessing other nearby reserves or facilities, specific to each neighbourhood reserve location.

Landform/Orientation:

- *Have good solar access*

Visibility and Legibility:

- *Passive Surveillance*

Access and Connectivity:

- *Are located in a prominent position that connects to public transport routes, primary shared pathway network, and green corridors.*
- *Located centrally that captures all the development area and southern end of The Lakes Development.*

MAJOR NEIGHBOURHOOD RESERVES - FEATURES AND ELEMENTS

Additional to the generic reserve features and elements, the following features and elements are required for Neighbourhood Reserves:

Landform/Orientation:

- *Good northern aspect is desirable*
- *Largely flat, mowable areas to provide for play and passive recreation, with opportunity for undulating landform to accommodate design features*
- *Use landform changes to create variety of spaces and uses*
- *Undertake earthworks to provide for recreational areas and access (appropriately graded accesses to promote universal access and maximise use)*

Proportion:

- *Shape to be square - rectangular in form*
- *Avoid narrow elongated spaces, to provide functional spaces*

Visibility and Legibility:

- *Focal point of the local area*
- *Passive surveillance provided by avoidance of solid fences from private properties, low planting and tall clear stemmed tree planting only.*
- *A minimum 50% reserve frontage to street and/or public realm*

Well-being and Safety:

- *Area of uncluttered open space (somewhere to kick a ball or play backyard cricket)*

Public Use and Participation:

Major Neighbourhood Reserves to include:

- *Major Neighbourhood Play Space scale of play equipment (ages 0 to 10 years)*
- *3x3 Basketball half court*
- *Walkways/cycleways*
- *Shade, particularly over play areas (natural or artificial)*
- *Furniture - seats, picnic tables, rubbish bins, bike stands*
- *Public toilet block*
- *Infrastructure for small scale, local community events (power and water connections)*

Ecology and Vegetation:

- *Each reserve - minimum of 10 large trees (45L at time of planting) with a canopy of >5m radius each (at maturity), plus multiple small and medium sized trees and low vegetation for amenity and biodiversity*

Adaptability and Choice

- *Create spaces that are adaptable for different uses at different times of the day/year, and that can be used for new uses in the future*

4.3.1 MAJOR NEIGHBOURHOOD RESERVE

DESIGN CONSIDERATIONS

SITE PROGRAMMING (GENERALISED DESIGN RESPONSE)

DESIGN APPROACH

The future concept design must respond to the reserve's intended programming, use, and function. Centrally located within the development, the reserve is directly connected to the neighbourhood centre (commercial area) and the adjacent swale corridor and shared pathway network.

The reserve is intended to serve the wider community as the primary open space and destination play area, offering a range of facilities that support extended stays and diverse user needs. These include a destination playground, basketball half-court, public toilets, BBQs, shade trees, and amenities for both passive and informal active recreation.

The design must accommodate high levels of use and simultaneous activities, including large-scale community events, recreation spaces, amenity areas, and facilities that support relaxation, whānau, and community gatherings, while integrating large trees and neighbourhood play space requirements.

The reserve design will be developed collaboratively by Western bay of Plenty District Council and the Developer closer to delivery to ensure inclusivity, alignment with community needs, and agreement on investment and outcomes.

4.4 NEIGHBOURHOOD RESERVES

PERFORMANCE OUTCOMES, FEATURES AND ELEMENTS

RESERVE TYPE - NEIGHBOURHOOD RESERVES:

NEIGHBOURHOOD RESERVES OUTCOMES

Required for Neighbourhood Reserves:

Purpose:

Neighbourhood Reserves are "local" reserves that are provided for and developed primarily to serve a localized area and surrounding residential community. They are predominantly used for passive and informal active recreation such as play, walking, dog walking, cycling, relaxation, socialisation, and informal sports like "backyard cricket".

They will be movement "hubs", to facilitate people connecting to/from other open space and community facility areas within the development.

Neighbourhood Reserves also provide open space amenity and visual attractiveness in urban built environments. Due to their number and dispersed location across the suburb, they are key places where the identity (cultural, heritage, ecological and landscape) of the Keenan Road Urban Development Area can be recognised and celebrated.

Users will likely include people of all ages, individuals, groups, and families. They will include those who live nearby and those from across the suburb who are using the walking and cycling network, or accessing other nearby reserves or facilities, specific to each neighbourhood reserve location.

Landform/Orientation:

- *Have good solar access*

Visibility and Legibility:

- *Passive Surveillance*

Access and Connectivity:

- *Are located in a prominent position that relates strongly to surrounding area, good access and visibility.*

NEIGHBOURHOOD RESERVES - FEATURES AND ELEMENTS

Additional to the generic reserve features and elements, the following features and elements are required for Neighbourhood Reserves:

Landform/Orientation:

- *Good northern aspect is desirable*
- *Largely flat, mowable areas to provide for play and passive recreation, with opportunity for undulating landform to accommodate design features*
- *Use landform changes to create variety of spaces and uses*
- *Undertake earthworks to provide for recreational areas and access (appropriately graded accesses to promote universal access and maximise use)*

Proportion:

- *Shape close to being of equal length and width*
- *Avoid narrow elongated spaces, to provide functional spaces*

Visibility and Legibility:

- *Focal point of the local area*
- *Passive surveillance provided by avoidance of solid fences from private properties, low planting and tall clear stemmed tree planting only.*
- *Aim for minimum 50% reserve frontage to street and/or public realm*

Well-being and Safety*:*

- *Area of uncluttered open space (somewhere to kick a ball or play backyard cricket)*

Public Use and Participation:

All Neighbourhood Reserves to include:

- *Local Neighbourhood Play Space scale of play equipment (ages 0 to 10 years)*
- *Connected to walkways and cycleways*
- *Shade, particularly over play areas (natural or artificial)*
- *Furniture - seats, picnic tables, rubbish bins, bike stands*
- *Infrastructure for small scale, local community events (power and water connections)*

Ecology and Vegetation:

- *Each reserve - minimum of 5 large trees (45L at time of planting) with a canopy of >5m radius each (at maturity), plus multiple small and medium sized trees and low vegetation for amenity and biodiversity*

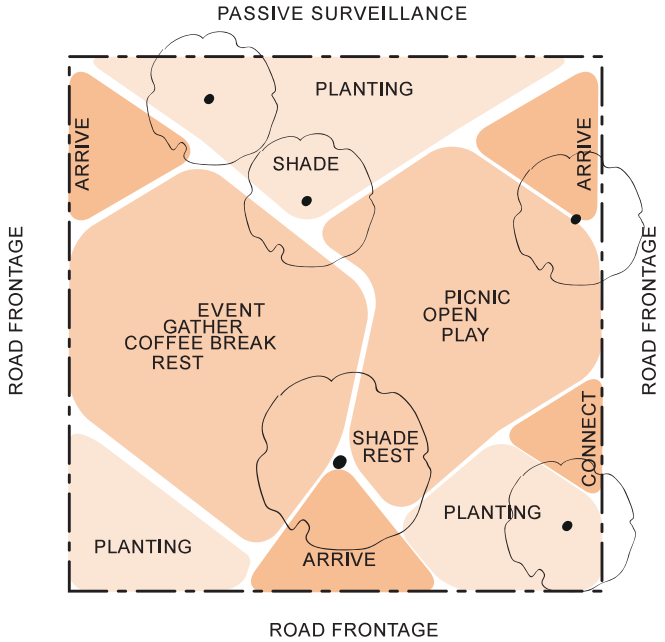
Adaptability and Choice

- *Create spaces that are adaptable for different uses at different times of the day/year, and that can be used for new uses in the future*

4.4.1 NEIGHBOURHOOD RESERVES (A-E)

DESIGN CONSIDERATIONS

SITE PROGRAMMING (GENERALISED DESIGN RESPONSE)



DESIGN APPROACH

The future concept design must respond to the reserve's intended programming, use, and function. Neighbourhood Reserves A-E will provide residents with a key function of providing local open space and amenity close to their communities.

Its primary purpose is to support passive and informal active recreation for individuals, small and larger groups. Its secondary purposes are to integrate the connections of a wider walking and cycling network depending on location.

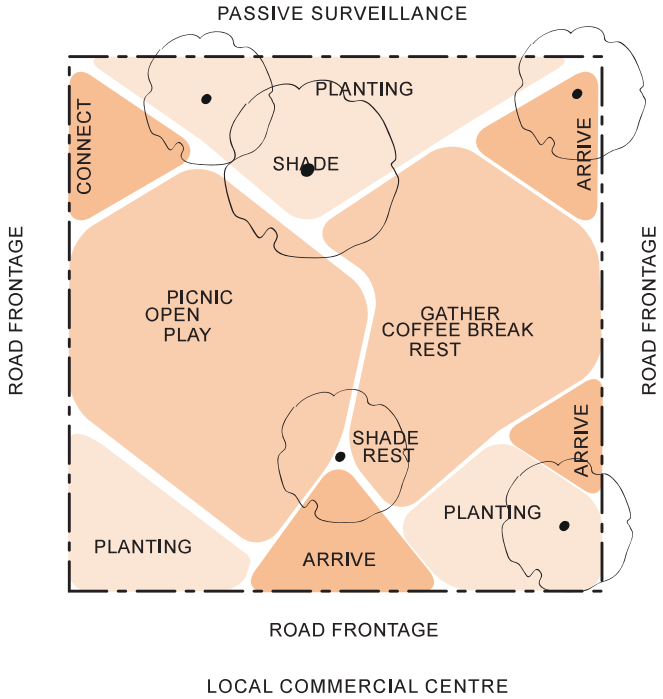
Users will include people of all ages, individuals and families, walkers and cyclists. Users will include those who live nearby for whom this will be their local reserve, as well as users from across the suburb who will be passing through the walking and cycling network. It must therefore accommodate a variety of uses: rest and relaxation, play, picnicking, informal active recreation and small community events.

The reserve design will be developed collaboratively by Western bay of Plenty District Council and the Developer closer to delivery to ensure inclusivity, alignment with community needs, and agreement on investment and outcomes.

4.4.2 NEIGHBOURHOOD RESERVE (F)

DESIGN CONSIDERATIONS

SITE PROGRAMMING (GENERALISED DESIGN RESPONSE)



DESIGN APPROACH

The future concept design must respond to the reserve's intended programming, use, and function. Neighbourhood Reserve F will provide residents with a key function of providing local open space and amenity close to their communities.

Its primary purpose is to support passive and informal active recreation for individuals, small and larger groups. Its secondary purposes are to integrate the connections of a wider walking and cycling network. Proposed to be located near to the southern local centre, this reserve will also function to support users of the commercial area.

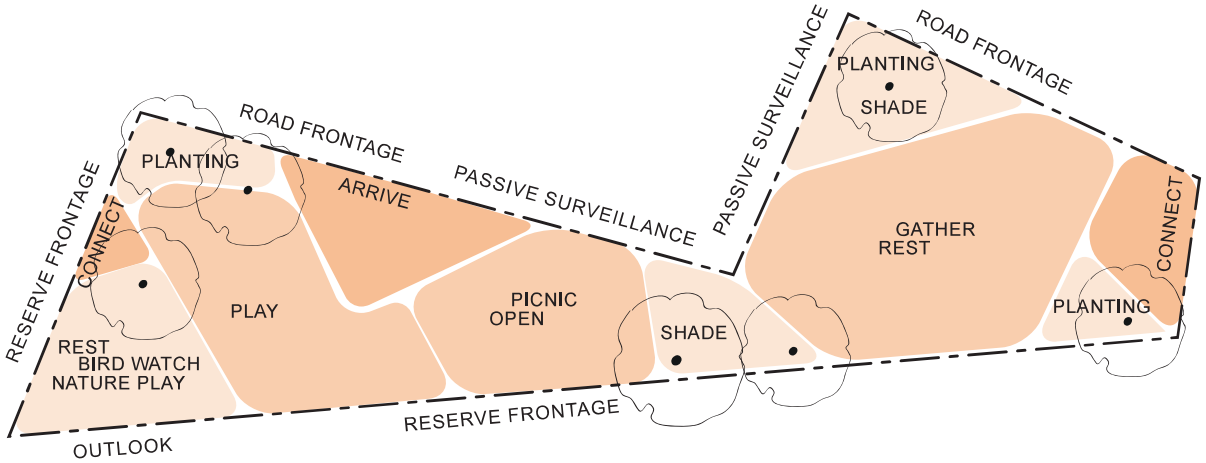
Users will include people of all ages, individuals and families, walkers and cyclists. Users will include those who live nearby for whom this will be their local reserve, as well as users from across the suburb who will be passing through the walking and cycling network, or visiting the proposed commercial area. It must therefore accommodate a variety of uses: rest and relaxation, play, picnicking, informal active recreation and small community events.

The reserve design will be developed collaboratively by Western bay of Plenty District Council and the Developer closer to delivery to ensure inclusivity, alignment with community needs, and agreement on investment and outcomes.

4.4.3 NEIGHBOURHOOD RESERVE (G)

DESIGN CONSIDERATIONS

SITE PROGRAMMING (GENERALISED DESIGN RESPONSE)



DESIGN APPROACH

The future concept design must respond to the reserve's intended programming, use, and function. Neighbourhood Reserve G will provide residents with a key function of providing local open space and amenity close to their communities.

Being elevated through landform improvements and located adjacent the large stormwater treatment and attenuation wetland, the reserve provides expansive views south towards the Papamoa Range and functions as a local access hub to the stormwater swale and wetland pathway network.

Its primary purpose is to support passive and informal active recreation for individuals, small and larger groups. Its secondary purposes are to integrate the connections of a wider walking and cycling network.

Users will include people of all ages, individuals and families, walkers and cyclists. Users will include those who live nearby for whom this will be their local reserve, as well as users from across the suburb who will be passing through the walking and cycling network, or visiting the wetland habitat, walking dogs or utilising the large amount of open space. It must therefore accommodate a variety of uses: rest and relaxation, play, picnicking, informal active recreation and small community events.

The reserve design will be developed collaboratively by Western bay of Plenty District Council and the Developer closer to delivery to ensure inclusivity, alignment with community needs, and agreement on investment and outcomes.

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.

www.boffamiskell.co.nz

Whangarei	Auckland	Hamilton	Tauranga	Wellington	Nelson	Christchurch	Queenstown	Dunedin
09 358 2526	09 358 2526	07 960 0006	07 571 5511	04 385 9315	03 548 8551	03 366 8891	03 441 1670	03 470 0460