Bell Road Limited Partnership

APPLICATION FOR RESOURCE CONSENTS UNDER THE FAST TRACK APPROVAL ACT 2024 – ASSESSMENT OF ENVIRONMENTAL EFFECTS

TO: Environmental Protection Authority
CLIENT: Bell Road Limited Partnership
REFERENCE: 2000-AMC-010-Bell Road-1-Rev F
12 May 2026

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1. INTRODUCTION

1.1. SUMMARY

This Assessment of Environmental Effects (**AEE**) report has been prepared in support of all necessary consents and approvals for the Wairakei South development (referred to as "Wairakei South" or "the proposed Development") by Bell Road Limited Partnership (referred to as "Bell Rd Limited Partnership" or "the applicant"). Wairakei South is located across 349.2 hectares (ha) of contiguous land. The proposal is a natural extension of, and integration to, the existing Wairakei Urban Growth Area in the Bay of Plenty and has been developed to meet the sub-region's current insufficiency of land supply.

Identified as a key growth area, the proposed Development is an opportunity to accommodate a mix of residential, commercial, and industrial activities in response to regional population and employment demands. The masterplan provides a structured approach to urban development that balances growth with environmental responsibility, cultural integration, and long-term resilience.

Cultural narratives and ecological restoration are embedded throughout the design, reflecting a commitment to partnership with Mana Whenua and the protection of natural systems. Located adjacent to the Tauranga Eastern Link, SH2 (**TEL**), the site benefits from strategic transport connections that enhance regional accessibility and support integrated land use and infrastructure planning.

The applicant proposes a stormwater and landform solution for the site which is supported by sound technical engineering analysis.

The Development will provide much needed housing and business land in the sub-region and assist with resolving the current shortages in that regard identified by local authorities.

This report sets out the matters that are required to be addressed in the fast-track substantive application, as set out in sections 29, 30, 42, 43, 13, Schedule 5 – clauses 5 – 8 and Schedule 8 – clause 2 of the Fast Track Approvals Act 2024 (**FTAA**).

1.2. PROJECT OVERVIEW

Wairakei South is a listed project under the FTAA in 2024, The listed site area was recently amended under the Fast-track Approvals (Wairakei South and Other Projects) Amendment Order 2026 (see Appendix A).

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 349.2 ha within the high-growth Eastern Corridor between Pāpāmoa, Te Tumu, and Te Puke, Wairakei South is ideally positioned to become a vibrant, integrated and connected mixed-use community. It will deliver 2,729 new homes, 50 hectares of industrial / employment land, 4 hectares of commercial centres and approximately 140 hectares of integrated stormwater swales, reseserves and treatment wetlands over the next 15–20 years.

As Tauranga City and the Western Bay of Plenty District experience rapid and sustained population growth projected to reach between 246,100 and 317,500 over the next 30 years, the Western Bay of Plenty sub-region is under increasing pressure to meet the requirements of the National Policy Statement on Urban Development (**NPS-UD**), including providing a minimum 10-years of supply of housing. Wairakei South represents a critical near-term solution to ease urban pressure and support sustainable sub-regional growth.

Located adjacent to the TEL, Wairakei South offers connectivity to Tauranga, Mount Maunganui, Te Puke, the Port of Tauranga, and major employment hubs like Rangiuru Business Park. This connectivity, combined with a balanced land-use approach, positions Wairakei South as a self-sustaining, future-ready community that supports the sub-region's live, work, and play aspirations.

1.2.1. Strategic Importance

Wairakei South represents a timely and strategic response to the acute housing and business land shortages faced by the Tauranga City and Western Bay of Plenty Districts in the Western Bay of Plenty sub-region. As illustrated in Figure 1 below from SmartGrowth Strategy[1] 2024, both Districts are projected to face significant cumulative housing shortfalls over the next three decades:

	short	medium	long	**Total**
Housing Demand	4,630	11,490	20,570	**36,690**
Housing Demand incl margin	5,550	13,780	23,660	**42,990**

	Short term	Medium term	Long term	**Total**
Infill/ Intensification	700	3,000	8,760	**12,460**
Rural, Lifestyle, Small Settlement	240	230	30	**500**
Greenfield Urban Growth Area	3,210	7,780	11,860	**22,850**
Total	**4,150**	**11,010**	**20,650**	**35,810**

	Short term	Medium term	Long term	**Total**
Supply-Demand	-480	-480	90	**-870**
Supply-Demand incl. Margin	-1,400	-2,780	-3,000	**-7,180**

Figure 1: SmartGrowth HBA 2022 Western Bay of Plenty Sub-Region Housing Sufficiency Summary – NZIER Existing Housing Shortfall Included (*Source: SmartGrowth 2022 HBA*)

Wairakei South is not only a solution to the sub-region's immediate housing and business land needs, but also a long-term enabler of smart, sustainable urban growth. It aligns with the SmartGrowth Strategy 2024 outcomes for urban growth, responds directly to national urban policy requirements, and represents a proactive response to critical supply shortfalls.

The Development strengthens the resilience, liveability, and economic potential of the Eastern Corridor and the wider Bay of Plenty.

[1] The SmartGrowth Strategy 2024–2074 is a 50-year spatial planning framework for the western Bay of Plenty, NZ, focusing on managing high growth through sustainable, integrated land use and infrastructure. It fosters connected, resilient communities (15-minute neighbourhoods), higher density housing, and environmental protection, partnering with local councils and tāngata whenua

1.2.2. Key Features and Benefits

There are numerous benefits as to why Wairakei South is strategically important to meeting the housing and business / industrial land shortfall within the Western Bay of Plenty District and wider sub-region:

- Housing Supply Relief

With a significant regional housing shortfall, Wairakei South contributes 2,729 new homes, significantly alleviating short term pressure in one of New Zealand's fastest-growing regions.

- Business & Industrial Land Provision

The SmartGrowth Strategy confirms the need for 300–400 hectares of additional greenfield industrial land over the next 30 years. Wairakei South delivers 54 hectares of business and industrial land, supporting projected employment growth, and the 32% increase needed[2] for the Eastern Corridor.

- Strategic Location and Connectivity

Direct access to the TEL ensures fast, efficient transport connections to Tauranga, Mount Maunganui, Te Puke, and the Port of Tauranga, enhancing accessibility, availability and close access to services and infrastructure.

- Integrated, Mixed-Use Zoning

A well-balanced mix of residential, commercial, and industrial land ensures that Wairakei South functions as a complete, connected community. Local job opportunities, recreational amenities, and public services will be integrated into the development, reducing reliance on external commuting and strengthening social cohesion. The applicant has worked through an iterative master planning process for the site.

- Stormwater Solution

The proposal incorporates a modern and fully integrated stormwater solution, addressing treatment, conveyance and storm resilience.

- Cultural Reconnection

The applicant has worked collaboratively with Mana Whenua and Tangata Whenua to assist in the connection to their whenua (land) and provide opportunities for wider involvement with the project and elements within it.

- Ecological Enhancement

The proposal results in the creation of positive on-site ecological benefits with the development of substantial stormwater treatment wetlands and corridors to manage flood water and improve water quality, natural habitat and ecosystems.

[2] SmartGrowth Strategy Eastern Corridor Growth Estimates, SmartGrowth Strategy 2024-274

- Privately Funded Delivery

  As a privately led initiative, Wairakei South offers the potential for faster mobilisation and reduced pressure on public funding, with infrastructure delivery aligned to long-term strategic goals.

- Contribution to GDP

  The project has a supporting net additional construction sector GDP contribution of $1,121 million, and results in 8,430 full-time equivalent (**FTE**) jobs. Wairakei South enables ongoing population growth, leading to significant net additional GDP contribution and employment, of $66.3 million and 585 FTE jobs every year.

  The project has a supporting retail sector GDP contribution of $29.0 million and 298 FTE jobs annually.

1.3. REGULATORY FRAMEWORK & FAST-TRACK PROCESS

Wairakei South has been endorsed by the New Zealand Government as a listed project under Schedule 2 of the Fast Track Approvals Act 2024 (**FTAA**).

The FTAA's stated purpose 'is to facilitate the delivery of infrastructure and development projects with significant regional or national benefits.' The Act has been specifically created for the purpose of fast tracking the delivery of large-scale projects and it is considered that Wairakei South, with the benefits described in Section 1.2.2 above, is consistent with the purpose of the FTAA.

Section 5(1) of the FTAA defines ineligible activities. The proposal does not include any ineligible activities, as it does not include activities:

- On identified Māori land.
- In a customary marine title area.
- In a protected customary rights area.
- On Māori customary land.
- On land set apart as a Māori reservation.
- Involving aquaculture activities or activities incompatible with aquaculture activities.
- That would require an access arrangement under section 61 or 61B of the Crown Minerals Act 1991.
- Prevented under sections 165J, 165M, 165Q, 165ZC, or 165ZDB of the Resource Management Act 1991.
- Proposed on land listed in Schedule 4 of the FTAA or land not subject to a determination under section 24.

- On a reserve held under the Reserves Act 1977 that is vested in someone other than the Crown or a local authority or managed by someone other than the Department of Conservation or a local authority.
- That are a prohibited activity under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 or regulations made under that Act.
- That is described in section 15B of the Resource Management Act 1991 and is a prohibited activity under that Act or regulations made under it.
- That are a decommissioning-related activity.
- Undertaken for the purposes of an offshore renewable energy project.

A summary of the approvals and consents sought is provided in section 4.4 and in Appendix AC.

Overall, the project requires consent as a non-complying activity.

In accordance with Section 43(2) (C) of the FTAA, the substantive application is for the same project in the same location as listed. A copy of the Fast Track Approvals (Wairakei South and Other Projects Amendment Order 2006) and the original application to be included in the Act as a Listed Project is included in Appendix A.

2. APPLICANT, APPLICATION SITE & PLANNING INFORMATION

2.1. APPLICANT & PROJECT TEAM

The applicant for is Bell Road Limited Partnership (**BRLP**), a joint venture between Bluehaven Group and Zariba Holdings.

The following consultants have contributed technical assessments to this proposal:

- Maven: Surveying, Civil Engineering including Earthworks, Stormwater, Wastewater and Water Supply, Utilities and Roading Design, and preparation of draft management plans. Maven have also assisted with the consultation process.
- Collier Consultants: Planning.
- Boffa Miskell: Transport, Urban Design, Landscape Assessment, Master-planning, and Landscape Design.
- Engeo: Geotechnical, Hydrogeological, Contaminated Land, Natural Hazards ssessments.
- AgFirst: Highly Productive Land Assessments.
- Archaeology BOP: Archaeology Assessments.
- Ecological Solutions: Ecology, Environmental Management, Stormwater Monitoring, pecies Management.
- Hegley Acoustic Consultants: Acoustic Assessments.
- Nyawi Sustainability Consulting: Climate Change and ustainability.
- Urban Economics: Economic ssessment and Property Research.
- Awa: Peer Review - Stormwater Engineering.
- Beca: Transport Modelling.
- Flow Transportation: Peer Review – Transportation.

2.1.1. Applicant Capability

BRLP was established in 2021.

- Bluehaven Group (**Bluehaven**) commenced development activity in 1993, and Zariba Holdings (**Zariba**) has been operating in the property sector since 1986, providing over 70 years of combined development experience.
- Both Bluehaven and Zariba are NZ-owned, operate out of Tauranga, Bay of Plenty and are heavily involved within the Bay of Plenty property sector.
- Both Bluehaven and Zariba have proven capability with large scale residential project delivery and have developed collectively over 5,600 residential units in Tauranga alone,

predominantly in the Pāpāmoa area. This amount of past residential delivery is twice the level of the proposed Wairakei South residential.

- Both Bluehaven and Zariba have also delivered multiple commercial and mixed-use developments including town and suburban centres, office buildings and medical centres throughout Tauranga.
- BRLP is a single ownership model that is committed to active development and not land-banking.
- Both Bluehaven and Zariba have also been involved in property development in other NZ cities and regions including Hamilton, Waikato, Taupo, Auckland, Christchurch and Wellington.
- In addition to the entities of Bluehaven and Zariba, their current Board members and management teams have extensive development and project experience.
- This experience includes a number of large-scale developments involving residential, retail, commercial, industrial, energy and horticulture projects, many of which are of national prominence.
- Website references below:
  - www.bluehavengroup.co.nz
  - www.zariba.co.nz

2.1.2. Project Funding

BRLP is well resourced to undertake the Development of Wairakei South.

- Initial funding will be in the form of equity and debt provided by Bluehaven and Zariba and their senior debt banking partners.
- BRLP has already canvassed appetite for this specific project with our senior bank lenders and they have indicated a very positive willingness to participate.
- The development land has been secured through various agreements, including land for a source site of earthworks fill.
- The funding of bulk infrastructure is planning to focus on private development agreements (**PDA**) with local Council, along with your typical development contributions framework (where applicable). This bulk infrastructure involves components of 3 waters (water, wastewater and stormwater) and transport elements.
- The intention is for the PDA to be complemented by the Regional and Strategic Deals Framework involving Central Government partnership with local Councils to fund large scale critical infrastructure to unlock much needed housing supply. Wairakei South has been identified as a priority development area through this process.
- Wairakei South is also projected to produce strong commercial returns for BRLP over time, whereby necessary future capital is recycled back into the development.

- BRLP also remain open minded about other joint ventures parties to participate in BRLP.

2.2. APPLICATION SITE

The land subject to this application (site) comprises 349.2 ha legally described in Table 1 below.

Table 1: Legal Descriptions of site

ADDRESS	RECORD OF TITLE	APPELLATION	AREA (HA)
Bell Road *	SA64B/396	Lot 2 DPS 81677 & Lot 1 DPS 54113	24.323
285 Bell Road, Pāpāmoa	SA64B/395	Lot 1 DPS 81677	2.694
Bell Road, Papamoa *	624307	Lot 1 DPS 69524 & Section 26 SO 427562	21.4595
285A Bell Road, Pāpāmoa	SA55D/202	Lot 2 DPS 69524	0.9815
311 Bell Road, Pāpāmoa *	893643	Lot 1 DP 537375	15.2909
	893644	Lot 2 DP 537375	3.5277
339 Bell Road, Pāpāmoa	687138	Section 1 SO 457222	4.179
Bell Road, Papamoa *	606872	Section 13 SO 458365	59.9413
Bell Road, Papamoa *	605743	Section 12 SO 458365	1.7884
250, 252 Bell Road, Pāpāmoa	SA7A/206	Part Lot 1 DP 29530	113.7622
314D Bell Road, Pāpāmoa	960662	Lot 2 DP 553506	99.1095
314 Bell Road, Pāpāmoa	960661	Lot 1 DP 553506	2.0626
Total			**349.2**

** sites owned by Bell Road Limited Partnership (the applicant)*

The Records of Title (see Appendix B) includes the titles of relevant landowners and occupiers as required by Schedule 5, clause 5(1)(d) of the Act.

The Applicant owns (or has contracted to purchase) the land subject to this application. There is accordingly no impediment to the Applicant's ability to undertake the proposed work on this land.

2.3. SITE LOCATION & CONTEXT

2.3.1. Site Location

The site is immediately south of State Highway 2 (SH2)/TEL, and the existing Wairakei Urban Growth Area to the North ('The Sands' development). The site is currently accessible directly off Bell Road, with a future link to SH2 becoming available via the Pāpāmoa East Interchange (**PEI**). The site's location in relation to the wider Tauranga City / WBOP Subregion is illustrated in Figure 2 below.

Figure 2: Wairakei South site location within the Tauranga / WBOP sub-region (Source: Boffa Miskell Masterplan)

The site is bound by the TEL to the north and east of the site, and the Kopuaroa Canal at the southern boundary. The site is shown on Figure 3 below.

Figure 3: Site Location plan (Source: Boffa Miskell Masterplan)

The land to the north of Bell Road is referred to in this application as 'The North Block' and the land to the south of Bell Road is referred to as the 'South Block'.

2.3.2. Site Description

The site is largely flat and low lying, with a very gentle slope to the east. The site is grazing land in pasture and is presently grazed by stock and seasonally is used for maize cropping. Farm drains, scattered trees and hedges, farm-houses and farm utility buildings are present on the land. Photos of the site showing its context are in Figure 4 and Figure 5 below.

Figure 4: Oblique Aerial Photography looking south (Source: Bluehaven 2021)

Figure 5: Oblique Aerial Photography looking north (Source: Bluehaven 2021).

The site sits within the Kaituna Coastal Plains landscape unit, a low-lying area characterised by flat topography, expansive rural landholdings, and wider proximity to significant ecological and cultural features. The site's context within the Kaituna Coastal Plains is shown in Figure 6 below. While the existing landscape is of relatively low visual quality due to its predominantly pastoral use and lack of

structural vegetation, the landscape presents substantial opportunities for ecological restoration, cultural placemaking, and integrated infrastructure design.

The typical ground elevation across the property ranges between approximately 0.5 - 2 metres RL (NZVD), with only subtle variations across the site.

Figure 6: Site Context Photos – representative views across the Wairakei South site and surrounds (Urban Design Assessment, Appendix J)

Te Kapu o Waitaha (**Waitaha**) maintain enduring whakapapa, historical, and cultural connections to this rohe. Waitaha hold mana whenua status within the Wairākei South area through whakapapa, ahi kā, and the ongoing exercise of kaitiakitanga. For Waitaha, Wairākei South is not an isolated development site, but part of a wider interconnected cultural system. The area sits within a network of:

- Surface waterways and groundwater systems.
- Geothermal and subsurface processes.
- Traditional travel routes and settlement areas.
- Sites of cultural and spiritual significance.
- Catchment-scale environmental relationships.

Waitaha recognise that these systems extend beyond visible boundaries and cadastral lines. As a result, the effects of development may occur cumulatively and at distances removed from the immediate project footprint.

2.4. PLANNING INFORMATION

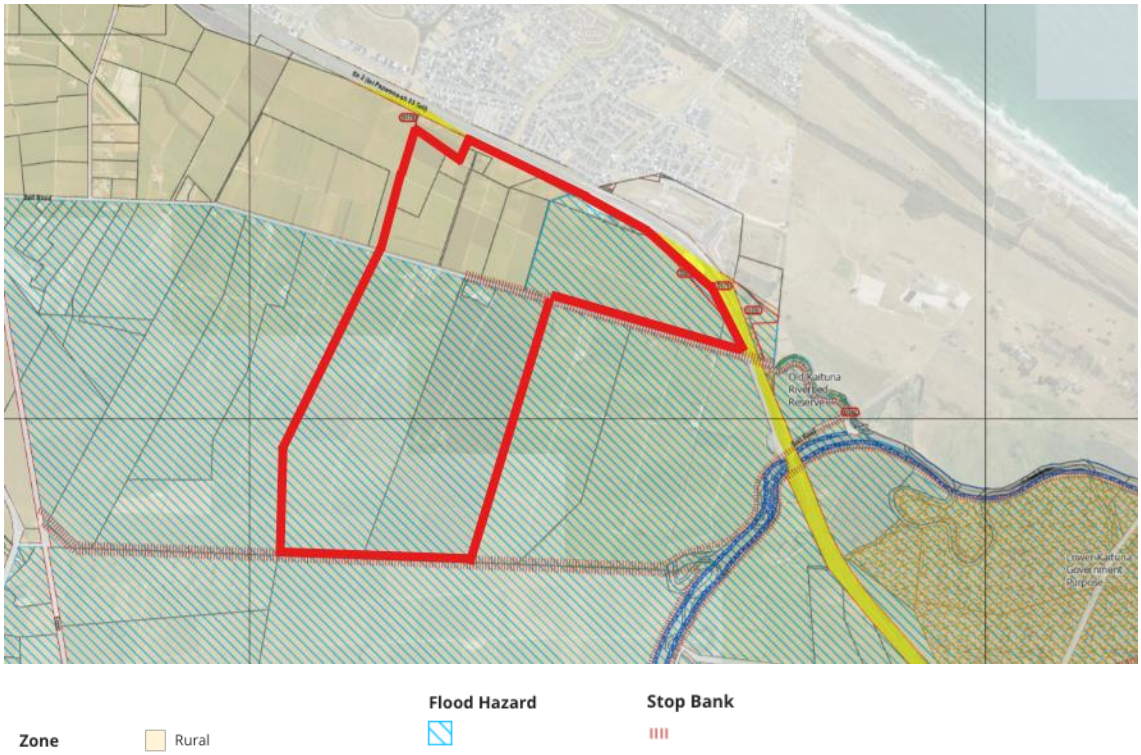
2.4.1. Western Bay of Plenty District Plan

The relevant planning information for the site is provided in Table 2 below.

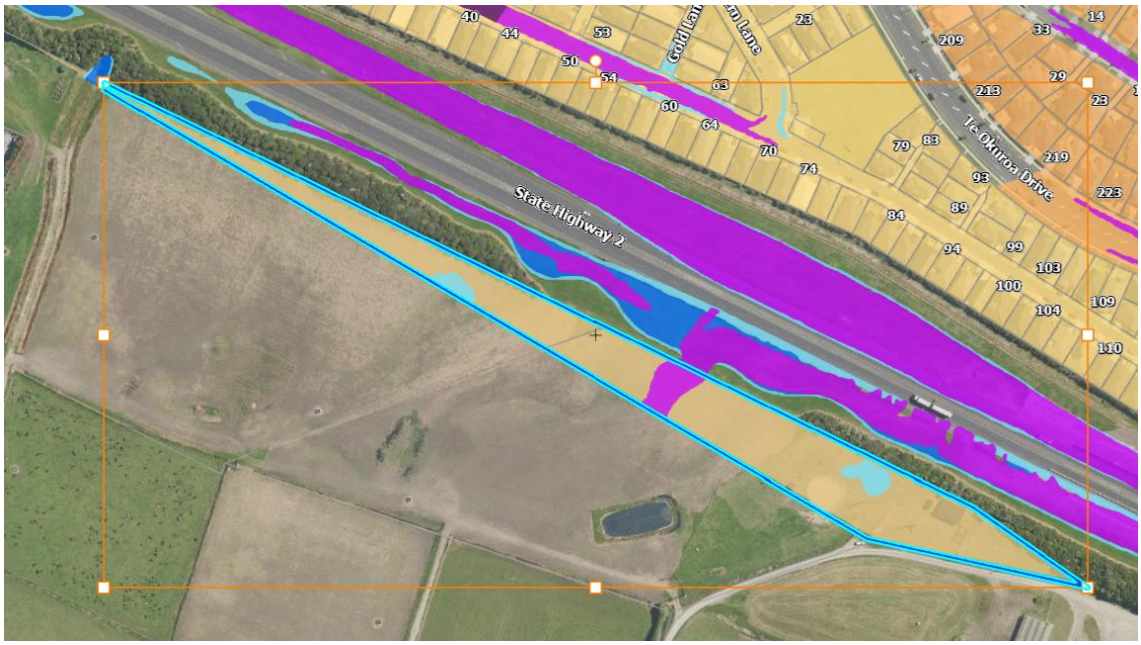
Table 2: Planning Information

PLANNING INFORMATION	STATUS
Sourced from the Western Bay of Plenty District Plan	
Zone	Rural
Overlays	• Flood Hazard: covers the majority of the site as shown on Figure 7 below. • Stop Bank: Bell Road Drain and Kopuaroa Canal have stop bank overlays within the site area, as shown on Figure 7 below.
Designations	• D179: Waka Kotahi NZ Transport Agency; Road purposes – State Highway relocation (Tauranga Eastern Link); Between Domain Road, Papamoa & State Highway 2 / State Highway 33 Intersection • D235: Tauranga City Council; Papamoa East Interchange (Tauranga Eastern Link); Lots 1, 2,and 3 DPS 65215, Pt. Sec 1 DP 10096
Sourced from the Tauranga City Plan	
Zone	Rural
Overlays	• Flooding from rainfall events: 2 small ponding areas a secondary overland flowpath are identified on the land

A small area of the site fronting State Highway 2, as shown on the Tauranga City Council (**TCC**) planning map in Figure 7 below, contains a TCC zoning (rural). The land appears to be in titles which are located within the Western Bay of Plenty District and are rated within the Western Bay of Plenty District. The TCC rural zoning over this land appears to have been an anomaly associated with the severance of land by the TEL. For completeness, an assessment of the relevant plan provisions has also been completed for the TCC Plan (Appendix AC). Correspondence was received from Western Bay of Plenty District Council (**WBOPDC**) relating to the location of the Western Bay of Plenty District boundary with TCC along the northern boundary of the application's site and along site the TEL (Appendix AB). The WBOPDC's view was that there remains a portion of the site within WBOPDC but that carries no WBOPDC zoning. On this basis, consideration has been given to the TCC's zoning of the land.



Western Bay of Plenty District Plan - Planning Map



Tauranga City Plan - Planning map

Figure 7: Planning Maps

The wider boundary between the Western Bay of Plenty District and Tauranga City runs along the southern side of SH2 and the Kaituna River. Key features of the TCC City Plan zoning to the north of the site are shown on Figure 8 below. They include the Te Tumu future urban area to the north-east of the site and the Wairakei Town Centre (**The Sands**) and associated zones directly to the north of the PEI.

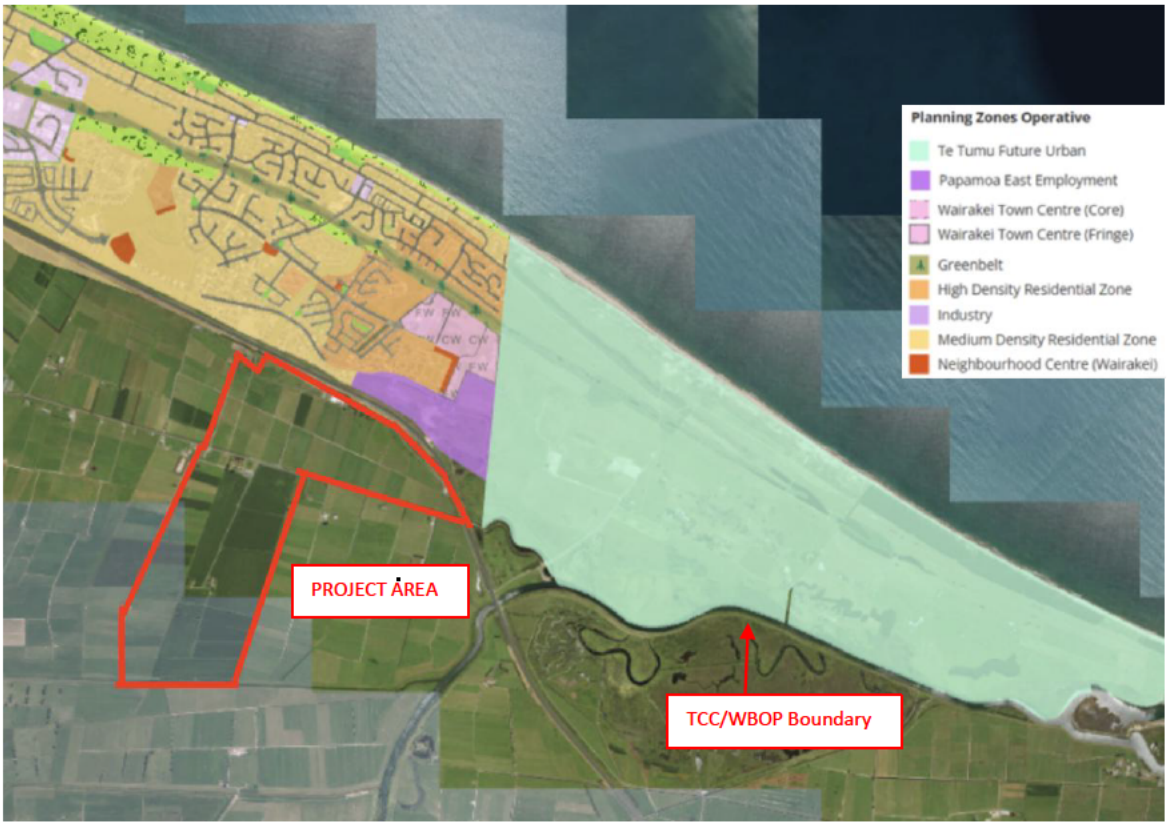


Figure 8: Wider Zoning Context (Map Base Source: TCC Mapi system)

2.4.2. Bay of Plenty Regional Council

The relevant planning information for the Bay of Plenty Regional Council (**BOPRC**) is provided below.

Table 3: Bay of Plenty Regional Natural Resources Plan

PLANNING MATTER	STATUS
Schedule 1: Aquatic Ecosystem Areas	Kaituna River & Kapuaroa Canal
Schedule 3: Watercourses in Land Drainage Schemes with Ecological Values	Kopuaroa Canal
Schedule 5: Maintenance Areas of River Schemes and Land Drainage Schemes	Lower Kaituna Maintenance Area
Schedule 9: Water Quality Classification Standards and Criteria	• Bell Road Drain: Drain Water • Kopuaroa Canal: Modified Watercourse with Ecological Values • Kaituna River: Contact Recreation

Mapping of relevant environmental matters can be found in BOPRC's Bay Explorer mapping system and are summarised in Table 4 below.

Table 4: Bay of Plenty Regional Council Mapping

ENVIRONMENTAL MATTER	STATUS
HAIL Sites	Two areas of the applicant site are included on the Hazardous Activities and Industries (HAIL) list.
Co-governance	Te Maru o Kaituna River Authority is a co-governance partnership mandated to restore, protect and enhance the environmental, cultural and spiritual health and well-being of the Kaituna River.
Catchments	Kaituna Pāpāmoa & Kaituna Kopuaroa
Rivers and Drainage Management	Kaituna Catchment Control Scheme
Land Use	Dairy (and small areas of arable and lifestyle / mixed-use)
Land Cover	High producing exotic grassland (and small areas of short rotation cropland, low producing grassland, exotic forest and herbaceous freshwater vegetation)
Soils	Raparopahoe silt loam, parton fine sandy loam, silt loam
Wetlands	Kaituna Wetlands form part of the downstream receiving environment.

The waterways within and adjacent to the site are covered by a Flood Protection and Drainage Bylaws, and a separate Bylaw Authority may be required for the proposed works outside of the FTAA process. These are shown in Figure 9 below.

Figure 9: Waterways covered by the BOPRC Flood Protection and Drainage Bylaw (BayExplorer)

2.4.2.1. Existing Consents

Through consultation with the Regional Council the following existing BOPRC consents have been granted in respect of properties which are part of the Wairakei South site:

- Section 26 SO 427562 bore consent RM17-0701 (dairy/domestic)
- Lot 2 DPS 69524 – bore consent RM17-0701 (dairy/domestic)
- Part Lot 1 DP 29530 – RM23-0089 (EW for dairy platform), RM19-0665 (dairy discharge), PA25-00239 (permitted water take for dairy)

None of the above are considered to be for the same activity in terms of s.40 of the FTAA.

2.4.3. Statutory Acknowledgement Areas

The following Statutory Acknowledgement Areas are relevant to the site:

Table 5: Bay of Plenty Regional Natural Resources Plan

STATUTORY ACKNOWLEDGEMENT	LOCATION & COMMENT
Ngati Rangiwewehi	Kaituna River  Under Section 34 of the Ngāti Rangiwewehi Claims Settlement Act 2014, the Crown acknowledges the statement by Ngāti Rangiwewehi of association with Kaituna River.

STATUTORY ACKNOWLEDGEMENT	LOCATION & COMMENT
Tapuika	Kaituna River  Under section 33 of the Tapuika Claims Settlement Act 2014, the Crown acknowledges the statement by Tapuika of their particular cultural, spiritual, historical, and traditional association of Tapuika with the Parts of Mangorewa River, Kaituna River, Te Rerenga Stream and Whataroa Stream.
Te Kapu o Waitaha	Kopuaroa Canal and Kaituna River  Under section 26 of the Waitaha Claims Settlement Act 2012, the Crown acknowledges the statement by Te Kapu o Waitaha of their particular cultural, spiritual, historical, and traditional association of Waitaha with Part of the Kaituna River and with Te Kopuaroa River.

2.5. HIGHLY PRODUCTIVE LAND

The site's soils have been mapped by AgFirst (see the NPS-HPL Assessment included as Appendix T and Figure 10 below) and are classified under the New Zealand Land Resource Inventory (**NZLRI**) as Land Use Capability (LUC) 2w2, which corresponds to Highly Productive Land (**HPL**). Based on the NZLRI, 346.05 ha of the 349.12 ha of Wairakei South is HPL (LUC 2) with the remaining 33.61 ha being assessed as non-productive. Therefore, the project has been assessed against the National Policy Statement – Highly Productive Land (**NPS-HPL**), which is about ensuring the availability of New Zealand's most favourable soils for food and fibre production.

Figure 10: NZLRI Land Use Capability Classification Map for the Site (Source: NPS-HPL Report Appendix T)

2.6. TRANSPORT ENVIRONMENT

The site is located directly south of TEL Corridor and is divided into North Block and South Block as Bell Road, a local, sealed public road that bisects the distinct areas of the site. Numerous farm roads and tracks convey farming traffic through the site.

The TEL/SH2 forms the primary transport corridor in the vicinity of the site. It is managed by Waka Kotahi NZ Transport Agency (**NZTA**). The wider road and rail network is shown in Figure 11 below.

In the WBOPDC road hierarchy (Section 4B.4.1), SH2 and the TEL (where they are in the jurisdiction) are classified as a Primary Arterial and a Motorway, respectively. The site currently has access via Bell Road which is a local road.

Further information on the current transport environment is provided in the Integrated Transport Assessment at Appendix I.

Figure 11: Road, Rail & Cycleway Networks (Source: Masterplan, Appendix C)

2.6.1. Existing Traffic Volumes

Average daily traffic volumes on roads around the site have been sourced from the MobileRoad website and are summarised in Table 6 below.

Table 6: Average Daily Traffic Volumes (Source: Appendix I)

ROAD	SECTION	ADT (vpd)	% HCV
Bell Road	Between Parton Road and TEL	350	6.0%
	Between Te Puke Highway and TEL	3,500	5.4%
Te Puke Highway	North of Bell Road	14,400	7.0%
	South of Bell Road	15,900	3.5%
Parton Road	North of Bell Road	3,800	3%
TEL (SH2)	Between Parton Road and Kaituna River Bridge	5,714 eastbound (EB) 5,778 westbound (WB)	13% EB 18% WB

It is acknowledged that the area around the development is experiencing ongoing growth and that traffic volumes on the surrounding road network are forecast to increase over time. The volumes presented above provide a snapshot of existing conditions based on the most recent available counts.

2.6.2. Future Transport Environment

2.6.2.1. Urban Form & Transport Initiative

The Urban Form and Transport Initiative (**UFTI**), completed in 2020, was a partnership between SmartGrowth, Central Government, Tangata Whenua, and local Councils. Notably, UFTI envisages a transport corridor between Te Puke and Wairakei which would pass through Wairakei South. The three dotted lines (yellow, black and purple) indicate planned connections for public transport, cycling and road transport as shown on Figure 12 below.

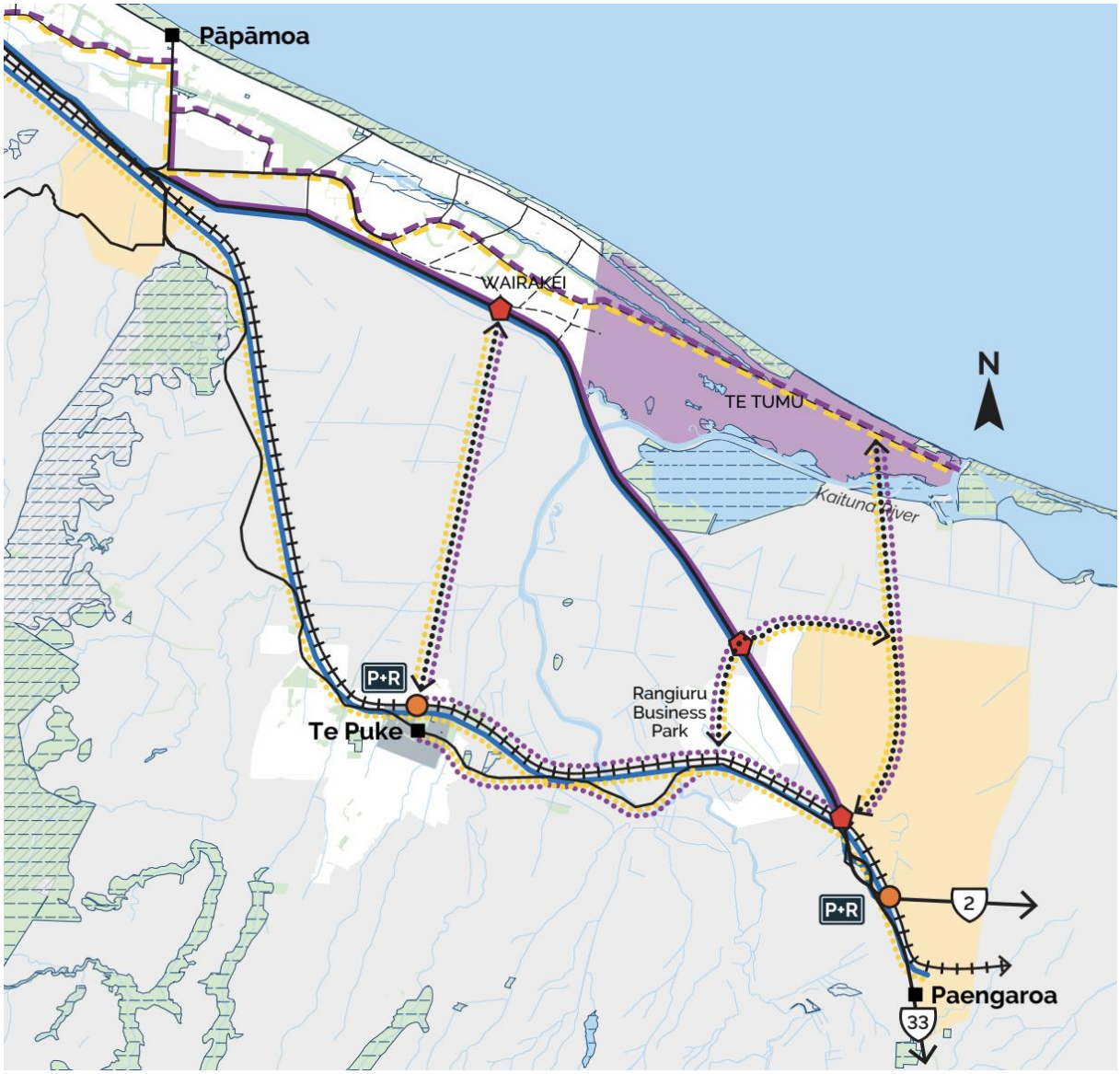


Figure 12: Connected Centres Programme (*Urban Form and Transport Initiative (UFTA) Final Report, 2020)*

2.6.2.2. Papamoa East Interchange

The PEI is a collaboration between TCC and the NZTA, with support from BOPRC and WBOPDC. Construction commenced in 2022 and has recently been completed. The design is shown as Figure 13 below.

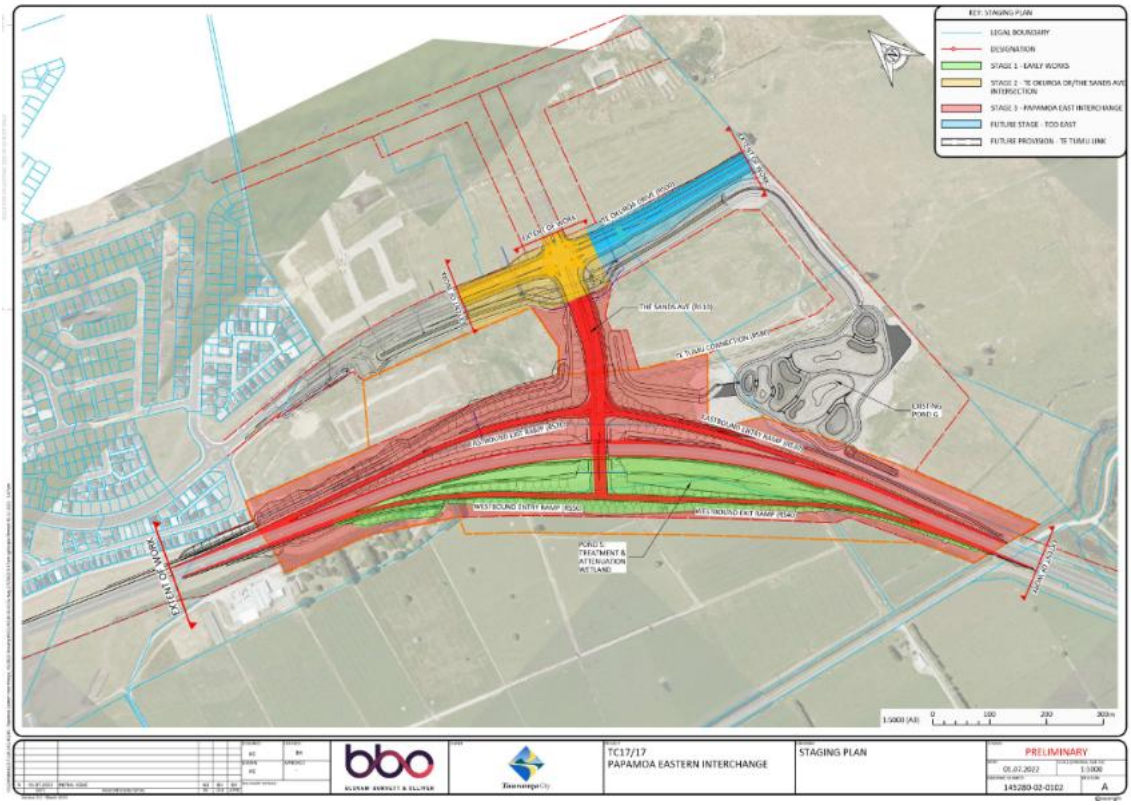


Figure 13: Papamoa East Interchange Design and Construction Staging (Source: TCC)

Other relevant future transport upgrades and initiatives are discussed in the described in the Integrated Transportation Assessment, a copy of which is included as Appendix I.

2.7. WATERWAYS & HYDROLOGY

The existing hydrological and hydrogeological environment of the site is described in detail in the Maven Wairakei South Development Infrastructure Report (Appendix F) and the ENGEO Hydrogeological Assessment Report (Appendix R). The site is traversed by a network of natural and modified drainage channels that form part of the wider Kaituna River and its associated wetlands. An initial assessment confirmed that there are no natural wetlands on the site (see Appendix L). The watercourses constrain development through flood behaviour and drainage capacity, while also providing an opportunity to establish an integrated blue-green network that supports stormwater management, water quality improvement, biodiversity and accessible open space.

The site's existing water conveyance features include the Kopuaroa Canal, a man-made arterial drain forming the southern boundary of the site, and the Bell Road Drain, which runs along the northern side of Bell Road. Both drainage systems convey flows in an easterly direction towards the Kaituna River, located approximately 650 m east of the site.

Flood hazard mapping indicates susceptibility to shallow ponding during high-intensity rainfall. Regional projections suggest sea level rise of 1.59 metres by 2130, under high-emission scenarios (SSP5 8.5), increasing long-term inundation risk of the wider floodplain area (refer Hydrogeological Assessment at Appendix R).

Existing flooding at the site is driven by significant runoff from the upstream catchment, with floodwaters regularly extending across the site and adjoining rural land during relatively frequent storm events. Flood behaviour across the catchment is influenced by the flat topography and low-capacity open drains, resulting in diffuse overland flow rather than flow concentrating into defined channels in all areas. During storm events, the Kaituna River levels can exceed those in the Bell Road Drain, restricting gravity drainage from the site. This backwater effect is compounded by the limited capacity of downstream conveyance infrastructure, including the State Highway culvert and the Bell Road A Pump Station, which currently constrain the rate at which floodwaters can be discharged.

Where flap gates are present, these close when the Kaituna River level exceed drain levels, further restricting outflow until river levels recede or pumping capacity is available.

2.8. ECOLOGY

2.8.1. Ecological Character

The site's existing ecological values are described in detail in the Ecological Assessment prepared by Ecological Solutions (see Appendix L). The site is located within the Tauranga Ecological District which is situated in the Western Bay of Plenty Ecological Region. The ecological district is largely within the coastal bioclimatic zone, as only small portions of the district extend beyond c. 1 km from the coastal environment. Beyond the coastal zone, the rest of the ecological district (including the site) is in the semi-coastal bioclimatic zone.

The site has been primarily used for intensive agriculture, specifically dairy stock grazing and maize crops both presently and historically. The site contains largely low-lying flat topography within the historic Kaituna River floodplain bounded by rear dune sequence on the northern boundary. Vegetation is almost entirely exotic and comprised pasture, shelterbelts and paddock trees. The only indigenous vegetation was occasional cabbage trees (Cordyline australis) along the margins of farm drains and as paddock trees and sparse riparian planting of manuka (Leptospermum scoparium) and giant umbrella sedge (Cyperus ustulatus) along one drain.

A large maize block (314 Bell Road) was largely devoid of vegetation due to recent harvesting and no sowing having yet occurred. This block has areas of rank grass along drains and shelterbelts along with occasional cabbage trees.

2.8.2. Ecological Values

Overall, the existing ecological value of terrestrial features on the site ranges from ‘negligible’ to ‘moderate’, with freshwater ecological values within the site and the receiving environment ranging from ‘low’ to ‘high’. There were no wetlands identified within the site (see Attachment L); however, several BOPRC mapped wetlands are located outside the site which have ‘very high’ ecological value. According to the BOPRC RPS criteria for indigenous vegetation and habitat of indigenous fauna of national importance the site is not considered significant with regard to Section 6c of the Resource Management Act 1991 (RMA).

2.9. OTHER SPECIALIST REPORTS

The Appendices list provides a list of documents that support the Wairakei South Fast-track application as technical appendices. These documents are comprehensive in their assessment of the subject site and surrounds and address the relevant matters for a FTAA application of this nature.

3. PROPOSAL

3.1. WAIRAKEI SOUTH MASTERPLAN

Figure 14: Concept Masterplan (Boffa Miskell Masterplan, Appendix C)

The proposed Development of Wairakei South (shown in Figure 14 above) by BRLP is a large-scale master-planned community, consisting of 2,729 residential lots, and approximately 50 ha of industrial land (refer Scheme Plans at Appendix M). In addition to residential and industrial / employment use, other uses to support a new community of this size are proposed, such as commercial / retail hubs, a school, parks/open space, stormwater reserves and green connections / shared pathways.

The proposal seeks 35-year consent term for all Regional consents and an unlimited term for all District land use and the Heritage Authority for archaeological sites. For the subdivision consent a lapse date for Stage 1 of 5 years is sought and a 15-year lapse date is sought for the remaining stages.

Figure 15 below, depicts the proposed Masterplan.

Figure 15: Development Concept Framework Plan (Masterplan, Appendix C)

3.1.1. Urban Structure & Land Use

Boffa Miskell have prepared the development masterplan (see Appendix C) which promotes a compact, mixed-use urban form that integrates residential neighbourhoods, employment hubs, and community facilities. It includes two dedicated employment land precincts designed to support local business growth, attract investment, and provide employment opportunities. The inclusion of employment land contributes to a balanced land use strategy, supporting economic development alongside the provision of housing.

The masterplan also proposes extensive wetland systems for stormwater and flood management. These wetlands are expected to be among the largest in the Western Bay of Plenty sub-region and will deliver floodwater storage and attenuation, water quality treatment, ecological restoration and habitat creation, recreational and amenity benefits and long-term climate resilience through nature-based solutions.

The Wairakei South site is known to be flood-prone, with climate change projected to increase the frequency and intensity of extreme rainfall events (refer Climate Change and Sustainability Assessment at Appendix AA). Adaptation planning therefore prioritises flood-compatible land use and design, rather than reliance on exclusionary flood protection measures. The development platform is proposed to be filled across that part of the site to be used for urban development maintaining freeboard above the expected water surface elevations for extreme events, including the 100-year, 2130 scenario with a 3.68 °C temperature increase and a sea level rise of 1.59 m (Flood Modelling Report, Appendix H).

The transport framework for Wairakei South has been designed around a clear street hierarchy. A primary arterial connection links the development area to the PEI and provides the principal connection to the TEL corridor. This corridor has been purposely future-proofed so as not to preclude potential future projects (unrelated to Wairakei South) such as connection to Seddon Street in Te Puke and extension of Bell Road east towards Te Tumu Future Urban Growth Area (**Te Tumu**).

The Wairakei South masterplan proposes a mixed-land use framework that includes residential areas with supporting development conditions which have generally adopted the WBOPDC Medium Density Residential Zone's Medium Density Residential standards (**MDRS**). A copy of the development controls and conditions are included in Appendix AF.

The MDRS-compliant medium-density housing typologies such as duplexes (single and double storey) and standalone homes of various sizes (two, three and four bedrooms) are to be enabled through the adoption of development standards as conditions of consent. These housing options offer flexibility, affordability, and adaptability to meet the needs of a growing and diverse population.

Commercial and Industrial areas are strategically located to support employment and services, while a central service centre anchors community amenities and civic functions.

Each distinct residential precinct includes a dedicated neighbourhood centre, providing localised access to retail, community services, and gathering spaces. These centres are designed to reinforce walkability and support the 15-minute neighbourhood model.

A commercial centre located centrally within the Development, serving as a large anchor for employment, retail, and civic activity. This commercial area is complemented by a substantial central reserve, which offers multifunctional open space for recreation, events, and ecological enhancement. Together, these elements form the heart of the development and support both social cohesion and economic vitality.

Urban Economics have prepared an Economic Assessment (Appendix Z) for the project, including identifying the Development composition, as shown in Figure 16 below. Detailed assessment of the Western Bay of Plenty sub-regional market and context are provided in the supporting Economic Assessment.

Activity Type	Lot Type	Dwelling Yield/Total GFA	Lot Size Avg (m^2)	GFA Range (m^2)			Estimated Price per Dwelling / Unit		
				Low	High	Avg	Low	High	Avg
Residential	Type A Type B Type C Type D	[redacted]							
	Sub-total/Avg								
Industrial	-								
Other Business*	Neighbourhood Centre								
	Local Centre								
	Service Centre								
	Sub-total								
Primary School									

*Includes neighbourhood centre, local centres and Service Centre.

**Indicative

***Total centre value.

Source: CoreLogic, TradeMe, Boffa Miskell, UE

Figure 16: Wairakei-South Residential & Employment Development Indicative Composition (Source: Urban Economics, Appendix Z)

The Boffa Miskell masterplan is informed by the National Medium Density Design Guide[3] (Ministry for the Environment, 2022) reflecting best practice in urban design. Five key design principles include:

1. **Contextual Integration:** Respecting and enhancing the natural, cultural, and built environment.
2. **Healthy and Safe Communities:** Designing for wellbeing, safety, and social cohesion.
3. **Housing Choice and Accessibility:** Providing diverse, affordable, and adaptable housing options.
4. **Sustainability and Resilience:** Incorporating climate-responsive design and infrastructure.
5. **Economic Sustainability:** Supporting local employment, services, and long-term viability.

These principles underpin the spatial layout, built form, and public realm design, ensuring a coherent and future-proofed urban structure.

A centrally located 3.5-hectare school site has been provided to be set aside to futureproof the land for future education use, further reinforces community infrastructure and accessibility. The spatial layout reflects the WBOPDC's Residential Outcomes Framework[4] by promoting neighbourhood character, walkability, and access to green space. Public open space includes 3.3 hectares of neighbourhood reserves and 12 hectares of multifunctional green space, supporting both recreation, stormwater management, and ecological function.

[3] Ngā tohutohu hoahoa ā-motu mō te wharenoho mātoru-waenga National medium density design guide, Ministry for the Environment (2022) https://environment.govt.nz/assets/publications/national-medium-density-guide.pdf

[4] Residential Design Outcomes, Western Bay of Plenty District Council (2022) https://www.westernbay.govt.nz/repository/libraries/id:25p4fe6mo17q9stw0v5w/hierarchy/property-rates-building/district-plan/district-plan-changes/MDRS%20supporting%20info/Final%20-%202022-08-10%20-%20Residential%20Design%20Outcomes.pdf

A set of comprehensive Urban Design Guidelines have been developed for the residential, commercial and industrial components of the development. These guidelines, in addition to the framework of proposed consent conditions, guide development quality, ensuring that high standards of architectural design, urban design and landscape amenity are maintained across all facets of the development (refer Appendices AE, AF &. AG).

The below table (Figure 17) summarises the proposed development land-use composition, with the percentage composition identified in Figure 18.

Wairakei South Development Area - Area Calculations & Notes **Masterplan Version 15.0 | Date 25.09.2025**

Table has been updated to reflect changes to areas as per the final concept framework plan (Revision 15) issued 25.09.2025

Feature	Approx. Total Area (ha)	% of Total Area	Description
Site Area (Gross)	349.2	100%	Includes all land parcels confirmed by Maven on 07.07.2025
Employment Zone	52.6	15.1%	Includes all areas noted on the masterplan. Minor roading anticipated within each block.
Service Centre	2.2	0.6%	Located on the PEI2 off ramp to capture TEL traffic and commuters entering/exiting development
Neighbourhood Centre	1.4	0.4%	Located centrally, on primary roading network and stormwater/ shared pathway network
Local Centres	0.5	0.1%	Split over two sites around the development area
Residential (MDRZ)	128.4	36.8%	All areas shown on plans. Excludes primary collector and arterial roads, and primary school site, but includes all local residential roads and green links. **Total confirmed lots (as per subdivision lot layout plans) = 2,700 Lots** *Current average Lots per Hectare ratio of 21 Lots / ha*
Primary School	3.5	1.0%	Located near primary roading and multi-modal / sw network for safe access to students
Neighbourhood Reserves	3.5	1.0%	Includes Major Neighbourhoood Reserve (1.4ha) and 8x approx. 0.25ha reserves spread throughout development
Stormwater Management Areas	134.0	38.4%	Includes Large conveyance corridors and large retention / treatment wetland areas in both blocks. Note: all s/w corridors are to also double as shared path network for walking/cycling connections. (some are illustrated on plan)
Primary Road Network (Shown)	23.3	6.7%	Based on primary roading network shown on plan (36m wide secondary arterial road corridor & 25m wide collector road corridor) Excludes internal roading within development blocks (captured in the MDRZ area)
SUB TOTAL	349.2	100%	

Figure 17: Development Areas Table

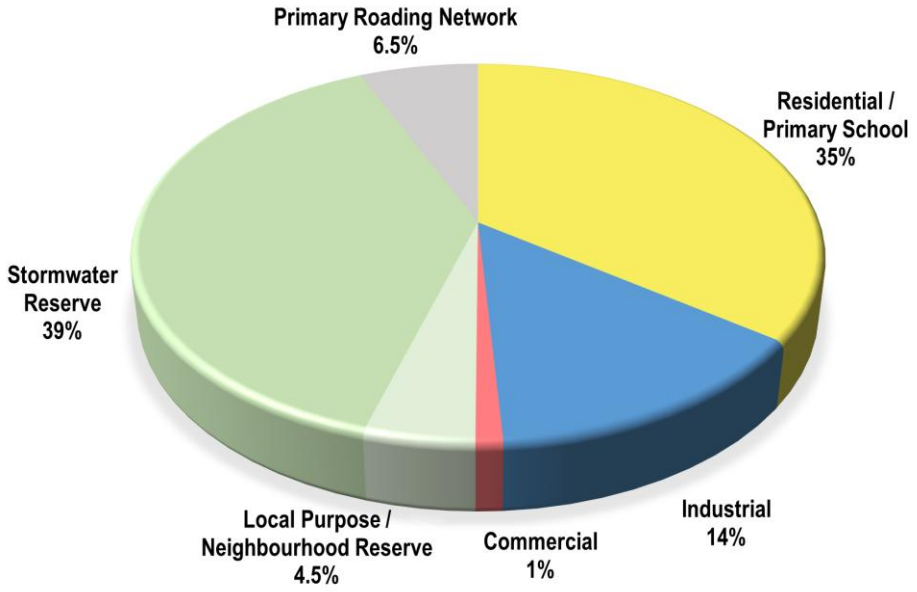


Figure 18: Proposed Development Land Use Composition (Source: Boffa Miskell)

3.1.2. Proposed Subdivision

The proposed subdivision is shown in the Scheme Plans prepared by Maven (Attachment M), and in Figure 19 below. The Scheme Plans show the proposed subdivision, including the position of all new boundaries, the areas of the allotments, the locations and areas of reserves to vest, and land to be set aside and vested as road.

Figure 19: Wairakei South Scheme Plan (Maven Scheme Plans, Appendix M)

The proposed development is planned to be implemented over an approximate 10 to 20-year period, delivered in two main stages:

- Part A – Northern Portion - Tauranga Eastern link to Bell Road over a 1-10 year timeframe; and
- Part B – Southern Portion - Bell Road extending south over a 10-20 year timeframe.

Bulk earthworks will be undertaken across eighteen separate stages, with each stage completed independently, as shown on the accompanying earthworks staging plans (Appendix U), and as shown on Figure 20 below. The subdivision will similarly be developed in a staged manner (see Appendix U).

The subdivision has generally been designed to comply with the subdivision standards relating to the Medium Density Residential, Commercial, and Industrial provisions of the WBOPDC Plan and its

associated Infrastructure Development Code (**IDC**) relating to the engineering requirements for infrastructure and development.

Figure 20: Preliminary Staging Plan (Boffa Miskell Masterplan, Appendix C)

3.1.3. Designations

There are no notices of requirements for Designations or alterations to Designations required for the project to which the application relates.

3.1.4. Urban Design Principles

Development of the Wairakei South Masterplan was guided by the 7C's of the NZ Urban Design Protocol (Context, Character, Choice, Connections, Creativity, Custodianship, and Collaboration), as follows:

- The principle of **Context** is addressed through a design that responds to the site's natural and cultural landscape, integrating topography, hydrology, and iwi narratives.
- **Character** is expressed through cultural placemaking, native planting, and architectural diversity that reflect local identity.
- **Choice** is evident in the provision of diverse housing typologies and land uses that support varied lifestyles and economic opportunities.
- **Connections** are prioritised through walkable neighbourhoods, multimodal transport options, and integration with regional networks.

- **Creativity** is demonstrated in the use of innovative stormwater design, flexible use, and adaptable community spaces.
- **Custodianship** is embedded in the environmental resilience and cultural stewardship strategies, including wetland restoration and partnership with mana whenua.
- Finally, **Collaboration** is reflected in the inclusive planning process involving iwi, Council staff, and community stakeholders.

These principles are reinforced by the WBOPDC Residential Outcomes Framework, which emphasises neighbourhood character, housing diversity, and access to open space. The masterplan also reflects the NPS-UD's requirement for responsive planning that enables growth in areas with good accessibility and infrastructure capacity.

The evelopment is centred around the following nine key Urban Design rinciples:

1. **Diversity of Housing Choice** - provide a range of housing typologies, from duplexes to intergenerational homes, to create inclusive, adaptable neighbourhoods that meet the needs of varied households and income levels.
2. **Compact, Walkable Centres** - establish neighbourhood and local centres that integrate retail, childcare, and community services, enabling a "15-minute community" where daily needs are accessible by foot or bike.
3. **Green and Blue Infrastructure Integration** - design stormwater wetlands, ecological corridors, and reserves as multifunctional landscapes that manage resilience, enhance biodiversity, and provide recreational amenity.
4. **Connected and Multimodal Movement** - deliver a clear street hierarchy supported by public transport loops, cycleways, and pedestrian networks to encourage safe, sustainable, and efficient mobility.
5. **Resilient Urban Systems** - embed climate-responsive infrastructure — including flood management and liquefaction mitigation — into the urban fabric, ensuring long-term adaptability and safety.
6. **Cultural Responsiveness** - partner with Mana Whenua to weave indigenous values, narratives, and papakāinga opportunities into the design, reinforcing cultural identity and belonging.
7. **Employment and Economic Vitality** - integrate 60 hectares of business and industrial land to support thousands of jobs, fostering a balanced live–work environment and reducing commuting pressures.
8. **Healthy and Active Communities** - provide accessible parks, reserves, and green corridors that promote walking, cycling, play, and outdoor activity, supporting physical and mental wellbeing.
9. **Future-Proofed Growth** - align with regional and national growth strategies to ensure the community evolves sustainably, with flexibility to adapt to demographic, economic, and environmental change.

3.1.5. Design Guidelines & Interfaces

Dedicated design guidelines have been prepared for residential, industrial, and commercial areas within Wairakei South (Refer Appendices AE, AF & AG). These guidelines work alongside consent conditions (see Appendix AD) which specify performance standards to achieve high-quality modern urban design, open space, and architectural outcomes. These land use development conditions which will guide future employment, industrial and residential development have been adopted from the WBOPDC's IPI process. They focus on creating strong street interfaces, integrating landscaping, and managing transitions between different land uses. Examples include landscaped buffers and shared paths between employment and residential areas, stepped building heights to soften scale changes, and active frontages in commercial centres to create lively streets. These measures ensure that area boundaries are treated as designed spaces rather than hard edges, improving amenity, connectivity, and the overall character of the development.

3.1.6. Cultural Context

Cultural integration is a cornerstone of the masterplan, guided by the values and aspirations of *Te Kapu o Waitaha* and *Tapuika* iwi, and *Nga Potiki*. The design process has involved active collaboration with mana whenua, ensuring that cultural narratives such as "Mountains to Sea" and "Te Whai Ora o Wairakei" are authentically represented. These narratives shape the spatial organisation of the development, influencing the orientation of streets, the naming of reserves, and the inclusion of cultural markers such as Pou and interpretive signage. This approach fosters a strong sense of place and identity and ensures that the development honours its historical and spiritual context.

The masterplan also responds to the Te Maru o Kaituna (Kaituna River Document), which outlines a vision for river health, co-governance, and community engagement. Water-sensitive design principles are applied across the project to protect and enhance the river environment, including riparian restoration, stormwater treatment, and public access to natural features. These strategies reflect Custodianship and Collaboration under the 7C's, and support the NPS-UD's requirement for responsive planning that considers cultural wellbeing and environmental health. The inclusion of mana whenua in governance and design decisions ensures that the development is not only compliant with statutory obligations but also deeply respectful of the land and its people.

Key cultural element incorporated within the development scheme include:

- **Connection to Maunga and Awa**: Strengthening visual and physical links to significant natural features.
- **Kaitiakitanga and Enduring Relationships**: Embedding guardianship and long-term stewardship in design.
- **Cultural Placemaking**: Celebrating heritage through naming, interpretation, and design elements.

3.1.7. Landscape

The masterplan incorporates a comprehensive landscape framework that responds to the site's existing rural context, ecological values, and visual sensitivity, while supporting the transition to an

urban land use over time. An Assessment of Landscape Effects is included as Appendix K. The proposed landscape approach integrates wetland restoration, buffer planting, cultural expression, and staged mitigation planting, and is relied upon in the assessment of landscape and visual amenity effects.

The masterplan proposes the following key landscape outcomes:

- **Wetland Creation:** Rehabilitating degraded areas into new wetlands to support biodiversity and water quality.
- **Buffer Planting:** Creating green edges to soften urban-rural transitions and enhance amenity.
- **Cultural Landscape Features:** Integrating pou, artworks, and native planting to reflect local identity.

The development is proposed over multiple stages (Refer Figure 20 above) with Part A, (that part of the development north of Bell Road), anticipated to be implemented over approximately a 10-year period. Following the development of Part A, the area to the south of Bell Road (Part B) will be developed over a 7 – 8-year period. To achieve this, a sub-stage, marked currently as Stage 4, requires the development of the stormwater and treatment wetland area within the Part B land area, south of Bell Road. This provides a framework for the integration and advanced establishment of mitigation measures, which will mitigate the future development of Part B in stages, further lowering the earlier identified adverse rural character and visual amenity effects. This is set out in the recommended landscape conditions (see Appendix AD).

Figure 21 demonstrates the changing landscape and visual effects over time, illustrating the relationship between development staging, the timing of mitigation planting, and the resulting reduction in landscape and visual effects across the 20-year development horizon.

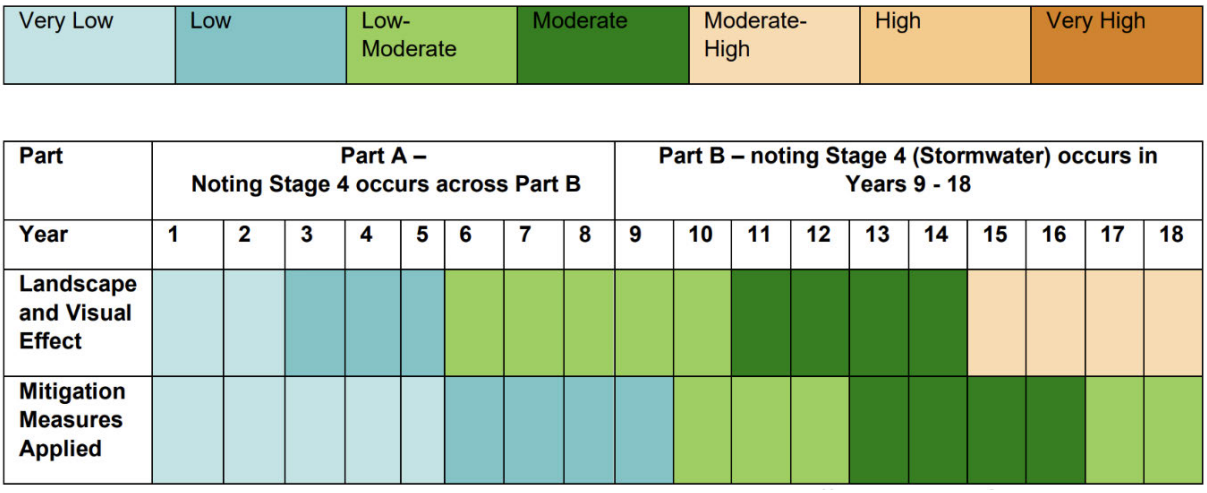


Figure 21: Changing effect over the time of implementation and then the application of mitigation planting (Appendix K)

The outcomes sought through landscape treatments, as described in the Assessment of Landscape Effects (Appendix K), include:

- Establishment of large rural canopy trees**,** comprising a mix of fast-growing exotic and native species, to provide scale and character and visually integrate the development into the

surrounding rural landscape. The purpose is to achieve approximately 75% visual screening, while allowing angled outward views from the development toward Te Rae o Pāpāmoa and the Te Puke foothills**.**

- Vegetation cover within the southern stormwater treatment wetland, providing large groupings of native lowland forest species reflective of the historic wetland and podocarp forest systems that once dominated the landscape. The purpose is to reconnect the site to its indigenous landscape context and reinforce the 'mountains to sea' ecological connection, enhancing both abiotic and biotic landscape attributes.
- Built form that avoids visual dominance in the landscape by way of colour, building branding methods, signage and spot lighting (illuminated signage) at the boundary interfaces.
- Building setbacks and height controls at boundary interface.
- The use of stormwater reserves for the provision of large canopy vegetation and building distancing from the boundary.
- A subdivision form that provides a large stormwater and wetland area at the southern end reflecting the historical stream alignment and wetland patterning of this landscape's historical indigenous condition.

A Landscape Mitigation Plan (Appendix 4 of the Landscape Assessment in Appendix K) forms part of the Masterplan package and identifies the specific landscape measures relied upon for mitigation though the recommended consent conditions. The following mitigation measures are relied upon to address identified potential adverse landscape and visual effects:

- Provision of building setbacks along the western boundary of 20 m for Part A and 70–100 m for Part B, ensuring residential subdivision lot boundaries and resulting built form are sufficiently set back to accommodate landscape mitigation planting in accordance with the Landscape Mitigation Plan.

Architectural Design Controls applied as follows:

- Building 'branding' of bright colours or large format patterning distinctive of a 'business brand' shall not be applied to the employment area interface at the southern and eastern boundaries of Part A and B.
- Signage being avoided on the eastern and southern boundaries of Part B employment commercial and industrial buildings.
- Commercial and industrial buildings shall have no more than a 60% Reflectance Value (**RV**) RV for roofs and a 75% RV for walls, downpipes and joinery.

The preparation of a Landscape and Ecological Management Plan (**LEMP**) is proposed which will be prepared in general accordance with the Landscape Mitigation Plan. The LEMP must address the following:

- Detailed landscape mitigation and ecological enhancement planting along the stormwater reserves at the eastern, western and southern boundaries. Planting must provide for a minimum of 60% canopy vegetation coverage along boundaries, arranged in clusters, with

two clusters extending into the site along the western boundary, achieving approximately 75% screening while maintaining angled outward views. Refer to Landscape Mitigation Plan Diagrams at Annexure 3 to the Landscape Assessment at Appendix K.

- Delivery of a large, planted stormwater treatment wetland, reflective of indigenous wetland vegetation and incorporating canopy clusters to visually integrate the development into the surrounding landscape.
- Staging of mitigation planting to align with stormwater reserve establishment, particularly ensuring Part B mitigation planting is implemented at Stage 4, ahead of built development.
- Provision of a landscape planting programme providing short-term mitigation (0–10 years) through large exotic canopy species and longer-term mitigation through native planting to restore indigenous landscape character.
- Detailed specification for implementation and maintenance.
- Integration of cultural taonga species in collaboration with Mana henua.

3.1.8. Streetscape Planting Strategy

A comprehensive planting strategy has been developed for the Wairakei South Development that responds specifically to the function and character of each road typology within the movement hierarchy. This is detailed in the Urban Design Assessment (see Appendix J). An example of the proposed roadway planting strategy is included in Figure 22 below.

Planting design is used as a key structuring element to reinforce legibility, enhance streetscape character, and contribute to amenity and environmental performance, while maintaining operational safety and servicing requirements in accordance with the WBOPDC IDC which applies to subdivision and development.

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.

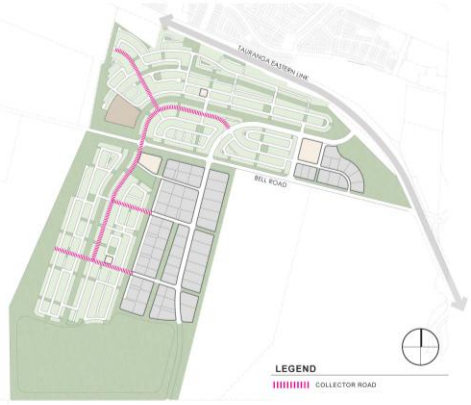
All plants are to enable good open sightlines, with most plant species selected being the type that generally grow less than 500mm in height.

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.

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

Figure 22: Example of Roadway Planting Strategy (Boffa Miskell, Appendix E)

3.2. PROPOSED RESIDENTIAL AREAS (128.4 HA | 36.8%)

The Wairakei South Masterplan incorporates a diverse range of housing typologies designed to meet the needs of a growing and varied population. These typologies reflect the principles of Choice and Character from the NZ Urban Design Protocol, while aligning with the Medium Density Residential Standards and the WBOPDC Residential Outcomes Framework, which emphasise housing diversity, affordability, and neighbourhood integration. The housing typologies proposed for each of the neighbourhoods are identified in Figure 23 below.

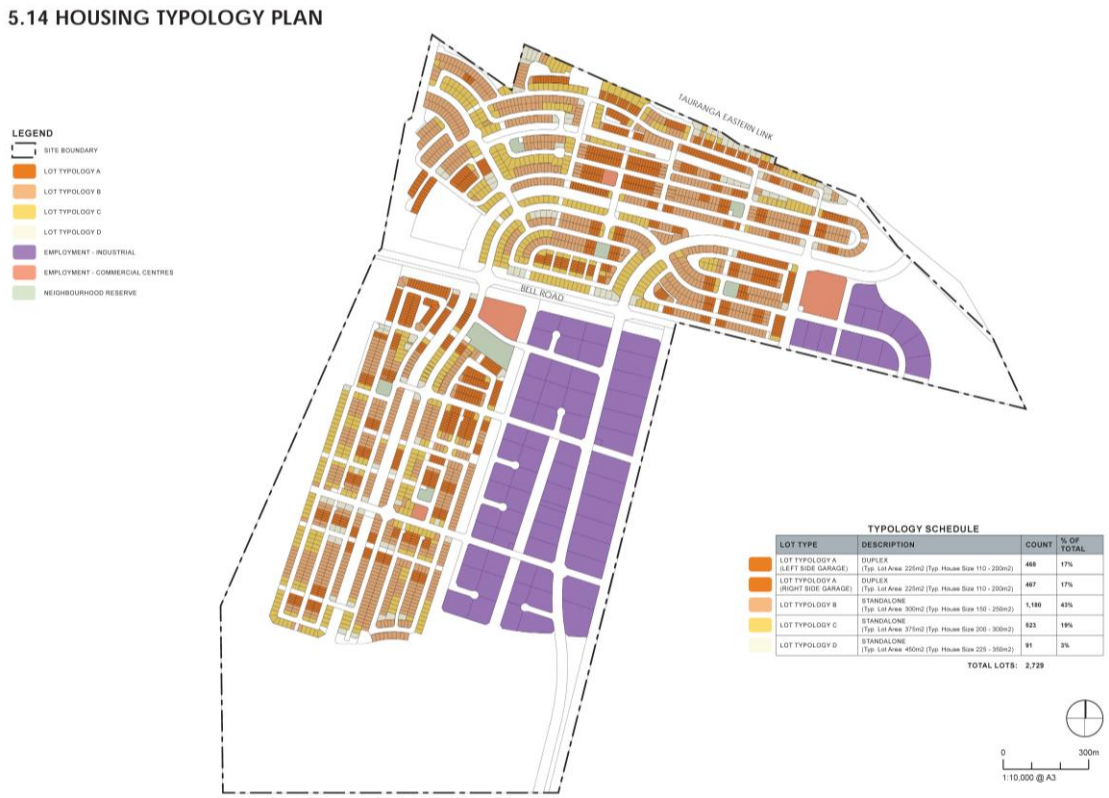


Figure 23: Housing Typology Plan (Boffa Miskell Masterplan, Appendix C)

Residential precincts include standalone homes of various sizes (2, 3 and 4-bedroom primarily) and single and double storey duplexes. Standalone homes are positioned primarily along the outer edges of the precincts, offering privacy and larger lot sizes suitable for families and those seeking traditional suburban living. Duplexes and townhouses are located closer to neighbourhood centres and shared open spaces, promoting walkability and social interaction.

These medium-density forms provide efficient land use while maintaining a strong sense of community character.

Representative examples of standalone and duplex MDRZ housing typologies are shown in Figure 24 above and Figure 25 below.

4.5 LOT TYPOLOGY B - STAND ALONE HOUSE

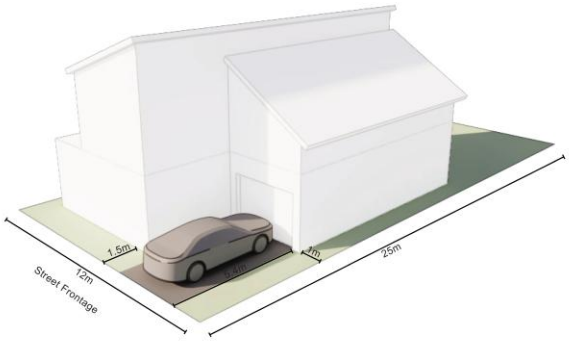
LOT DIMENSIONS	LOT AREA	DWELLING SIZE (MAX)
12x25m	300m2	150-250m2 (over 2 floors)

MDRZ RULES:

- Building Height - Maximum 11 meters + 1 meter for a pitched roof
- Building height in relation to boundary - Maximum 4 meters + 60° recession plane
- Side Yard - 1m minimum
- Rear Yard - 1m minimum
- Outdoor living space per unit - Ground floor: minimum 20m² with 3-meter minimum dimension
- Building Coverage - Max 50% of site

ARCHITECTURAL DESCRIPTION:

- 2-4 bedrooms
- Single or double story
- Single garage



LOT TYPOLOGY DIAGRAM

Indicative lot / house layout with nominal boundary sizes and boundary offset dimensions shown.

Figure 24: Example of a free standing MDRZ housing typology

4.4 LOT TYPOLOGY A - DUPLEXES

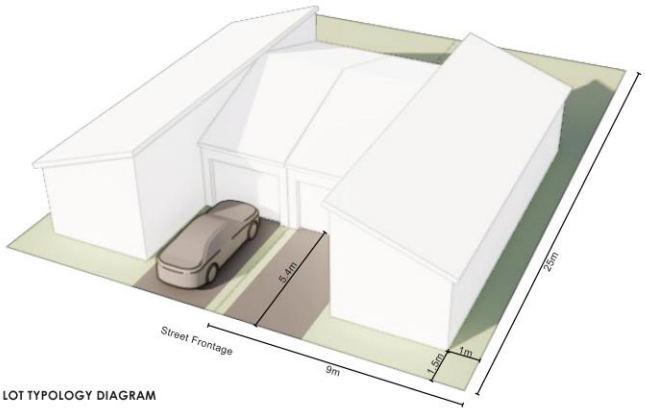
LOT DIMENSIONS	LOT AREA	DWELLING SIZE (MAX)
9x25m	225m2	110-200m2 (over 2 floors)

MDRZ RULES:

- Building Height - Maximum 11 meters + 1 meter for a pitched roof
- Building height in relation to boundary - Maximum 4 meters + 60° recession plane
- Side Yard - 1m minimum
- Rear Yard - 1m minimum
- Outdoor living space per unit - Ground floor: minimum 20m² with 3-meter minimum dimension
- Outdoor living space per unit - Above ground: minimum 8m² with 1.8-meter minimum dimension
- Building Coverage - Max 50% of site

ARCHITECTURAL DESCRIPTION:

- 2-4 bedrooms
- Single or double story
- Single garage (optional)



LOT TYPOLOGY DIAGRAM

Indicative lot / house layout with nominal boundary sizes and boundary offset dimensions shown.

Figure 25: Duplex MDRZ Housing Typology Example

Compact two-storey duplex dwellings are strategically placed near the central commercial centre and adjacent to key transport corridors. These typologies support accessibility to services, employment, and public transport, and cater to smaller households, young professionals, and older residents seeking low-maintenance living. All housing types are designed to integrate with the surrounding landscape and streetscape, using consistent architectural language, native planting, and orientation principles that maximise sunlight, privacy, and passive environmental performance.

3.3. PROPOSED EMPLOYMENT (INDUSTRIAL) AREA (49.8 HA | 14.3%)

The Employment Area is the largest non-residential component and provides space for businesses, light industry, and commercial activities. This area is critical for creating local jobs and reducing the need for long commutes. It is well connected to the main road network for efficient freight and worker access. Buildings near the edge with housing are stepped in terms of a height transition and softened with landscaping and green buffers to create a smooth transition between work and living areas. Shared paths and green corridors are integrated so workers can walk or cycle safely. These design moves make the employment area functional yet pleasant, with trees, seating, and small open spaces to avoid a purely industrial feel.

Specific Industrial Design Guidelines have been developed for the Industrial area to ensure high-quality development outcomes. These guidelines (see Attachment AE) focus on achieving a well-considered built form, managing site interfaces, and creating sympathetic transitions between industrial and residential areas. Measures include landscaped buffers, active frontages where appropriate, and integrated green corridors to soften visual impacts. The guidelines also incorporate strategies to mitigate reverse sensitivity effects, ensuring that adjacent residential areas maintain amenity while industrial activities can operate efficiently. Together, these provisions support a functional, attractive, and contextually responsive employment environment. Compliance with the standards for Industrial development, including the Design Guidelines and an accompanying design review process are included in the recommended consent conditions (see Appendix AD).

3.4. PROPOSED COMMERCIAL DEVELOPMENT

The Neighbourhood Centre is located centrally to maximize walkable catchment and adjacent primary roading network and reserve network for full multimodal access to centre. The Centre is located centrally to maximize walkable catchment for Wairakei South residents and to provide choice as an alternative to the existing employment zone at The Sands Town Centre in the existing Wairakei Urban Area to the north. Employment land is also located adjacent to the primary roading network (specifically the secondary arterial road corridor). The employment land is anticipated to have additional local centres present to service workers and through traffic (once wider connections are linked up in the long term).

Figure 26 below illustrates the planned hierarchy and catchments of urban centres across Wairakei South.

Figure 26: Urban Centres Framework (Boffa Miskell Masterplan, Appendix C)

3.4.1. Service Centre (2.2 ha | 0.6%)

The proposed Service Centre is strategically positioned near the TEL and PEI and acts as a gateway for visitors and commuters. It provides fuel, food, and convenience retail for both locals and passing traffic. Its location makes it easy to access from the highway and local roads, and the design creates a strong sense of arrival through landscaping and clear signage. To make it more than just a functional stop, the centre will include future cafés and outdoor seating, creating a welcoming space for people to pause and interact.

3.4.2. Neighbourhood Centre (1.4 ha | 0.4%)

The central Neighbourhood Centre, located directly south of Bell Road, is designed to be the heart of the Wairakei South community. It will offer shops, dining, and services within walking distance of homes, positioned on the main street with strong pedestrian and cycle links. This centre is designed to host community events and support local businesses, making it a lively and social hub. Active frontages, public squares, and shaded seating encourage people to meet, spend time, and connect, turning the centre into a destination rather than just a shopping area.

3.4.3. Local Centres (0.5 ha | 0.1%)

There are two Local Centres proposed which are small hubs spread through the neighbourhood for everyday needs like cafés and local dairies. They are placed along multi-modal walking and cycling routes to strengthen the local network and reduce car trips. Their design blends with surrounding housing to maintain a neighbourhood feel. Each centre includes small gathering spaces and greenery, making them social anchors at the micro-scale and reinforcing community identity. Consistent with

the approach adopted for the Industrial areas, Commercial Design Guidelines (see Appendix AG) have been developed for the Commercial areas, which along with a design approval process and these are reflected in recommended consent conditions (see Appendix AD) to achieve appropriate design outcomes.

3.5. PROPOSED RECREATION & OPEN SPACE

The reserves and open space network proposed is shown on the Masterplan (Appendix C) and in Figure 27 below.

Figure 27: Reserves and Open Space Network (Boffa Miskell Masterplan, Appendix C)

The Development will deliver a well-integrated network of "local" reserves totalling approximately 3.3 hectares across eight individual sites.

This includes one Major Neighbourhood Reserve, centrally located to ensure optimal accessibility within a 1.5km walking radius for most residents. This reserve will feature a high-quality playground (approx. 500m²), public toilets, and a FIBA-standard basketball court. It will be co-located adjacent to the Neighbourhood Centre to support community activity and encourage social interaction.

The remaining seven reserves will each be approximately 2,500m² in size and distributed throughout the development to ensure most residents are within a 400m walking radius. Their placement will consider physical barriers such as roads and stormwater corridors to maintain accessibility. These smaller reserves will offer varied levels of service, including diverse play spaces, passive open areas, shade trees, and pathways, providing flexible recreational opportunities for all age groups.

In total, the development will provide 12 hectares of Local Area Open Space, which includes the neighbourhood reserves and a broader network of stormwater conveyance areas, wetlands, and walkway strips. This open space is designed to be accessible within a 2km walking radius for most residents and supports the Level of Service requirement of 1.7ha per 1,000 residents, based on an anticipated population of 7,200 people.

A 3m wide (minimum) shared pathway network, with a combination of timber boardwalks, concrete and gravel chip surfacing, will connect these reserves to key community facilities such as the primary school (approx. 4ha), Neighbourhood Centre (1.4ha), and external networks including Papamoa, Te Ara o Wairakei, and the Tauranga Eastern Link. All neighbourhood reserves will be equipped with power and water connections to support event infrastructure.

All Neighbourhood Reserves are intended to be developed in more detail in stages to align with the staging of the overall development. This will be undertaken in accordance with further consultation with WBOPDC and local Mana Whenua with a final design and plan being required as a condition for consent for each.

Signage, wayfinding, and cultural interpretation elements will be incorporated throughout the reserve network in alignment with WBOPDC's strategy for reserves and in partnership with Mana Whenua. These features will enhance the identity and usability of the open space network while celebrating local heritage and values.

The local reserve and open space provisions within the development are as follows:

1. **Total Local Reserves**
    - 3.5 hectares across 8 reserves.
2. **Major Neighbourhood Reserve**
    - Approx. 1.4 - 1.5 hectares in size.
    - Centrally located for accessibility within a 1.5km walking radius.
    - Includes a high-quality playground (approx. 500m² footprint).
    - Public toilets sized for anticipated usage.
    - FIBA-standard 3x3 basketball court (13x17m including runout zones).
    - Co-located adjacent to the Neighbourhood Centre.
3. **Neighbourhood Reserves (x7)**
    - Each approx. 2,500m² in size.
    - Distributed to ensure 400m walking access for most residents.
    - Varied levels of service including:
    - Play spaces;
    - Passive open areas;
    - Shade trees;

- Pathways; and
- Placement considers physical barriers (e.g. roads, stormwater corridors).

4. **Local Area Open Space**
   - Total of 12 hectares (includes neighbourhood reserves).
   - Accessible within a 2km walking radius.

   Includes:
   - Stormwater conveyance areas.
   - Treatment wetlands.
   - Walkway strips and green corridors.
5. **Pathways and Connectivity**
   - Shared pathway and boardwalk network throughout reserves and stormwater corridors.

   Links to:
   - School site.
   - Neighbourhood Centre.
   - Wider networks (Papamoa, Te Ara o Wairakei, TEL).
6. **Community Facilities**
   - Primary School: approx. 4ha, located on Public Transport loop and collector road.
   - Neighbourhood Centre: approx. 1.4ha, connected to reserve network.
   - Secondary School: not required (existing provisions nearby).
7. **Infrastructure and Amenities**
   - Power and water connections at all neighbourhood reserves.
   - Signage, wayfinding, and cultural interpretation throughout.
   - Aligned with Council's strategy and developed in partnership with Mana Whenua.

Consent conditions have been proposed (see Appendix AD) to address the detail required at the time of final design for each of the reserves including a collaborative process with the WBOPDC (see Appendix AD).

3.6. PROPOSED SCHOOL SITE

The proposed design provides for a site to futureproof a 3.5 ha Primary school located on the public transport loop within the site. The location (lot 1313) is shown on the subdivision scheme Plan (see Appendix M) and on the Masterplan (Appendix C). The school and its location have been discussed with the Ministry of Education, and this is considered further in the consultation and engagement section of this report. The timing of the school is dependent on the Ministry of Education's ongoing assessment of the needs as the development progresses. In the meantime, it is anticipated that

future residents will attend the existing schools at Wairakei/Papamoa East directly to the north and northwest of the site

3.7. INFRASTRUCTURE STAGING

Different types of infrastructure respond differently to growth:

- Water/wastewater responds to connections.
- Transport responds to movement behaviour.
- Each lot connected immediately creates hydraulic demand.
- Not every lot immediately creates peak congestion demand.
- Separate growth curves reflect how each network functions.

Water and wastewater demand is immediate with load beginning at occupation, and it is proposed to demonstrate that capacity will be available at the Development Works Approval (**DWA**) stage of development. Headworks capacity must exist before occupation and there is a regulatory compliance risk if capacity is insufficient. Treatment plant capacity must be ready ahead of growth.

Water and wastewater require bulk upgrades in advance and is sensitive to cumulative population equivalent.

Transport demand is peak hour based and distributes across various routes. There are changes with staging geography that are influenced by internal trips and future employment land. Network effects evolve over time - they do not scale perfectly linearly with dwelling connections.

Transport can be upgraded incrementally, is triggered at defined capacity thresholds and allows monitoring-based staging.

Due to the different growth curves, capital spend will be aligned with demand timing. To reduce risk of over- or under-expenditure. This will support accurate debt and funding modelling and avoid a single blended rate of development distorting cost allocation.

In a development like Wairakei South, residential uptake normally accelerates once established and employment land typically lags residential. Transport impacts depend on employment timing which is typically less certain than residential development. Assuming identical residential and employment development rates risks overstating early transport impacts.

The proposed approach to staging is described throughout the following sections. It aims to protect regulatory compliance for three waters, avoid premature transport capital spend and enable adaptive transport staging based on monitoring. Feedback from the WBOPDC on water and wastewater infrastructure is that the WBOPRC is satisfied that a viable pathway exists to provide short-term and full development capacity in terms of servicing. A copy of this confirmation for the WBOPDC is included as Appendix N.

3.8. TRANSPORTATION & ACCESS

The following sections describe the overall roading and multi-modal networks, including examples of typical cross sections and layouts, for Wairakei South. Further information on cross-sections,

intersections, traffic calming and speed measures, carparking and the staging and conditions framework can be found in the Integrated Transport Assessment (**ITA**) included as Appendix I.

Development will occur within a connected street network that integrates with the surrounding transport system and provides access to the strategic road network via the PEI and the Bell Road corridor.

3.8.1. Network Response & Staging

The transport modelling and stakeholder engagement processes detailed in the ITA have informed a staged approach to the delivery of transport infrastructure associated with the Wairakei South development. This approach recognises that the development will occur progressively over an extended timeframe and that transport infrastructure can therefore be implemented in stages aligned with the scale and timing of development. This includes work on the surrounding roading network as noted in Table 7 below.

Transport modelling indicates that the existing and currently committed transport network can accommodate the initial stages of development, subject to the establishment of appropriate connections to the PEI and upgrades to the Bell Road corridor to enable safe and efficient access to the wider network. These initial works therefore form the baseline enabling infrastructure required to support early development within the site.

As development progresses and cumulative traffic demand increases, further upgrades to the surrounding network are required to maintain acceptable levels of service and network resilience. In particular, the modelling identifies increasing sensitivity within The Sands Avenue corridor and at the PEI, reflecting the role of these facilities as the primary connections between the development area and the TEL corridor. The modelling also identifies the Bell Road / Te Puke Highway corridor as a location where operational and safety considerations arise as traffic volumes increase, particularly in relation to the adjacent railway level crossing.

The overall staging and mitigation findings are summarised in Table 7 below.

Table 7: Summary Mitigation and Staging

MITIGATION MEASURE	2035	2048	2063
Development Release	**Up to 1,734 dwellings and 8ha of industrial**	**Up to 2,500 dwellings and 49ha of industrial**	**Up to 2,750 dwellings and 55ha of Industrial**
Mitigation Requirements:			
Preparation of a Transport Network Accountability Report	✓	✓	✓
Legal access to PEI	✓	✓	✓
Incorporation of a southern leg at the PEI southern signals	✓	✓	✓
Widening of Bell Road	✓	✓	✓
Upgrading of Bell Road/Parton Road to include a right turn bay	✓	✓	✓
Upgrading of Te Puke Highway/Bell Road intersection to signals	✓	✓	✓
Safety improvements at Bell Road level crossing	✓	✓	✓
Lengthening of Domain Road Northbound on ramp	-	✓	✓
Additional lanes on Sands Avenue	-	✓	✓
Upgrades at Te Okuroa Drive/Sands Avenue intersection,	-	-	✓
Eastbound PEI bypass lane	-	-	✓
Latham Drive connection	-	-	✓
Free left turn lanes on The Sands Ave southern approach and The Boulevard eastern approach to the signalised intersection	-	-	✓

3.8.2. Roading Network

The roading network for Wairakei South is designed to provide efficient regional connectivity, support internal movement, and integrate with the surrounding transport system, while maintaining a clear, legible road hierarchy.

The PEI provides a direct on- and off-ramp connection to State Highway 2, linking Wairakei South with Pāpāmoa East and The Sands. Bell Road, which runs through the site between the northern and southern development areas, will be upgraded to accommodate anticipated development demand and to function as a key internal spine road (Figure 28).

A new network of public roads is proposed to connect the PEI and Bell Road and to service the residential, commercial, and employment areas. Provision is made for a future southern connection to Te Puke via Seddon Street, supporting long-term network connectivity and aligning with the Connected Centres Programme under the UFTI. The overall structure and extent of the proposed roading network are shown in Figure 28.

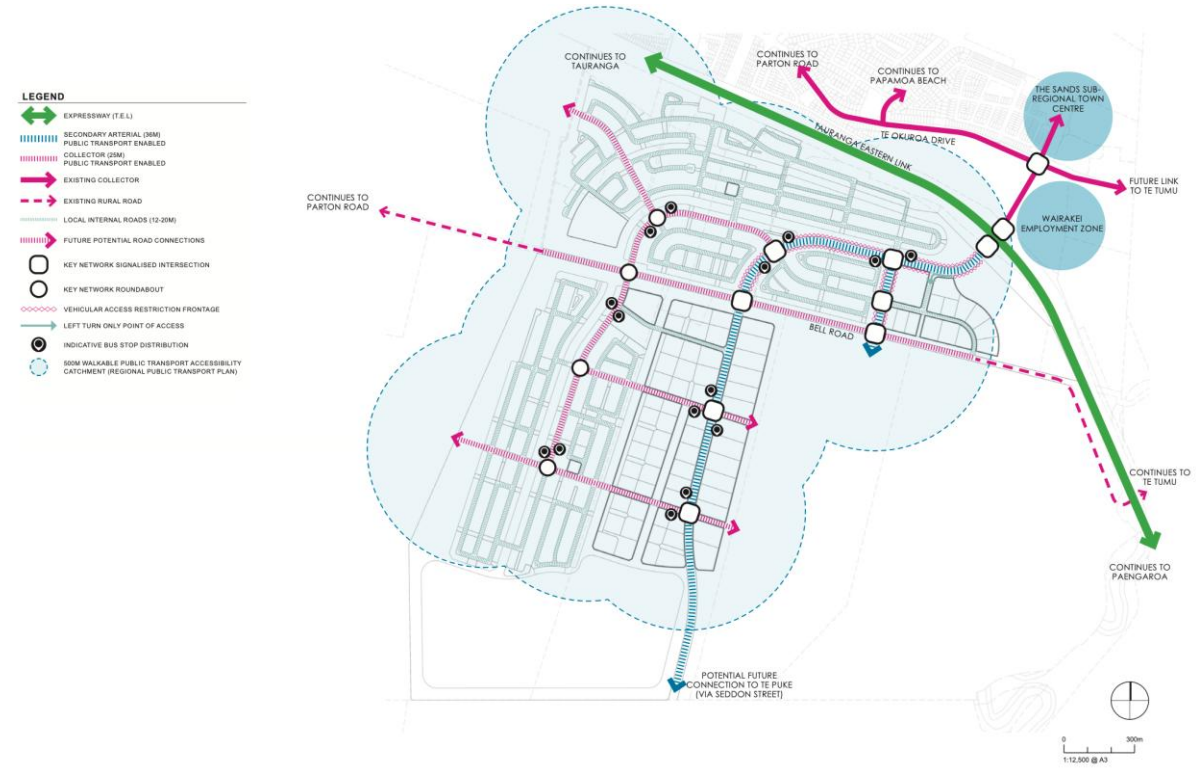


Figure 28: Road Transport Network (Boffa Miskell Masterplan, Appendix C)

The internal road network provides connectivity through the site between Pāpāmoa and Te Puke via secondary arterial roads, supported by collector roads that provide primary access through residential, commercial, employment areas, and local roads and laneways that support property access, low vehicle speeds, and neighbourhood amenity. This hierarchy is deliberately structured to distinguish movement-focused routes from streets designed primarily for local access and place-making.

The masterplan establishes a clear road hierarchy consisting of:

- Secondary Arterial Roads facilitating regional movement and freight.
- Collector Roads connecting neighbourhoods and key destinations.
- Residential Streets designed for safety, walkability, and community interaction.
- Shared Space Laneways are also incorporated in key locations around higher-density housing and commercial nodes, allowing for multi-functional use be residents, beyond just allowing for vehicular circulation.

The design intent for the primary roading typologies is illustrated through typical cross-sections for secondary arterial and arterial roads, shown in Figure 29 below.

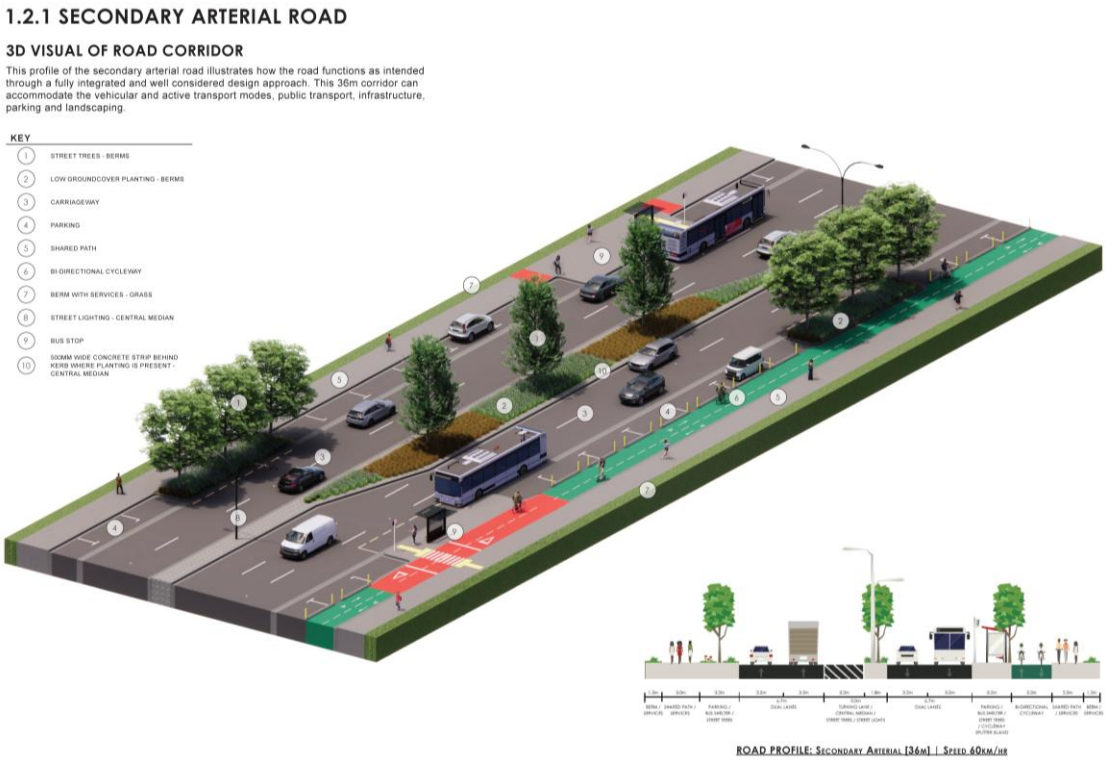


Figure 29: Example of proposed roading typologies – Secondary Arterial Road (Boffa Miskell Landscape Package. Appendix E)

The above figures demonstrate how key movement corridors accommodate vehicles, freight, pedestrians and cyclists while also contributing positively to streetscape quality and public amenity. Street design incorporates shared paths, tree planting, and traffic-calming measures such as speed tables and raised crossings to create attractive, safe, and functional public spaces.

The roading layout is based on the current site extent and indicative development form. Local internal roads shown on the masterplan are indicative and will be refined through detailed design as final lot layouts and stormwater infrastructure are confirmed. Some laneways and minor roads are not shown at this scale but will be introduced to provide additional permeability and fine-grain connectivity within neighbourhood areas. Indicative local road widths are generally in the order of 10-12 metres.

All public roads will be designed to meet Western Bay of Plenty District Council standards, with both vertical and horizontal geometry complying with the applicable design parameters. Intersections within the site will be designed to suit their function and context and may include give-way controls, traffic signals, or roundabouts. Refer to the Boffa Miskell's ITA for wider traffic network upgrade concepts resulting from regional traffic modelling (Appendix I).

Common Access Lots (**CALs**) are proposed where required to service multiple properties, as shown on the Engineering Drawings at Appendix D. Legal widths of CALs will generally range between 6.0

metres and 9.0 metres, depending on the number of lots served, and will be confirmed at the detailed subdivision stage.

3.8.3. Multi-modal Network

The masterplan incorporates a comprehensive multi-modal network that supports walking, cycling, and public transport as integral components of the overall transport framework (refer Figure 30).

Secondary arterial and collector roads are designed as multi-modal corridors, incorporating shared pedestrian and cycle pathways on one or both sides of the carriageway. These routes form the primary on-street active transport spine through the development and provide safe, continuous connections between neighbourhoods, centres, and community facilities.

In addition to on-street provision, a network of off-road shared paths is integrated throughout the stormwater conveyance corridors and open space network. These alternative transport corridors provide direct, low-stress routes for walking and cycling, enhance connectivity through green spaces, and link residential areas with key destinations across the site, including the primary school, neighbourhood and local centres, reserves, employment areas, and the commercial centre.

The multi-modal network supports a 15-minute neighbourhood model, enabling residents to access most daily needs within a short walk or cycle. This approach reduces reliance on private vehicles, supports healthy and active lifestyles, and reinforces the walkable catchment structure shown in Figure 30 below.

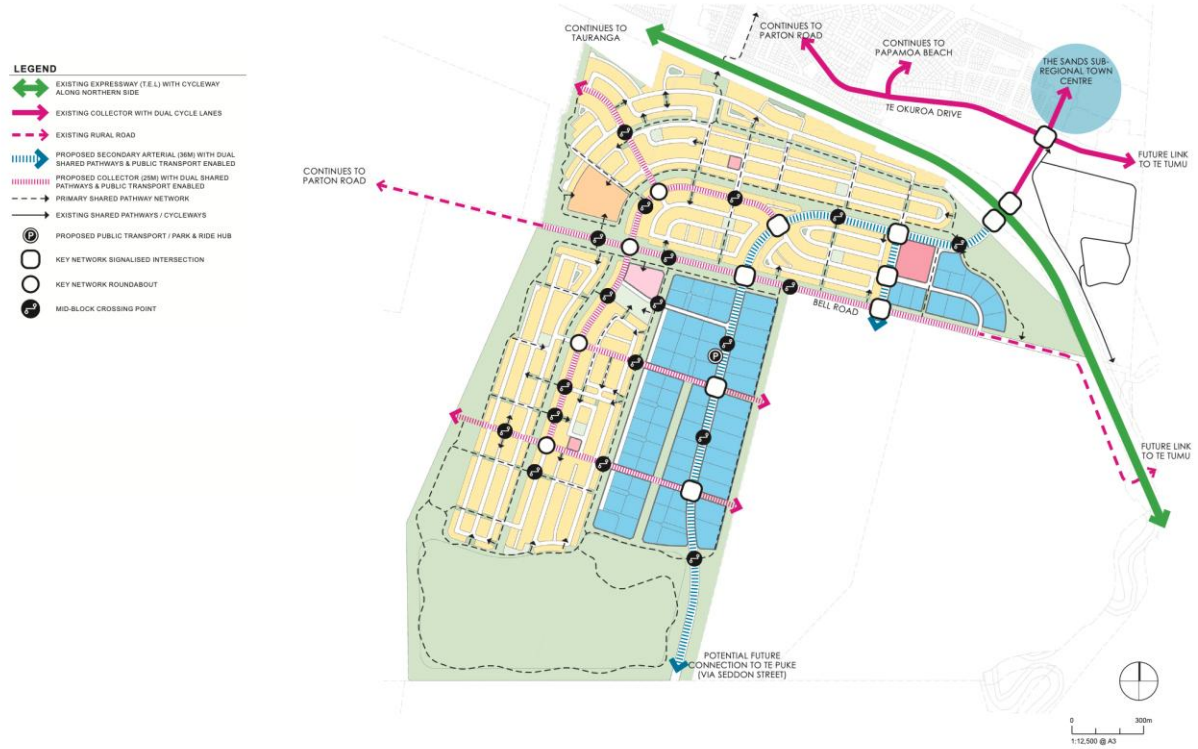


Figure 30: Multi-modal network (Boffa Miskell Masterplan, Appendix C)

Public transport is facilitated through a proposed public transport loop and park-and-ride hub, improving access to regional services and enhancing transport choice for residents and workers.

Together, the integrated on-street and off-road movement networks promote safe, convenient, and sustainable mobility and reflect the Connections and Choice principles of the 7C's NZ Urban Design Protocol Framework. This approach aligns with the NPS-UD by enabling growth in a location with good accessibility and a range of transport options.

3.9. FLOODING & STORMWATER

The stormwater and flood management framework for Wairakei South has been designed to manage both on-site runoff and significant upstream catchment flows, while improving flood resilience, protecting downstream environments, and integrating stormwater infrastructure with open space and amenity outcomes (refer Figure 31 below). A series of drainage canals, conveyance channels and pump upgrades and additions are proposed which are addressed in detail in the Infrastructure Report (see Appendix F), the Stormwater Management Plan (see Appendix G) and the Flood Modelling Report (see Appendix H) prepared by Maven.

Figure 31: Stormwater Network Solution (Boffa Miskell Masterplan, Appendix C)

The proposed stormwater solution is based on stormwater modelling (refer Appendix H) and has informed the masterplan layout, noting that detailed design refinement will occur as the development progresses.

Figure 31 above illustrates the proposed stormwater network for the development master plan, including the primary piped reticulation system, conveyance corridors, wetlands, and downstream discharge locations. A piped stormwater reticulation system is proposed to collect and convey runoff

generated from the proposed residential and employment lots to new downstream stormwater infrastructure.

The proposed stormwater infrastructure, including the primary piped network and individual property connections, has been designed to convey minor storm events in accordance with the requirements of WBOPDC Design Standard DS5 (Stormwater).

3.9.1. Stormwater & Flood Modelling

Flood behaviour for the development has been assessed in the Flood Modelling Report prepared by Maven (Appendix H). The report presents a detailed hydrological and hydraulic assessment of pre- and post-development conditions across a range of storm events, including scenarios that incorporate future climate change allowances and sea level rise.

The Flood Modelling Report has been independently reviewed by Awa Environmental, as requested by Bay of Plenty Regional Council. A copy of this peer review is attached to the Flood Modelling Report (see Appendix H). Hydrological mitigation is a core driver of the stormwater management strategy for Wairakei South, given the site's location within a sensitive floodplain environment.

The modelling considered the applicant's engineering response and landform and demonstrates that rainfall events ranging from frequent minor storms through to a future 1% AEP climate change–adjusted event can be managed such that flood levels and flow rates beyond the site boundary are not increased.

Flood storage displaced by development is partially offset by the storage created within the on-site swale and large wetland attenuation network, with the balance provided through active mechanical pumping of stormwater to the Kopuaroa Canal and Kaituna River, leveraging available downstream capacity.

At a masterplan level, the Flood Modelling Report concludes that the proposed development delivers a net-positive outcome for flood management within the Bell Road catchment, with water levels and flows managed to protect critical assets and building platforms under the assessed design events, including future climate scenarios. Water surface elevations derived from Maven's flood modelling have informed the design of building platforms, road levels, drainage infrastructure, and attenuation systems across the development.

Further detail regarding the modelling setup, assumptions, scenarios, results, and limitations is provided in the Maven Flood Modelling Report and its Appendices (see Appendix H). The Flood Modelling Peer Review Memorandum provided by Awa, summarising that Awa considers the modelling suitable to support the applicant's current substantive fast-track application based on the assumption that the 100-year climate change event is the key event to evaluate if flood volumes and levels can be managed.

3.9.2. Stormwater Infrastructure Development Staging

Based on the earthworks staging plan (refer Section 3.13.3 and the Earthworks Management Plan at Appendix U), the stormwater features for the site will be developed in the following sequence:

3.9.2.1. Stage 1

Pāpāmoa East Interchange link road construction associated causeway for stormwater conveyance beneath the PEI link, stormwater reticulation and partial construction of the North Block wetland swales to provide stormwater quality treatment/flood mitigation/conveyance to the PEI link, and the basin and low flow channel to provide attenuation/conveyance to the Bell Road drain. The Bell Road A Pump station will have an additional 3m³/s upgrade with backup power provided.

3.9.2.2. Stages 2 - 3

Construction of reticulation and extension of wetland swales to provide treatment and conveyance. Strategic excavation of peat and poor-quality soil which provides offset flood displacement storage for northern half of the North Block. The second new pump is to be added to the Bell Road A Drain Pumpstation, adding 3m³/s capacity and a total of 6m³/s capacity added.

3.9.2.3. Stage 4

Construction of the South Block pumpstation discharging to the Kopuaroa Canal and the installation of a 2.5m³/s Archimedes screw pump and 0.3m³/s groundwater dewater pump with 24-hour backup power giving a total Stage 4 capacity of 2.8m³/s.

Construction of the Bell Road causeway providing stormwater conveyance link to the South Block. Western conveyance swale construction from causeway to South Block pumpstation. Further strategic removal of peat soils or excavation and use of good quality soils will create the South Block basin to provide flood storage.

3.9.2.4. Stages 5 - 8

The remainder of the North Block construction is to be completed. Reconstruction of the Bell Road Drain and Bell Road upgrade will be progressively completed as required. Flood storage will be provided within the South Block basin. Additional pumps installed at the South Block pumpstation:

Stage 6: South Block Pump Station will have an additional 2.5m³/s upgrade, giving a total capacity of 5.3m³/s

Stage 8: South Block Pump Station will have an additional 2.5m³/s upgrade, giving a total capacity of 7.8m³/s

3.9.2.5. Stage 9 - 11

South Block construction begins, as well as reticulation and wetland swales for conveyance and treatment. Additional pumps are progressively installed in the South Block pump station as follows:

- Stage 9 South Block Pump Station will have an additional 2.5m³/s upgrade, giving a total capacity of 10.3m³/s
- Stage 11 The final 2.5m³/s pump will be installed, completing 12.8m³/s total pump station capacity

3.9.2.6. Stages 12 - 16

Reticulation and wetland swale construction progresses, completing South Block infrastructure with the completion of Stage 16.

3.9.2.7. Stages 17 – 18

Final development of stormwater infrastructure in the North Block.

This development and staging is to be implemented in accordance with recommended consent conditions (see Appendix AD).

3.9.3. Water-sensitive Design

The scale of the Wairakei South Development represents an opportunity to achieve an integrated and large-scale water-sensitive design outcome.

Water-sensitive design seeks to use natural processes to manage runoff, such as biofiltration swales and constructed wetlands that filter contaminants, attenuate flows, and enhance urban amenity. It also seeks to minimise runoff volumes by managing the extent and distribution of impervious surfaces within the catchment.

Wairakei South achieves a sustainable water-sensitive design outcome through low- to medium-density urban development supported by an extensive network of green swales and wetlands, providing a high level of stormwater treatment for both the site and the broader upstream catchment. These swale networks are distributed throughout the residential and employment areas, where they also provide passive amenity, landscape structure, and recreational opportunities, reinforcing the integration of stormwater infrastructure with open space outcomes.

3.9.4. Primary System

The primary stormwater system integrates roof drainage, surface runoff, kerb and channel flow, and underground reticulation to provide a continuous conveyance path for minor storm events to downstream stormwater infrastructure, as shown in Figure 32 below

Figure 32: Proposed Stormwater Overview Plan (refer Appendix D)

The primary stormwater system for the development has been sized to convey runoff generated by a 10-year ARI design event, corresponding to a rainfall intensity of 139 mm/hr. The concept design adopts an estimated average impervious coverage across the proposed residential, commercial, and employment areas, as outlined in the Stormwater Management Plan (see Appendix G).

Within residential lots, roof runoff is collected via individual downpipes and directed through private drainage to a single point of discharge for each lot. Runoff generated from remaining open-to-sky areas within residential lots, including grassed surfaces and paved or concreted areas, is assumed to drain via sheet flow toward the adjoining road reserve. This runoff is combined with sheet flow from the road reserve and conveyed along the kerb and channel system to downstream stormwater catchpits.

For commercial and industrial lots, both roof runoff and overland flow generated within the lot boundaries are assumed to be captured internally and conveyed to a single point of discharge. Each commercial or industrial lot discharges directly to the underground stormwater reticulation network.

Piped reticulation discharges to internal wetland swales via wingwall outlets. Inverts for outlet pipes have been set at the 10% AEP storm event water surface elevation, derived from Maven's post-development stormwater model that has been independently reviewed by Awa Environmental, as requested by BOPRC, and no surcharge is expected up to the 10% AEP storm. To avoid contaminants the use of inert roofing and cladding materials for buildings is proposed through consent conditions (see Appendix AD).

3.9.5. Secondary System

The secondary stormwater system provides for the conveyance of runoff during storm events that exceed the capacity of the primary piped system. It is formed by defined overland flow paths, primarily utilising the road network, service corridors, and downstream open drainage features, as illustrated in Figure 33 below.

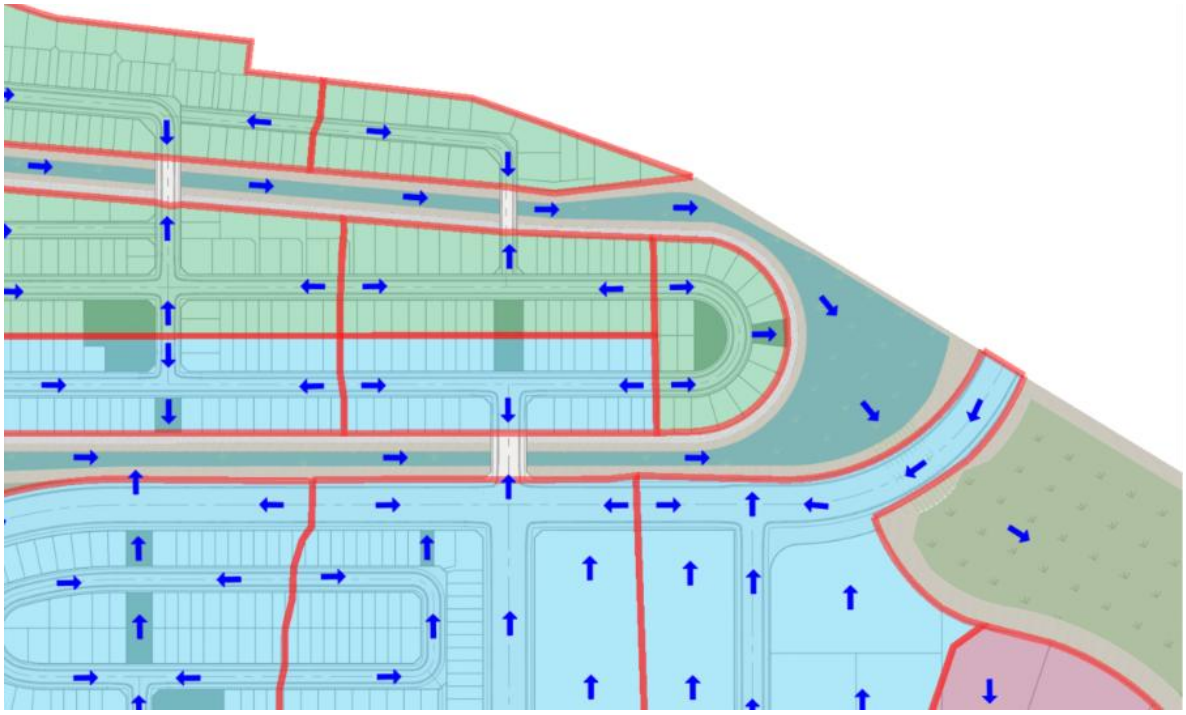


Figure 33: Overland Flows (Source: From Drawing C450-1 in Appendix D)

Most roads within the Development are configured as dual carriageways, comprising one traffic lane in each direction with a dual crossfall and kerb and channel provided on both sides. The Development is located predominantly over a fill platform, with the road network constructed to a minimum longitudinal grade of 0.5%, enabling effective overland flow conveyance.

During storm events exceeding the capacity of the primary system, surcharge of the underground reticulation network is expected to occur. For storm events greater than the 10-year ARI, excess runoff is conveyed via the secondary system, with road surfaces acting as the primary overland flow paths. The road network has been configured to direct flows downstream and prevent inundation of adjacent lots and building platforms.

Overland flow channels and secondary flow paths have been designed to safely convey storm events up to the 10-year ARI.

Road corridor and service corridor conveyance capacity has been assessed assuming the primary piped network is fully blocked and that all runoff is conveyed via overland flow paths. Under this scenario, stormwater is directed and contained within road and service corridors, which function as the secondary conveyance route for major storm events.

Road overtopping of the verge is not anticipated under the design storm conditions. At localised low points where flood depths exceed kerb height, defined and controlled overland flow paths are

provided to ensure runoff is conveyed safely to downstream treatment swales without adverse effects.

3.9.6. Attenuation & Retention

The site receives significant runoff from the upstream catchment. During both minor and major storm events, this currently floods the entire site and adjacent rural land. In the same events, water levels in the Kaituna River rise above the flood levels at Bell Road.

The proposed Development displaces existing flood storage within the floodplain. To address this, attenuation and pumping measures are proposed to achieve acceptable post-development flood levels relative to pre-development conditions, as demonstrated in the Infrastructure Report at Appendix F.

During minor storm events, external upstream runoff is diverted to a large stormwater attenuation area located in the southern portion of the Development, where flows are attenuated before being pumped to the Kopuaroa Canal. Internal runoff from the South Block during minor events is separated from external flows by stop banks and attenuated within internal wetland swales, which discharge to the southern attenuation area.

Internal runoff from the North Block functions in a similar manner, with wetland swales discharging to an attenuation area that releases flows beneath State Highway 2 via an existing culvert and pump station to the Kaituna River.

During major storm events, external runoff overtops the stop banks and combines with internal runoff, increasing the available attenuation volume across the site. This combined flood behaviour is illustrated in Figure 34 below.

Figure 34: Overland Flows (Source: Maven)

To address existing drainage constraints at Bell Road, additional pumping capacity is proposed adjacent to the existing Bell Road A Pump Station, increasing the current pumping capacity from 2.37 m^3/s to 8.37 m^3/s. A new pump station is also proposed at the southern end of the Development, with a capacity of 12.8 m^3/s.

Pump locations and discharge pathways are shown in Appendix D and Figure 35 (Stormwater Pump Locations) below. Suitable conditions have been proposed relating to the timing and works required to install the pump stations and their ongoing maintenance and management (see Appendix AD).

Figure 35: Stormwater Pump Locations (Source: Maven)

3.9.7. Quality Treatment

Stormwater quality treatment is to be achieved through constructed wetland swales distributed across the site. The wetland swales form the primary stormwater quality treatment devices for both the northern and southern development areas and have been designed in accordance with the Stormwater Management Guidelines for the Bay of Plenty Region.

The southern area is split into five catchments with each directing stormwater runoff to its own wetland swale labelled S1 to S6. These swales all flow to the south and discharge to a large basin area for extended detention. The northern area contains four catchment areas each with its own wetland swale for stormwater discharge. Swales N1, N2, N3 and N6 flow to the east and discharge to an extended detention area. Swale N5 directs flows from its contributing catchment to the south before discharging to a larger conveyance channel north of Bell Road. The swales and catchment areas can be seen in Figure 36 below. Suitable consent conditions have been proposed which relate to the construction, maintenance and operation of the swales (see Appendix AD).

Figure 36: Water Quality Catchments (Appendix D)

The wetland swales are designed to treat the full water quality flows (WQF) from the developed catchments, while also providing conveyance and flood storage capacity for larger storm events. All swales are trapezoidal in shape and planted with appropriate species in accordance with the regional guidelines, with the base and lower batters planted to remove the requirement for mowing. Upper batters remain unplanted to allow for maintenance access where required.

Swale dimensions vary across the site; however, a typical swale cross-section is shown in Figure 37 below.

Figure 37: Typical Swale Profile (Source: Boffa Miskell)

Typical Swale Cross Section Detailed dimensions for individual swales are provided in Table 4 of the Maven Infrastructure Report (see Appendix F). Further 3D profiles of the swale corridors are also provided in the Boffa Miskell Subdivision Consent Landscape Package (see Appendix E).

3.9.8. Ongoing Maintenance Requirements

The stormwater management system for Wairakei South has been designed to achieve effective performance outcomes while maintaining practical and manageable long-term maintenance requirements, having regard to the ultimate scale and population of the development.

Stormwater infrastructure will require a range of ongoing maintenance activities over its operational life. Operation and maintenance manuals will be prepared during the detailed design phase, in consultation with the relevant authorities, to clearly define inspection, maintenance, and performance requirements.

It is intended that the stormwater pipe network, flood management bunds and embankments, and wetland swale network will be vested to Western Bay of Plenty District Council, to be maintained under standard Council maintenance regimes.

Stop banks and pump stations will be vested to, and maintained by, Bay of Plenty Regional Council (BOPRC). Operation and maintenance manuals for these assets will be provided on completion to support long-term operational reliability and flood resilience. Suitable consent conditions have been proposed which relate to the maintenance of the stormwater management system (see Appendix AD).

3.10. WASTEWATER MANAGEMENT

Wastewater generated from the development is proposed to discharge to the Te Puke Wastewater Treatment Plant, located approximately 8 kilometres south of the site. The overall wastewater strategy is designed to service the full development area and integrate with the existing regional wastewater network, while allowing for staged delivery as the development progresses.

The proposed wastewater system consists of gravity wastewater reticulation, multiple on-site pump stations, and a dedicated rising main network conveying flows to the Te Puke Wastewater Treatment Plant. The overall configuration of the wastewater network is illustrated the Engineering Drawings at Appendix D and in Figure 38 below, which shows an overall diagram of the wastewater network.

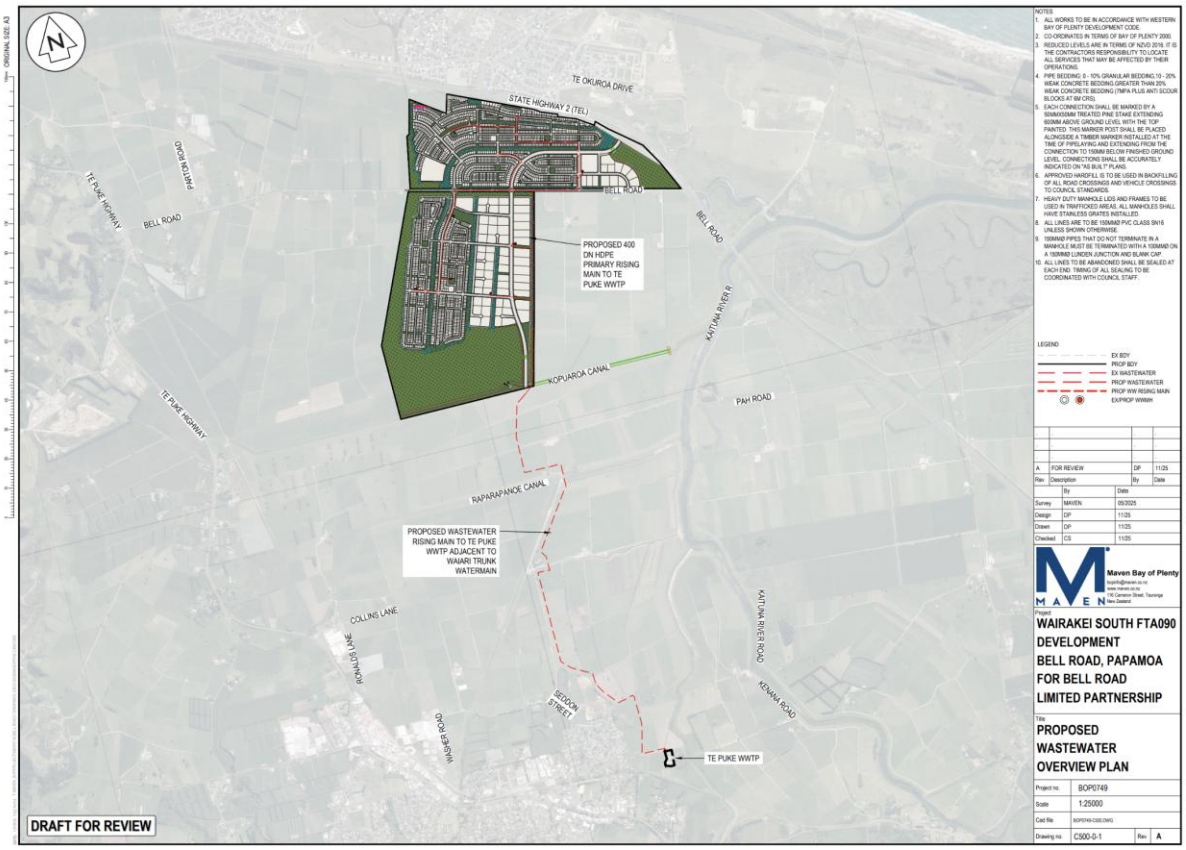


Figure 38: Wastewater Overview Plan (Drawing C500-0-1, Appendix D)

3.10.1. Piped Reticulation

Wastewater will be collected and conveyed via 150 mm diameter uPVC gravity wastewater mains. The reticulation network is designed to gravity feed into proposed pump stations, where flows will be pressurised for discharge via rising mains to the downstream wastewater treatment plant.

The gravity reticulation network and rising mains are designed to achieve self-cleansing velocities, in accordance with the Western Bay of Plenty District Council Development Code. The layout of the wastewater reticulation network is shown on Engineering Drawing C500 (Appendix D).

Wastewater infrastructure is primarily located within the formed road corridor, which provides an appropriate and efficient location for gravity operation, secure maintenance access, and coordinated

servicing. This approach minimises conflicts with water supply, stormwater, and other underground utilities, and supports long-term asset management.

3.10.2. Pump Stations & Pressure Systems

A total of eleven (11) wastewater pump stations are proposed across the development to service the various wastewater catchments. Each pump station will be fed by its respective local gravity wastewater network and will receive inflows via a dedicated 1200 mm diameter receiving manhole located immediately upstream.

Pump station design, including wet well sizing and emergency storage, has been undertaken with reference to the Western Bay of Plenty District Council Development Code DS11-Wastewater Pump Stations.

Each pump station will be located within a dedicated wastewater reserve, providing permanent vehicle access for maintenance. The pump station layout includes a minimum 5.0 m × 5.0 m area to accommodate a biofilter, with adequate space for maintenance vehicle access and turning. Control cabinets are positioned away from roadways to reduce risk and improve operational safety.

Wet wells are sized in accordance with WBOPDC DS-11.4.4, ensuring pump starts remaining below the acceptable limit of 15 starts per hour and providing a minimum operational water depth of 1.5 metres from the inlet pipe invert. Each pump station is proposed with a duplex pump system, with each pump sized to independently handle the peak wastewater flow from its contributing catchment. All fittings and materials comply with the relevant WBOPDC Development Code specifications.

Emergency storage is provided at each pump station and is sized to store nine (9) hours of wastewater flow, in accordance with WBOPDC DS-11.4.11. The proposed control system incorporates standard start, stop, and alarm levels to ensure reliable operation, and includes the necessary provisions for power supply and telemetry to enable remote monitoring. Pump stations are sited outside stormwater overland flow paths to reduce flood risk.

Pump station layouts, cross-sections, and configuration details are shown in the Engineering Drawings (Appendix D). Pump sizing calculations are provided in Appendix B of the Maven Infrastructure Report (Appendix F).

Wastewater from the individual pump stations will be conveyed to the Te Puke Wastewater Treatment Plant via a dedicated bulk rising main network. Individual rising mains from each pump station connect to a common DN400 bulk rising main, which conveys the total wastewater flow from the development.

The alignment of the proposed bulk rising main follows the corridor of the existing Waiāri trunk water main, optimising use of an established service corridor and minimising additional land disturbance. The rising main design incorporates scour valves, air valves, isolating gate valves, and maintenance junctions to support operational control and long-term maintenance. The bulk rising main has been sized to efficiently convey peak wet weather flows to the Te Puke Wastewater Treatment Plant.

3.10.3. Connection to Existing Network

The proposed wastewater system will connect to and discharge into the Te Puke Wastewater Treatment Plant. Western Bay of Plenty District Council (WBOPDC) have confirmed available connection capacity, both for the initial stages of development and for the full development build-out. WBOPDC are adopting a stepped approach integrated with the Te Puke Wastewater Treatment Plont (TPWWTP) upgrades:

- Stage 1 Upgrade: Provides capacity through to 2031 (approx. 600 residential lots and 2.15 ha of employment land).
- Stage 2 Upgrade: Extends capacity to 2038 (approx. 2,000 residential lots, 13.05 ha of employment land, and school).
- Long-term: Future servicing will integrate with the sub-regional wastewater solution managed under the Water Servies CCO (WSCCO) between WBOPDC and Tauranga City Council.

Any requirements or conditions arising from Council feedback regarding capacity, staging, or planned upgrades to the Te Puke Wastewater Treatment Plant will be incorporated into the detailed design and staging of the wastewater network.

3.11. WATER SUPPLY

A 560 mm OD polyethylene (PE) bulk water main is proposed along the western boundary of the South Block to connect into the existing Waiāri trunk water main, providing the primary potable water supply for the development. The internal water supply network has been designed as a looped reticulation system, improving supply reliability, operational resilience, and network redundancy.

The proposed water supply network has been designed to maintain a minimum residential working pressure of 300 kPa, provide sufficient capacity to meet peak potable demand, and accommodate firefighting supply requirements, in accordance with the Western Bay of Plenty District Council (WBOPDC) Development Code. The overall configuration of the proposed water supply network is illustrated in the Engineering Drawings at Appendix D and Figure 39, which shows an overall diagram of the water supply network.

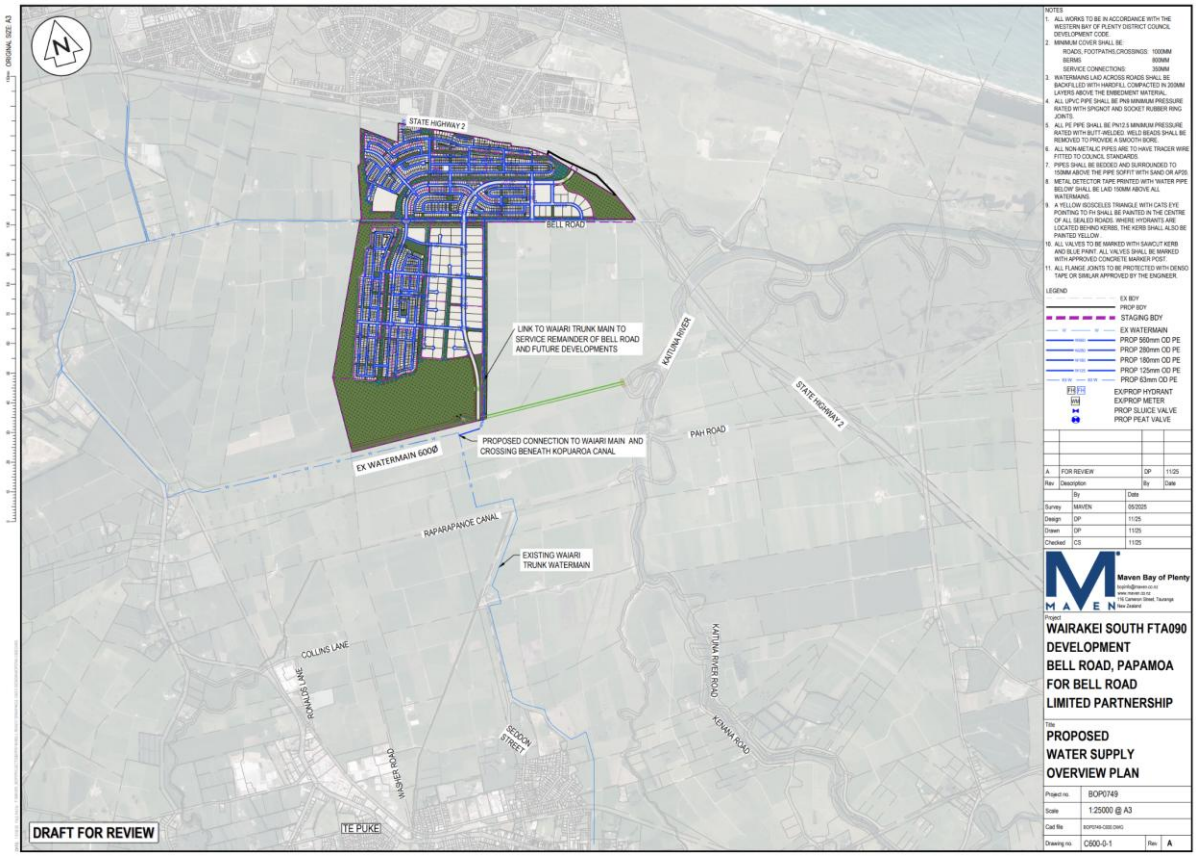


Figure 39: Proposed Water Supply Overview Plan (Drawing C600-0-1; Appendix D)

3.11.1. Potable Supply

The proposed potable water supply reticulation has been sized using EPANET hydraulic modelling to accommodate the equivalent demand generated by 2,729 residential lots, ensuring compliance with the WBOPDC Development Code requirements for capacity and pressure. The layout of the proposed reticulation network is shown on the associated water supply drawings included in Appendix D.

Potable water supplied to the development will be pre-treated by Council, and no additional on-site water treatment is required as part of the development.

3.11.2. Fire-fighting Supply

The minimum firefighting water supply classification required by the WBOPDC Development Code is in accordance with SNZ PAS 4509: New Zealand Fire Fighting Supply Code of Practice.

The proposed development is required to meet a Fire Water Supply Classification FW2, which includes the following requirements:

- A primary water flow of 25 L/s within a distance of 135 metres
- An additional secondary flow of 25 L/s within a distance of 270 metres
- The required flows to be achieved from a maximum of three hydrants operating simultaneously
- A minimum firefighting residential running pressure of 100 kPa

- A minimum working residential water pressure of 300 kPa

Within the industrial and commercial lots, the subdivision water supply network will provide FW2 firefighting coverage via fire hydrants, with hydrants spaced at 90 metres, achieving compliant access and coverage in accordance with SNZ PAS 4509.

Any firefighting requirements exceeding FW2 will be addressed at the Building Consent stage, through building-specific firefighting solutions such as on-site fire storage tanks, pumps, or sprinkler systems, as required.

3.11.3. Water Supply Modelling

The peak potable water demand for the proposed development has been calculated as 214.15 L/s, in accordance with the WBOPDC Development Code. A summary of the demand calculations is provided in Appendix C of the Maven Infrastructure Report (see Appendix F).

Hydraulic modelling of the proposed internal water supply network was undertaken using EPANET to assess system performance under critical loading conditions. The model adopted an available head of 50m at the point of connection to the existing Waiāri trunk water main, representing a conservative upstream supply condition.

The modelling confirms that the proposed network has sufficient capacity to service the full development, while maintaining minimum pressure requirements under both peak potable demand and firefighting scenarios, consistent with WBOPDC standards.

3.11.4. Connection to Existing Network

The proposed development water supply is intended to connect to the existing Waiāri trunk water main. Western Bay of Plenty District Council (WBOPDC) have confirmed available connection capacity, both for the initial stages of development and for the full development build-out:

- Waiāri Trunk Main: This remains the intended short and long-term solution, aligned with WBOPDC sub-regional strategy.
- Interim Solutions: WBOPC are currently investigating the augmentation of the Te Puke bore network to provide interim supply.
- Management: Connection and network utilisation will be staged and managed through specific consent conditions, development triggers, and the Private Development Agreement (PDA) between WBOPDC and BRLP.

3.12. UTILITIES

3.12.1. Power Supply

Power supply within the wider Bay of Plenty area is managed by Powerco.

Powerco has been engaged throughout the design process as both a neighbouring landowner and the local electricity network service provider, to confirm the availability of network capacity to service the Wairakei South development.

Powerco has advised that the existing overhead electricity network infrastructure along Bell Road can accommodate the initial servicing of approximately 600 residential lots, with network upgrades required to service the full development build-out.

Conditional approval and technical guidance have been provided by Powerco, and are included as Appendix D to the Maven Infrastructure Report (see Appendix F). Further details of engagement outcomes are documented in the Consultation Report prepared by Maven (see Appendix AB).

A new internal power supply network will be constructed within common service trenches located in the road reserves throughout the development. A point of supply will be provided to each lot created, with typical servicing arrangements illustrated on the common services drawings. Refer to Engineering Drawings C700 and C710 for further details (see Appendix F).

Formal electricity network design will be commissioned and provided at the Engineering Plan Approval stage.

3.12.2. Communication Supply

Tuatahi First Fibre (TFF) is the telecommunications network provider for the Bay of Plenty region. TFF has been engaged throughout the design process to confirm the availability and capacity of fibre telecommunications infrastructure to service the Wairakei South development.

TFF has advised that its fibre network is currently available within Pāpāmoa East, directly adjacent to the Tauranga Eastern Link Pāpāmoa East Interchange (TEL PEI), and that the network can be readily extended south to service the development site.

Conditional approval and technical guidance have been provided by TFF and are included as Appendix D to the Maven Infrastructure Report (see Appendix F), with further engagement outcomes recorded in the applicants Consultation Record (see Appendix AB).

A new internal fibre telecommunications network will be constructed within the common service trenches in the road reserves, with a point of connection provided to each lot created. Typical servicing arrangements are shown on the common services drawings. Please refer to the Engineering Drawings C700 and C710 (Appendix D) for further details.

Formal telecommunications network design will be commissioned and provided at the Engineering Plan Approval stage.

3.12.3. Gas Supply

Gas reticulation within the wider Bay of Plenty area is managed by Firstgas, who were consulted to confirm the availability and feasibility of providing a reticulated gas connection to the development.

Firstgas has advised that there is no existing reticulated gas infrastructure in the immediate vicinity of the site, and that extension of the network to service the development would not be practical. As an alternative, Firstgas has recommended that the development be serviced via individual bottled LPG systems.

Accordingly, no reticulated gas network is proposed as part of the development, and provision for gas will be managed on a lot-by-lot basis, with individual landowners responsible for determining and arranging their own energy supply solutions.

Evidence of consultation with Firstgas is provided in the applicants Consultation record (see Appendix AB) and included as Appendix D to the Maven Infrastructure Report (Appendix F).

3.12.4. Lighting

Lighting of public roads will be designed to comply with Western Bay of Plenty District Council and NZTA requirements, and the position of light poles is shown on the typical roading cross sections.

Further street lighting detail will be provided at Engineering Plan Approval stage.

3.13. EARTHWORKS

3.13.1. Proposed Earthworks

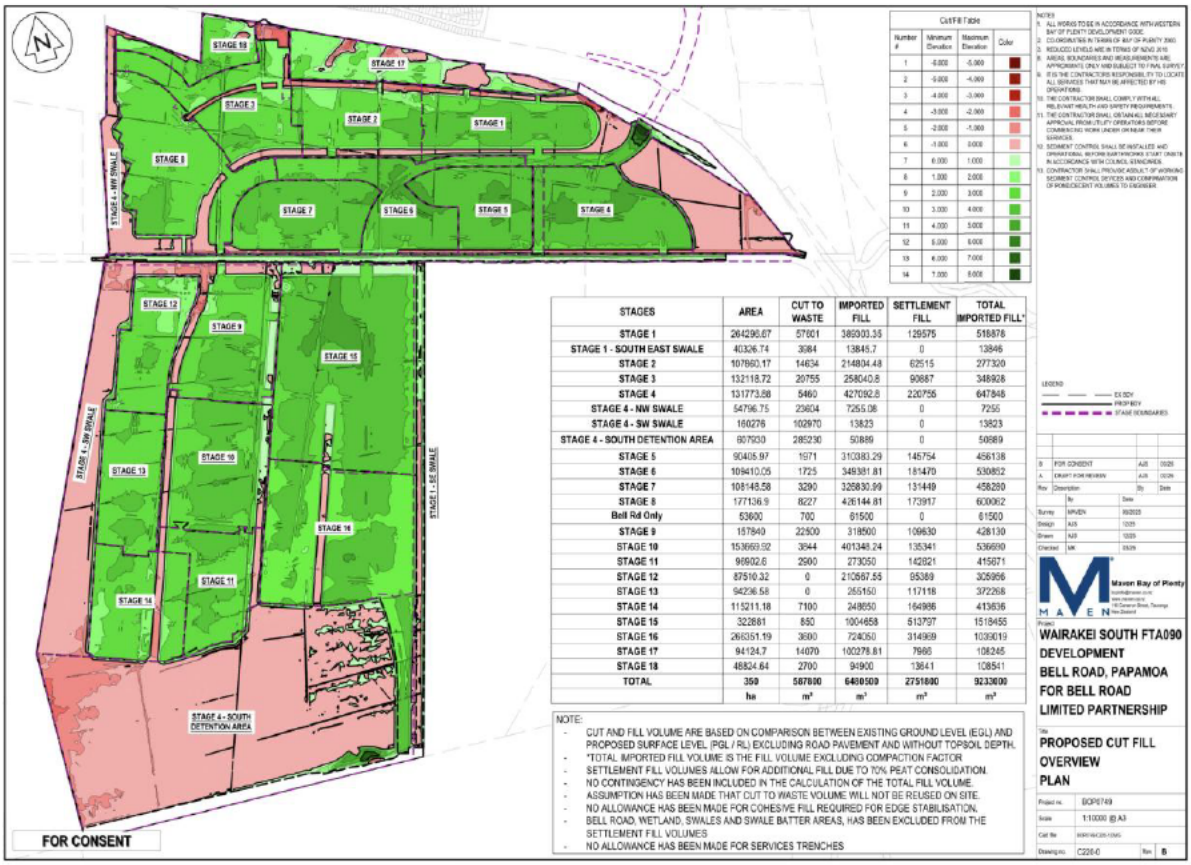
Significant earthworks are required to enable development of the site, including peat excavation, preload placement, and large-scale filling operations. Earthworks are proposed across the site, and will involve staged stripping of peat, importation of fill from off-site sources (generally via the PEI Interchange), and preload/surcharging construction using a combination of imported and site won sources.

Details of the proposed earthworks are provided in the Wairakei South Development Infrastructure Report (Appendix F) and the Earthworks Management Plan prepared by Maven (Appendix U).

The entire 349.12 ha site is proposed to be earthworked, with the earthworks footprint located within the Kaituna River catchment. To facilitate construction of the roading network and mitigate flooding risks associated with the low-lying terrain, the proposal includes culvert installations, swale drain upgrades, and stormwater works.

The proposed landform adopts a longitudinal ‘row and valley’ design philosophy, where development platforms and infrastructure are located on raised ‘rows’, and stormwater is directed laterally into lower ‘valleys’ for conveyance away from the site. This approach simplifies drainage design and directly informs the overall masterplan layout.

The Cut Fill Overview Plan is shown in Figure 40 below.



STAGES	AREA	CUT TO WASTE	IMPORTED FILL	SETTLEMENT FILL	TOTAL IMPORTED FILL*
STAGE 1	264296.67	57601	389903.35	129575	516878
STAGE 1 - SOUTH EAST SWALE	40326.74	3984	13845.7	0	13846
STAGE 2	107860.17	14634	214804.48	62515	277320
STAGE 3	132118.72	20755	258040.8	90887	348928
STAGE 4	131773.58	5460	427092.8	220755	647848
STAGE 4 - NW SWALE	54796.75	23604	7255.08	0	7256
STAGE 4 - SW SWALE	160276	102970	13823	0	13823
STAGE 4 - SOUTH DETENTION AREA	807930	285230	50889	0	50889
STAGE 5	90405.97	1971	310383.29	145754	456138
STAGE 6	109410.05	1725	349381.81	181470	530852
STAGE 7	108148.58	3290	325830.99	131449	458280
STAGE 8	177136.9	8227	426144.81	173917	600062
Bell Rd Only	53600	700	61500	0	61500
STAGE 9	157840	22500	318500	109630	428130
STAGE 10	153669.92	3944	401348.24	135341	536690
STAGE 11	96902.6	2900	273050	142821	415871
STAGE 12	87510.32	0	210867.55	95389	305956
STAGE 13	94236.58	0	255150	117118	372268
STAGE 14	115211.18	7100	248050	164986	413036
STAGE 15	322881	850	1004658	513797	1518455
STAGE 16	268351.19	3600	724050	314969	1039019
STAGE 17	94124.7	14070	100278.81	7966	108245
STAGE 18	48824.64	2700	94900	13641	108541
TOTAL	350	587800	6480500	2751800	9233600
	ha	m³	m³	m³	m³

NOTE:
- CUT AND FILL VOLUME ARE BASED ON COMPARISON BETWEEN EXISTING GROUND LEVEL (EGL) AND PROPOSED SURFACE LEVEL (PGL / RL) EXCLUDING ROAD PAVEMENT AND WITHOUT TOPSOIL DEPTH.
- *TOTAL IMPORTED FILL VOLUME IS THE FILL VOLUME EXCLUDING COMPACTION FACTOR
- SETTLEMENT FILL VOLUMES ALLOW FOR ADDITIONAL FILL DUE TO 10% PEAT CONSOLIDATION.
- NO CONTINGENCY HAS BEEN INCLUDED IN THE CALCULATION OF THE TOTAL FILL VOLUME.
- ASSUMPTION HAS BEEN MADE THAT CUT TO WASTE VOLUME WILL NOT BE REUSED ON SITE.
- NO ALLOWANCE HAS BEEN MADE FOR COHESIVE FILL REQUIRED FOR EDGE STABILISATION.
- BELL ROAD, WETLAND, SWALES AND SWALE BATTER AREAS, HAS BEEN EXCLUDED FROM THE SETTLEMENT FILL VOLUMES
- NO ALLOWANCE HAS BEEN MADE FOR SERVICES TRENCHES

Figure 40: Proposed Cut Fill Overview Plan (Source: Engineering Drawings (Appendix D))

The Engineering Drawings detail the extent of the proposed earthworks and associated erosion and sediment control measures. All earthworks will be undertaken in accordance with the recommendations of ENGEO's Geotechnical Interpretive and Assessment Report (Appendix P).

Table 8 below, provides a summary of the proposed works based on the earthwork modelling completed by Maven.

Table 8: Bulk Earthworks Volume Estimates

Item	Measure
Total area of ground disturbance	350 ha
Total volume of cut	591,200m^3
Total volume of fill	6,362,300m^3
Total volume of cut/fill (surplus)	6,362,300m^3
Total Preload Fill	2,751,800m^3
Total Volume (cut to fill + imported fill)	9,114,100m^3

The proposed earthworks volumes for each stage are described in the Earthworks Management Plan at Appendix U.

3.13.2. Stockpiling

The location, number, and final configuration of stockpiles will be determined on site by the contractor's nominated geotechnical engineer, having regard to site conditions, construction staging, and safety requirements. It is anticipated that stockpiles will be up to 3.0m in height, with side slopes no steeper than 1V:2H, unless otherwise approved.

Temporary stockpiles expected to remain in place for less than three months will not require stabilisation unless there is a demonstrable erosion risk. Where stabilisation is required, hydroseeding, geotextile covers, or other suitable methods will be used.

All stockpiles will be located outside a 100-metre buffer from identified wetlands and drains. Topsoil and subsoil will be stripped and stockpiled separately, and all stockpiling and reuse activities will follow good practice soil management procedures.

Stockpiling and material reuse will be tracked using GPS records or site logs to confirm material origin, volumes, and placement locations for inclusion in the final Earthworks Completion Report.

3.13.3. Earthworks Staging

Bulk earthworks are proposed to be undertaken across eighteen stages, with each stage completed independently, as shown on the earthworks staging plans.

Earthworks will commence at the PEI edge within the North Block and progress generally east to west through Stages 1 to 8. Once the North Block is developed, earthworks will proceed into the South Block, starting in the northern section and progressing south through Stages 9 to 16. Stages 17 and 18 within the North Block will be undertaken as final stages.

Earthworks are intended to be undertaken in the following sequence:

- Install silt control measures, as shown on Engineering Drawings or agreed plan provided at Preconstruction meeting.
- Install sediment retention ponds, clean and dirty water diversion bunds.
- Carry out Bulk Earthworks including pre-loading.
- Install drainage systems, outlets, and riprap.
- Form channel and building platform areas concurrently as site is stabilized.
- Stabilise Road corridors by placing the subgrade improvement layer of brown road ready for civil construction to place.
- Retain and maintain silt control measures until completion.

The rate of earthworks progression will be influenced by land release and sales demand, with the overall earthworks programme expected to extend over approximately 15 to 20 years.

3.13.4. Retaining Walls

The earthworks and landform design generally avoids the need for retaining walls, with only limited localised retaining required near existing boundaries and road corridors, as shown on the earthworks

drawings (see Appendix D). All retaining walls will be built at the time of subdivision and walls will be subject to detailed design and Building Consent approval at a later stage.

3.13.5. Erosion & Sediment Control

The Engineering Drawings detail the proposed erosion and sediment control measures to be employed to manage the effects of earthworks. A Draft Earthworks Management Plan prepared by Maven (Appendix U) forms part of the application and outlines the erosion and sediment control methodology for the project.

All erosion and sediment controls will be implemented in general accordance with the Bay of Plenty Erosion and Sediment Control Guidelines for Land Disturbing Activities (2010/01), Auckland Council GD05, and industry best practice.

The site will be progressively stabilised using topsoil, clean aggregate, mulch, seeding, or compacted subbase as earthworks are completed. Sediment control measures will remain in place until the site is deemed stable by Council and/or the Site Engineer.

The proposed erosion and sediment control philosophy for this site is as follows:

- Bulk earthworks are to be completed during suitable (fine or dry) weather, to limit the risk of erosion and sediment runoff.
- Stabilised entranceways are to be installed at all entrances into the site that will be used for construction traffic and are to be maintained throughout construction. If required wheel washes should be installed to ensure material is not tracked onto public roads.
- Existing features shall be used to manage run-off where practical.
- Where possible, clean water diversions bunds are to be placed on the high side of the earthworks area, clean stormwater runoff shall be diverted away from site works and other environmental controls.
- Dirty water diversion drains and bunds shall along the low side of the catchment areas will collect any peripheral runoff and direct it to temporary sediment retention ponds located in natural low-lying areas.
- The temporary sediment retention ponds located within each sub-catchment shall capture the dirty water. Each pond will be adequately sized spillway design as per council guidelines.
- All temporary stockpiles shall have silt fencing installed around the base. Clean water diversions will be required if clean runoff would otherwise drain through stockpile zones.
- Silt fencing will be placed along contours to intercept sediment laden sheet flows.

Prior to commencement, erosion and sediment controls will be reviewed having regard to design, season, ground conditions, and catchment characteristics.

The spatial extent and staging of erosion and sediment control measures across the site are illustrated on the Proposed Sediment and Erosion Control Overview Plan as shown in Figure 41 below.

Given the lands relatively flat low energy environment, normal erosion and sediment control measures have been adopted and are recommended as conditions of consent (see Appendix AD).

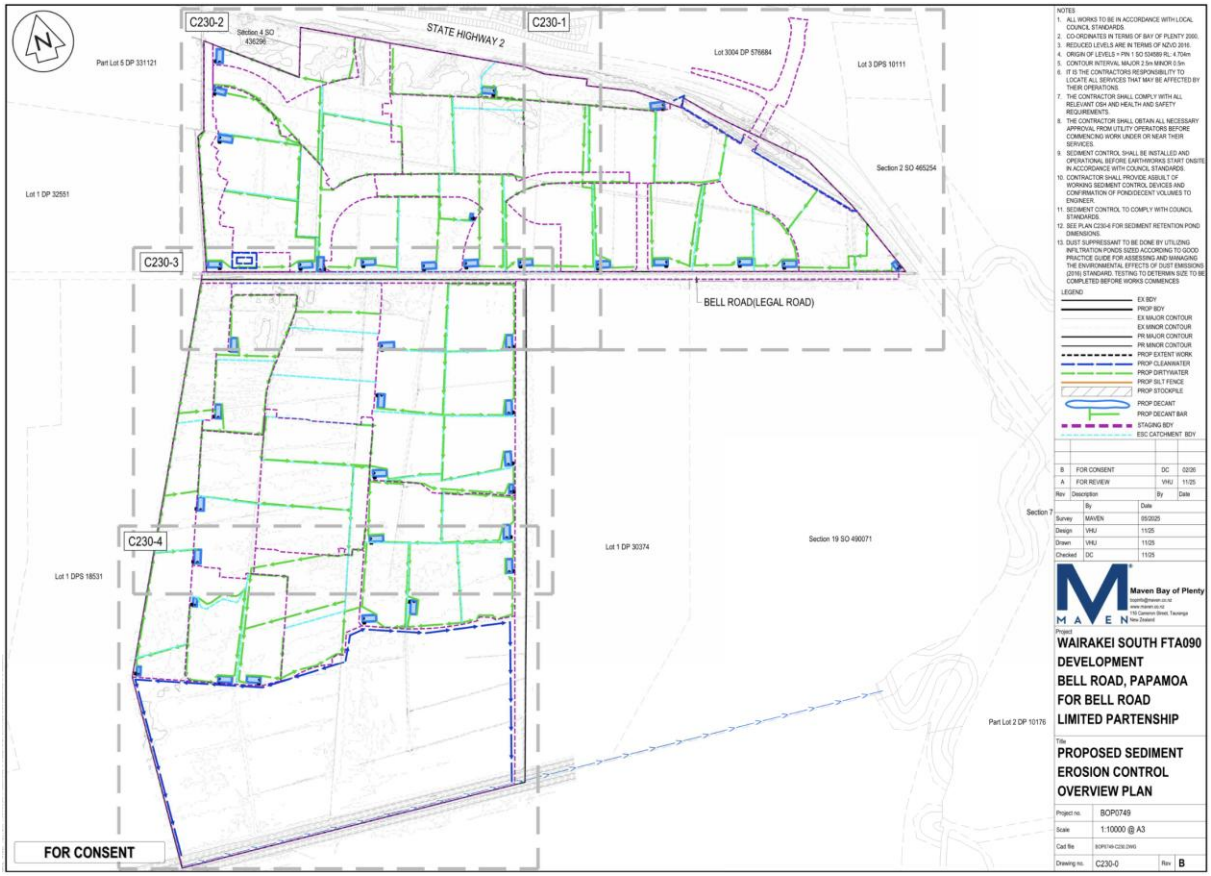


Figure 41: Proposed Sediment Erosion Control Overview Plan (Source: Engineering Drawings (Appendix D))

Monitoring and maintenance of all sediment control measures will be undertaken to ensure they are performing as intended. Specific monitoring and maintenance of each mitigation method is included in the Earthworks Management Plan (Appendix U).

3.13.6. Dust Control

Dust control will be undertaken on an as-required basis to minimise the generation of dust and potential nuisance effects on neighbouring landowners and the surrounding environment. Dust management during construction will be undertaken in general accordance with the MfE Good Practice Guide for Assessing and Managing the Environmental Effects of Dust Emissions (2016).

To control the generation of dust, the contractor will ensure that exposed soils are regularly dampened using appropriate misting systems, including water carts and/or portable spray units, particularly during dry and windy conditions.

To manage potential dust effects, the following management measures are proposed:

- The area exposed for earthworks will be minimised where possible, in accordance with the earthworks staging described in this report.

- Upon completion of earthwork areas, stabilisation using the following methods to provide dust suppression.
- Topsoiling and grassing.
- Hydroseeding.
- Using hay or straw mulching.
- Metaling roads, laydown areas and pads.
- Water carts (where required).
- Stabilisation work shall be completed prior to the opening of any subsequent earthworks.
- The consent holder will ensure that an adequate supply of water for dust control and effective means of application is always available on-site during earthworks, until such time as the earthworks area is fully stabilised.
- Where wind conditions make effective dust control impracticable, earthworks activities generating airborne dust will cease until conditions improve or additional controls are implemented.
- If standard measures are insufficient, additional controls such as soil binders, polymers, or temporary surface covers will be used where practicable.

Dust control measures will be monitored daily by the contractor, with controls adjusted as necessary to ensure dust does not migrate beyond the site boundary. The Site Manager will undertake weekly inspections of dust management measures, in conjunction with erosion and sediment control inspections, to confirm their ongoing effectiveness.

The Site Manager will also monitor available water in water take ponds and, where necessary, implement alternative dust suppression methods or temporarily suspend works.

It is proposed to source the water for dust suppression from infiltration ponds/galleries given the high-water table in the area. These will be constructed to hold sufficient water to meet the Good Practice Guide for Assessing and Managing the Environmental Effects of Dust Emissions (2016) standard for each stage. The Hydrogeologist confirms that the infiltration rate between 1l/s and 10l/s can be expected. Tests shall be undertaken before works commence to adequately size the required pond/gallery or series of ponds/galleries for each stage to meet the daily water required. If the water supply is interrupted during construction, works are to temporarily stop until alternative sources of water are found. A method of dust suppression, such as a water cart, shall be available onsite at all times to ensure dust is not transferred outside of the site boundaries. Suitable consent conditions relating to the management of dust effects have been included in the recommended conditions of consent (see Appendix AD).

3.13.7. Archaeology

There are no archaeological sites recorded on the land, however there is always the potential for unrecorded and previously unknown archaeological sites to be discovered through the earthworks phase of the project. For this reason, the applicant is adopting a precautionary approach, and a General Authority has been sought to enable the destruction of any unrecorded archaeological sites

should these be encountered. Suitable consent conditions have been recommended in relation to the management of any sites, should they be found, including Cultural monitoring and conditions which deal with matters such as Koiwi. A set of consent conditions relating to the Archaeological Authority sought are included as Attachment AD.

3.14. CONSTRUCTION MANAGEMENT

The Draft Construction Management Plan (**DCMP**; Appendix AL) sets out the actions, mitigation measures, key personnel, and monitoring requirements across all facets of the construction phase of the Project. This includes, but is not limited to, erosion and sediment control, dust control, noise and vibration management, traffic management, and ecological management.

The DCMP is intended to provide a practical, site-focused management framework for construction personnel. More detailed technical background and supporting information is provided in the Earthworks Management Plan (Appendix U), Stormwater Monitoring Plan (Appendix AI) and the Construction Management Plan (Appendix AL).

The Project will be delivered through multiple construction contracts over time. Accordingly, the DCMP identifies the key construction management principles and requirements applicable across all stages of the Project, including:

- Staging and Construction Methodology.
- Administration Requirements.
- Site Inductions.
- Hazard Minimisation and Environmental Incident Protocols.
- Construction Management.
- Environmental Management.
- Construction Effects & Mitigation Measures.

The scope of work will be finalised and updated once the contractor is selected. The provision of final Management Plans is also the subject of suitable proposed consent conditions (see Appendix AD)

3.14.1. Site Access, Control & Security

As outlined in the DCMP, the appointed contractor(s) will finalise the fencing and security plan for each stage of works. Temporary fencing with lockable gates will be installed around active construction areas as staging progresses.

The site access and delivery plan will be prepared by the contractor and will define approved access points, delivery routes, and internal circulation. Site amenities, signage, and notification procedures will also be confirmed by the contractor upon appointment.

Onsite parking will be provided within designated areas, and contractor parking will not be permitted on local roads or public parking spaces. The contractor will finalise and implement a site-specific parking management plan.

Construction access is anticipated to be initially via Bell Road, with access arrangements varying as staging progresses. Access points will incorporate appropriate security measures, including gates and controlled entry.

The contractor will ensure that all buildings, vehicles, tools, materials, and equipment are secured to prevent unauthorised access. Specific security measures (including padlocks, fencing, and surveillance where required) will be confirmed once the contractor is appointed.

3.14.2. Traffic & Public Safety

Traffic and public safety measures will be finalised by the contractor in accordance with the DCMP and the Construction Traffic Management Plan. During construction, the contractor will ensure that all affected public roads, car parks, and footpaths are kept clean, safe, and free of obstructions.

A site-specific Traffic Management Plan (**TMP**) will be prepared and implemented to manage construction vehicle movements, pedestrian safety, and temporary traffic diversions. This will include appropriate signage, barriers, and pedestrian management measures to always ensure public safety.

3.14.3. Construction Noise, Vibration & Construction Disturbance

The nearest residential dwellings are located to the north of State Highway 2. To minimise noise and disturbance effects, the contractor will:

- Identify potential disturbances and develop a mitigation plan.
- Consult with neighbours to discuss construction activities and share the timing and expected impacts.
- Notify stakeholders about construction hours and provide contact details for the Site Manager.

Construction hours will generally be 7:30 am to 6:00 pm, Monday to Saturday, with restrictions on the use of operating machinery and power tools before 8:00 am and after 5:00 pm, unless otherwise authorised. Suitable consent conditions have been recommended in relation to Construction noise and vibration standards which will be required to be met (see Appendix AD).

3.14.4. Waste & Rubbish

Construction waste has the potential to create environmental effects and nuisance if not appropriately managed. Each contractor will prepare a site-specific Waste Management Plan outlining measures to minimise waste generation and maximise reuse and recycling.

The disposal of waste from the site will be minimised through prioritising reuse and recycling wherever practicable. Separation and segregation of waste will be promoted both on-site and off-site to enable reuse and recycling as a core component of the waste management program including:

- On-site waste segregation**,** whereby waste materials (including demolition waste and spoil) will be separated into designated areas for collection by a licensed waste contractor and transported to licensed off-site facilities.

- Off-site waste separation, where space or site constraints prevent effective separation on-site, with waste sorted at a suitable off-site facility by the waste contractor.
- Cardboard and paper will be recycled.
- Materials that cannot be reused or recycled will be handled and disposed of appropriately

The Site Contractor will prioritise the reuse of vegetation waste wherever practicable to minimise the volume of material requiring off-site disposal. Opportunities for off-site reuse, such as transport to nearby environmental recovery projects or provision to Councils or businesses, will be explored to further divert waste from landfill.

Any vegetation waste containing invasive or noxious weed species will be disposed of appropriately to minimise the risk of spreading plant material to other areas. Refuse transfer stations and approved green-waste facilities capable of managing weed-contaminated material will be utilised where required.

Where waste is required to be temporarily handled or stored on-site prior to reuse or off-site recycling or disposal, the following measures will apply:

- All recyclable and non-recyclable waste will be stockpiled in designated and appropriate on-site locations, with licensed contractors engaged to remove waste at regular intervals to approved recycling or disposal facilities.
- Spoil, topsoil and mulch are to be stockpiled on-site in allocated areas where appropriate dust control and surface water management mitigation measures will be implemented with reference to the contaminated site management plan requirements.
- Liquid wastes are to be stored in appropriate containers in bunded areas until transported offsite. Bunded areas will have the capacity to hold 110% of the liquid waste volume for bulk storage, or 120% of the volume of the largest container for smaller packed storage.
- Where waste is stockpiled, waste is to be appropriately divided into their respective waste streams.

Waste that is unable to be reused or recycled will be disposed of at a licensed landfill or waste disposal facility. No waste will be disposed of onsite.

3.14.4.1. Oil & Fuel Spills

All hazardous substances stored on site, particularly overnight, present a risk of unintentional discharge with the potential to cause significant environmental harm. Both appropriate bunding and site security measures will be implemented to manage these risks.

At the time construction contracts are awarded, the appointed contractor will prepare and provide a comprehensive Chemical Treatment Plan for review and acceptance by the Project Engineer.

The rapid, careful, and effective containment and clean-up of any spill is critical to reducing the risk of contaminants entering receiving environments, including waterways and stormwater systems.

Spill response materials will be provided and maintained as follows:

- Spill kits will be appropriate to the nature of site activities and the hazardous substances being used or stored**,** and suitable for the location of works.
- Hydrocarbon-absorbing floating booms and absorbent pads will be located at all high-risk areas adjacent to, or over, waterways to allow immediate deployment in the event of a spill.
- Spill response kits will be located at areas of elevated spill risk and within construction vehicles (e.g. trucks and utes) and will be checked for completeness and suitability at least on a monthly basis.

Spill response procedure will include the following:

- All personnel must immediately notify their Site Supervisor of any spill or incident involving hazardous substances, regardless of size.
- Minor spills (e.g. <5 L) may be cleaned up easily using a spill kit, shovel and plastic bag if on land however even small spills over waterways can have a larger effect and should be treated as a “major spill” pending satisfactory clean-up/resolution.
- Major spills (e.g. >5 L) or directly into a Waterway or stormwater system must be controlled and cleaned up in accordance with the following procedures which outline the spill response process and include emergency contact numbers.

The Site Manager must be notified immediately of any major spill or incident involving hazardous substances via the relevant Supervisor.

The BOPRC will be notified of any major spill or incident with the potential to pollute or impact the environment. For urgent incidents, the contractor will contact 0800 884 883. For non-urgent spills, notification will be completed using the Council’s online reporting system.

3.14.4.2. Hazardous Waste Disposal

Hazardous waste will be managed and disposed of in a safe, controlled, and compliant manner. All hazardous waste generated during construction will be handled and removed from site by a licensed waste contractor.

Hazardous waste will be stored in clearly labelled, separate containers on site and will include, but is not limited to:

- Chemicals.
- Fuel.
- Cleaning products.
- Oily rags.
- Filters.
- Lead-acid or Nickel-cadmium batteries.
- Asbestos containing products.

Hazardous waste storage areas will be appropriately bunded, secured, and located away from sensitive environments where practicable.

Tracking requirements apply to certain hazardous substances, including explosive, highly flammable, oxidising substances, and some poisons. The WorkSafe hazardous substances calculator will be used to determine whether any hazardous waste streams require tracking, and all tracking and documentation requirements will be complied with where applicable.

3.14.5. Contaminated Soils

The presence of discoloured soils, staining, odours, fibrous material (such as presumed asbestos-containing material), or general refuse may indicate potential contamination. If any such indicators are encountered during construction, immediate steps will be taken to manage the situation in accordance with the procedures set out in the recommendations contained in the ENGEO Contaminated Site Management Plan (**CSMP**) (see Appendix AK).

Any material identified as contaminated, or suspected to be contaminated, as part of the unexpected contamination procedures will be excavated and loaded directly onto trucks by the contractor for off-site disposal at a licensed disposal facility or site approved to receive such material.

Where immediate off-site disposal is not practicable, contaminated or suspect material will be temporarily stockpiled and managed in accordance with the procedures outlined in the ENGEO CSMP, including appropriate containment, signage, and environmental controls.

3.14.6. Ecological Management

An Ecological Impact Assessment (**EIA**) has been prepared by Ecological Solutions (Appendix L). All works within the site will be undertaken in accordance with the recommendations, mitigation measures, and methodologies set out in that assessment.

3.14.7. Cultural Heritage

Prior to works commencing on site, mana whenua will be notified of the commencement of works invited to offer a karakia over the site and the proposed works.

As part of site inductions, all staff and visitors will receive cultural training, including on cultural heritage awareness and discovery protocols.

The project is seeking an Authority to manage the potential for unrecorded archaeological sites, and as such, all works on this Project will be undertaken in accordance with the project's obligations under the Heritage New Zealand Pouhere Taonga Act, 2014 (HNZPTA). Cultural monitoring during earthworks has been recommended by Te Kapu ō Waitaha as part of their Cultural Impact Assessment (**CIA**). If any items of significance are unexpectedly found during ground disturbing activities, Discovery Protocol and a number of recommended conditions will be adhered to (see Appendix AD).

3.15. GROUNDWATER

3.15.1. Changes Under Existing and Post Development Scenario

The assessment of long-term groundwater levels and gradients was undertaken by ENGEO through comparison of simulated conditions prior to and following development (refer to the Hydrogeological

Assessment in Appendix R). Winter 2025 groundwater head data were adopted as the baseline dataset to assess changes in groundwater gradients associated with the proposed development.

The results of this assessment are presented in side-by-side piezometric surface maps included in Appendix 1:4 of Appendix P (Geotechnical Interpretive Report), illustrating differences in groundwater levels and gradients between pre- and post-development scenarios. Simulated groundwater surface levels show an increase in groundwater head beneath the developed areas, while remaining below finished design surface levels. The highest simulated groundwater heads are approximately RL 1.5 m NZVD in the northern block and RL 1.3 m NZVD in the southern block.

At the macro scale, the regional groundwater gradient remains unchanged across the model domain, including the Pāpāmoa dune area. Groundwater continues to generally flow towards Bell Road and eastwards towards the Kaituna River. At a micro-scale, groundwater gradients within the proposed bulk fill platform areas are redirected toward the post-development swale network, replacing flows previously directed toward existing farm drains that will be infilled as part of the platform development. This represents a minor localised shift in groundwater gradients.

Three-dimensional modelling indicates localised groundwater mounding along the northern boundary, with simulated heads reaching up to RL 2.1 m NZVD, which remains approximately 1 m below the finished design surface level. This outcome is considered conservative, given the simplified geological assumptions applied within the model domain.

Groundwater levels within the filled platform exhibit a slower response to seasonal rainfall variations compared to peat soils, reflecting lower infiltration rates. Groundwater levels in the fill respond more strongly to sustained moderate rainfall events than to short-duration, high-intensity rainfall.

Appendix 1:5 of the Hydrogeological Assessment presents a groundwater drawdown and mounding plan based on winter 2025 groundwater levels, highlighting pre- and post-development changes in groundwater head and flow. This shows localised mounding of up to 0.8 m where existing drains are infilled for platform construction, and drawdown of up to 1.6 m at the location of the southern attenuation pond.

To assess the potential for groundwater drawdown induced consolidation effects beyond the site boundary, ENGEO prepared a supplemental groundwater drawdown assessment using summer groundwater levels, on the basis that consolidation within the seasonal groundwater range is assumed to have already occurred. Results compared to summer levels are shown in Appendix 1:6 and discussed in Section 9.1 of Appendix P.

Beyond the site, drawdown is modelled to occur at three locations as a result project works. These locations are:

- West of the southern attenuation pond, where a drawdown of approximately 0.5 m is modelled at the site boundary, with the 0.1 m drawdown contour extending approximately 160 m westward over similar farmland.
- In the north-west corner of the site, where groundwater drawdown results from the new swale being approximately 0.2 m deeper than the existing farm drain, increasing to approximately 0.5 m near the underpass. The 0.1 m drawdown contour extends beneath the TEL in this location.

- In the north-east of the site, where drawdown is associated with excavation of the stormwater pond to an invert level of 0.4 m NZVD. Groundwater was observed at this level during monitoring, and no drawdown relative to summer low groundwater levels is expected, although a 0.5 m drawdown relative to winter levels is modelled. The 0.1 m drawdown contour extends approximately 180 m.

Given the potential for groundwater drawdown to extend beyond the site boundary, a Groundwater Management Plan is recommended to be prepared prior to commencement of works, consistent with industry standard practice. The plan will define monitoring requirements and management responses to ensure groundwater levels remain within the assessed envelope of effects identified in the ENGEO Hydrogeological Assessment (Appendix R), and to avoid intolerable deformation of nearby structures or infrastructure.

3.15.2. Groundwater Flow

Groundwater flow budgets form a key component of understanding subsurface water movement, particularly in the context of land development and integration with stormwater systems. A critical consideration for the Wairakei South area is quantifying post-development groundwater discharge to swales, to ensure this contribution is appropriately accounted for within stormwater design.

ENGEO (Appendix R) assessed that under post-development conditions, the groundwater flow budget decreases due to an estimated 57% reduction in net infiltration, reflecting increased impervious surfaces and altered drainage pathways. Both pre- and post-development simulations indicate that higher rainfall leads to increased drainage outflows, with groundwater storage acting as a buffer-releasing water during drier periods and absorbing recharge during wetter periods.

As a result of reduced infiltration, less groundwater discharges via drains in the post-development scenario, with a greater proportion of water managed as surface runoff within the stormwater system. Peak discharge via drains is reduced by approximately 40% under post-development conditions.

The volume of water exchanged with groundwater storage is further moderated by the lower permeability and porosity of compacted platform filling, relative to peat soils.

The effects of sea-level rise on the groundwater flow budget were also assessed. Results indicate that changes in groundwater flow within the site boundary are less than 1% relative to base-case conditions, consistent with negligible changes in groundwater levels onsite under sea-level rise scenarios. This outcome aligns with the site conceptual model, where groundwater behaviour is primarily controlled by drain elevations, which are assumed to remain largely unchanged.

3.15.3. Groundwater Level During Future Storm Events

To further evaluate the interaction between stormwater management features and the underlying pumice fill, a two-dimensional SEEP/W analytical model was developed by ENGEO (Appendix P). The primary objective of this modelling exercise is to assess whether elevated water levels (hydraulic heads) within the stormwater swales—particularly during extreme rainfall events such as a 1 in 100-year storm—have any appreciable effect on groundwater levels within the low permeability platform filling, particularly at locations spatially removed from the swale features.

The results of the SEEP/W model demonstrate a limited groundwater response to stormwater events, with only minor infiltration occurring in the immediate vicinity of the swales. The low hydraulic conductivity of the platform fill acts as a barrier, preventing significant recharge to groundwater even under high surface water conditions in the relatively short time frame of a 10-day rainfall event. Following storm events, both swale water levels and adjacent groundwater levels are simulated to rapidly return to baseline conditions, indicating that the risk of widespread groundwater daylighting due to one-off rainfall infiltration is low.

In summary, the SEEP/W analysis provides robust evidence that high water levels in stormwater swales during extreme rainfall events have a minimal influence on groundwater levels within the proposed filled development platform, except for small, localised increases near the designed swale systems. This supports the conclusion that the current stormwater management design is effective in mitigating potential impacts on the groundwater regime.

3.16. GEOTECHNICAL ASSESSMENT

3.16.1. Seismic Hazards

Potential seismic hazards resulting from nearby moderate to major earthquakes can generally be classified as primary and secondary. The primary effect is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking, ground lurching, regional subsidence or uplift, soil liquefaction, lateral spreading, and landslides.

The following sections present a discussion of seismic hazards as they apply to the site. Liquefaction is assessed as well as slope instability risk, including lateral spreading,

3.16.1.1. Ground Rupture and Active Faulting

A Geotechnical Factual Report has been prepared for the project (see Appendix O). This identifies that the nearest, mapped, active fault to the site is the Otamarakau Fault located 27 km southeast of the site. At this distance the site is located well outside recommended fault avoidance zones and as such, the risk of fault rupture is considered to be low.

ENGEO have considered previous publications by GNS which consider active faulting models across New Zealand which also include offshore active faults within the Bay of Plenty in the area known as the Havre Trough and northern Taupo Rift, an extension of the Whakatane Graben (see Appendix O). Most of the mapped faults in this study are derived from seismic reflection data with the majority of faults being normal. The nearest offshore faults from this study are approximately 15 to 20 km to the north east. These fault traces have not been confirmed to reach the coast. An estimated slip rate for faults in the vicinity of the site is between 0.55 and 0.9 mm/yr (of the order of 50-100 mm per century).

3.16.2. Liquefaction

The liquefaction assessment for the Wairakei South site is documented in the Geotechnical Interpretive and Assessment Report (Appendix P), with detailed outputs provided in Appendix 7 of the report. The assessment has been undertaken for the post-development landform, reflecting the proposed finished ground levels and engineered fill platforms.

In summary:

- Alluvial sands, fluvial deposits and lower fluvial deposits underlying the Site are susceptible to liquefaction.
- There is negligible predicted serviceability effect on the proposed development for SLS earthquake events (1/25 year), with liquefaction either not triggered or occurring only in limited, discontinuous soil layers.
- Liquefaction is triggering is predicted to commence at peak ground accelerations (PGAs) of approximately 0.08 g, with a step change in response generally occurring between 0.1 g and 0.2 g, corresponding broadly to 1/50-to-1/200-year return period earthquake events (refer Appendix 7 of the Geotechnical Interpretive and Assessment Report).
- For earthquake events exceeding approximately 1/200-year return periods, liquefaction is fully triggered within susceptible deposits, and ground response behaviour plateaus for larger events including ULS (1/1000 year) and 1/2500-year events, as reflected in the Liquefaction Severity Number (LSN) and Liquefaction Potential Index (LPI) results.
- Module 3 (MBIE & NZGS, 2021) threshold values for LSN and LPI have been used to characterise expected ground performance, noting that these indices are applied primarily for area-wide screening and, while generally reliable, may misclassify damage or performance in approximately 20-30% of cases due to uncertainties in soil stiffness, strength and deformation behaviour.
- Predicted free-field vertical settlements for the post-development landform typically range between approximately 150 mm and 250 mm across the northern block, and between 300 mm and 500 mm across the southern block, for earthquake events exceeding 1/200-year return periods These settlements reflect reconsolidation of liquefied soils and do not include localised building-induced deformation.
- Surface manifestation during or following a ULS (1/1000 year) earthquake event is considered unlikely across most of the low-lying floodplain development platforms, provided the proposed engineered crust thickness is achieved.
- Localised areas of increased risk remain, particularly:
- Along the northern dune system, where crust thickness is reduced and engineered fill thickness is locally less than 2m.
- Within stormwater swales, drainage corridors and road reserve areas, where thinner crusts and free-face conditions increase the likelihood of surface manifestation.
- Targeted mitigation measures are therefore required in these locations, including undercutting to increase engineered fill thickness, shallow ground improvement, use of dense gravels, and/or geogrid reinforcement.

The proposed landform for the development is several metres of engineered fill comprising compacted dense pumice soil with additional reinforcement and / or cohesive fill use for the perimeter of the development platforms. The non-liquefiable crust across the development is

expected to range between 4m and 7m in thickness (average 5.5m). The effects of this crust have reduced liquefaction severity from moderate / severe to little / minor.

To further reduce the potential impacts of liquefaction to buildings, foundation design options for future residential buildings will incorporate specification for earthquake resilient foundation systems developed in general accordance with the MBIE Build It Right Canterbury Guidelines Technical Category 2.

For future light commercial and industrial building applications specifically engineered foundation systems and floor construction will also be specified to account for the estimated total and differential liquefaction induced settlements being considered at the site.

Essential and lifeline services infrastructure such as stormwater pump stations and culverts beneath proposed roading networks are expected to be designed to include geotechnical remediation works such as shallow or deep ground improvements to reduce liquefaction induced total and differential settlement to prevent collapse of these structures for the designed importance level required for their ongoing serviceability. Specific design of these systems will be provided as part of detailed design prior to consent and / or engineering approval works.

Cyclic softening refers to the reduction in undrained shear strength of clay-like soils under cyclic loading. Both peat and estuarine muds at the site are considered susceptible to cyclic softening.

Cyclic softened parameters adopted for stability assessment are described in Section 7.4 of the Geotechnical Interpretive and Assessment Report (Appendix P).

3.16.3. Load Induced Settlement

3.16.3.1. General

Highly compressible peat deposits (Unit 3B) underlie much of the site, with thicknesses generally ranging from 0 m to approximately 3.5 m, while compressible estuarine muds (Units 5A and 5C) are also present with variable lateral extent and thickness. The distribution of these materials is illustrated on Drawings 110, 111 and 112 (peat) and Drawings 113, 114 and 115 (estuarine muds) in Appendix 5 of the Geotechnical Interpretive and Assessment Report (see Appendix P).

The placement of engineered fill and future structural loads across these deposits will result in significant primary consolidation settlement, together with long-term creep settlement, which is expected to continue for an extended period following completion of earthworks and subsequent development.

In addition, the application of widespread fill loads will induce elastic settlement within the underlying sands and fluvial deposits (Units 4, 5B, 5D and Unit 6). These settlements are expected to be relatively minor, to occur predominantly during the earthworks phase, and not result in long-term creep behaviour.

These settlement mechanisms and anticipated magnitudes are described in detail in the Geotechnical Interpretive and Assessment Report (see Appendix P).

3.16.3.2. Remedial Options

A range of settlement mitigation measures may be required across the site, with the selection of remedial options dependent on staging, development timeframes, cost, and the settlement tolerance of the intended land use. It is anticipated that a combination of measures will be implemented, rather than reliance on a single approach.

Table 9 (Remedial Options) summarises the principal remediation strategies assessed by ENGEO and considered appropriate for the site.

Table 9: Remedial Options

Option	Process	Advantages	Limitations
Peat Removal	Excavation of the peat deposits and replacement with engineered granular fills.	Facilitate immediate construction; eliminates creep settlement in peat and therefore suitable for structures sensitive to settlement.	Only mitigates settlement risk from peat, not applicable in isolation where estuarine soils are present. Dewatering challenges.
Preload	Construct a temporary surcharge (pre-load) above design finished level.	Typical earthworks procedure. Typically cost effective.	Timeframes, survey control. Manages long term creep settlement within tolerances, does not mitigate creep.
Ground Improvement	Stone columns, soil mixed columns, CFA piles or similar rigid inclusions, to transfer load beneath peat.	Transfers load beneath peat deposits, and therefore suitable for structures sensitive to settlement.	Typically cost prohibitive for large areas. Specialist equipment and procedures.

3.16.4. Fill Embankment Stability

Placement of fill adjacent to existing drainage networks or proposed channels and stormwater containment areas require an assessment of the edge stability of those embankments under both static and seismic conditions due to the soft nature of the underlying subsoils and liquefaction potential and lateral spreading risks.

Given the 5 to 8m thick liquefiable layer beneath the majority of the site, flow failure whereby soils liquefy and laterally spread, is predicted to occur for the edge of embankments constructed from granular material resulting in large scale slope displacements exceeding the acceptable displacement limits.

Analyses indicate that seismic displacements within 50 to 70 m of embankments edges will exceed tolerances for residential development without mitigation. Ground improvement / remediation is therefore expected to be required to address seismically induced edge instability effects within this zone.

Remediation options have been considered to mitigate flow failure and edge stabilisation at the site including:

- Deep Ground Improvement being a narrow improvement block near the edge of the development platform through the highly liquefiable soils to effectively cut off flow failure conditions. Rammed aggregate piers (**RAP**), stone columns or deep soil mixing (**DSM**) panels could all be considered as remedial solutions aligned with this option.
- Cohesive fill embankment, being a portion of the fill embankment comprising stiff cohesive or cemented fill materials to resist flow failure conditions and seismic shearing. The option includes the use of imported cohesive dominant fills and / or use of binders in fill construction (lime, cement, KOBM) to stiffen the soil. This option includes the use of a high strength basal geogrid reinforcement layer to provide resistance for base shear where lateral spreading or flow failure conditions occur beneath the fill block.
- Reinforced fill embankment, using high strength geogrid reinforcement layers to effectively form an edge MSE structure to resist flow failure conditions and seismic shearing. A range of uniaxial geogrids are available to provide this improvement option.
- Shallow ground improvement using either gravel or geogrid reinforced soils between development platforms where stormwater conveyance swales are considered as an alternative to the above design options which also may be used in this situation.

Staged development of the filled platforms may adopt one or more of these options with suitable overlapping of solutions. The lateral extent of stabilisation methods is outlined in the report to limit total displacements under static and seismic conditions including fully liquefied soil conditions under earthquake motions. The zones of treatment, however, need to be considered with respect to the future built form in each stage as part of detailed design so that transitions between reinforcement / stabilised edge works and the unreinforced / non-stabilised bulk landform behind are not situated beneath future building development or critical inground infrastructure. These transitions therefore should be considered along future lot boundaries, road reserve or reserve areas.

Where post construction static settlements or liquefaction performance are excessive, deep ground improvement such as stone columns, RAPs, soil mixed columns, continuous flight auger (**CFA**) piles or similar rigid inclusions could be considered to transfer loads from the embankment or infrastructure to more competent soils at depth. This is likely to be required for critical infrastructure, such as pump stations, culverts or sensitive building development.

Due to the liquefaction susceptibility of the underlying soils, deep ground improvement depths may be in excess of 15m.

3.16.5. Difficult Soils, Collapsible Soils, Expansive Soils, Aggressive Soils, and Sensitive Soils

Investigation logs and laboratory data have been reviewed by ENGEO to determine whether difficult soils are present at the site, including soils that may be expansive, chemically aggressive, sensitive, or collapsible.

The soils encountered and proposed to be reused or imported as part of the development are predominantly volcanic in origin, with natural soils largely deposited through fluvial processes.

Soils that exhibit expansive behaviour are typically characterised by a high proportion of high-plasticity clay minerals. The soils present at the site are generally silty sands and sandy silts, with a relatively low clay fraction. On this basis, the soils are assessed as non-expansive.

Peat soils at the site are typically slightly acidic, with measured pH values generally in the range of 4 to 5, compared with the underlying alluvial soils and proposed pumice fill materials, which are typically neutral to mildly alkaline. As a result, unprotected (ungalvanised) steel elements and pipework are not recommended for use within peat soils, as acidity may adversely affect long-term durability. The peat deposits are generally low in sulphur content and are not considered acid sulphate soils, and therefore are not expected to present a risk of concrete degradation.

The pumice-dominated volcanic soils proposed for use as engineered fill are considered partially sensitive when saturated, such that reworking under wet conditions may result in a temporary reduction in shear strength. Earthworks management measures to address this behaviour are discussed in the geotechnical reporting and relevant construction methodology sections.

Collapsible soils are characterised by an open soil fabric that can result in significant settlement under load or moisture change. Regional examples include Mangaone and Haupara Tephra, which contain halloysite clays and are present in parts of Te Puke and Welcome Bay. These soil types were not identified during site investigations and are not considered a risk for in situ materials at the site. However, given the requirement for imported fill, potential fill sources should be assessed to confirm that collapsible volcanic soils are not introduced as part of the development.

These findings are documented in the ENGEO geotechnical investigations (see Appendix O & P).

3.16.6. Undocumented Fills

Localised areas of undocumented fill and historic soil disturbance have been identified in the ENGEO Environmental Detailed Site Investigation (**DSI**) (Appendix S), primarily associated with existing farming activities, light commercial uses, and residential land parcels within the site. These activities include the formation of farm races, sheds, stock hardstand areas and marshalling yards.

The extent and location of these areas are documented in the DSI and associated figures. Investigations indicate that undocumented fills are generally shallow or associated with stockpiled material, with thicknesses typically not exceeding approximately 1.5 m.

The proposed earthworks strategy includes either undercutting of peat and surficial soils, or preloading where those materials are to remain in place. Management of undocumented fill will align with the recommendations of the DSI and will generally favour capping rather than removal, unless removal is required for construction or contamination management purposes. Where removal is necessary, additional targeted testing will be undertaken to confirm appropriate disposal pathways, consistent with the procedures outlined in the DSI (Appendix S).

3.17. OTHER NATURAL HAZARDS

3.17.1. Tsunami

A natural Hazards Assessment Report is included as Appendix Q.

The proposed development is to include construction of filled development platforms set between 3.6m RL and 5.1m RL, compared to the average existing ground level of 1.2m RL. The latest tsunami wave inundation modelling indicates that inundation within the development area for a 5 m wave, considered to be an ARI 2,500-year event, is from 0 m up to 1.0m above existing ground levels. On this basis, the proposed development is expected to remain above the inundation level.

The site is considered to be almost entirely within the tsunami evacuation zone. With respect to the inundation models, safe evacuation paths for residents include two paths:

- Exiting the development via PEI and travelling south to areas south of Rangiuru Business Park where inundation is not expected to occur.
- Exiting the development via Bell Road west and travelling inland towards either Te Puke south or the Papamoa Hills where inundation is not expected to occur.

Both of the above evacuation routes may be considered for foot traffic under emergency conditions to provide safe evacuation of affected populations within the expected 40-minute tsunami arrival time. It should be acknowledged that given the elevation of the proposed development, a shelter in place option is available to the affected population as inundation is not expected to affect the proposed development platforms.

3.17.2. Earthquake induced landslides

Earthquake induced landslides have been assessed by ENGEO as having a “medium” risk under a primary risk assessment (i.e., without mitigation). Mitigation measures to reduce this risk to “low” have been considered as part of the Geotechnical Interpretive Report for the development and are outlined in brief in the Natural Hazard Assessment Report prepared for the site (see Appendix Q).

3.17.3. Edge Stability

The existing landform comprises near level farmland with occasional drainage ditch features being typically 150 m intervals across the development area. The risk of static and seismic instability is considered low for the site, such that specific analysis is not considered necessary for natural hazard assessments. The post development conditions include a raised development platform situated above and adjacent to soils susceptible to liquefaction and lateral spreading risk, with elevated groundwater levels and future stormwater conveyance swales forming free edges is localised areas around the perimeter of the development.

4. APPROVALS & STATUTORY CONSIDERATIONS

4.1. RELEVANT LEGISLATION

4.1.1. Fast-track Approvals Act 2024

Wairakei South is endorsed by the New Zealand Government as a listed project under Schedule 2 of the FTAA.

The FTAA's stated purpose 'is to facilitate the delivery of infrastructure and development projects with significant regional or national benefits.' The Act has been specifically created for the purpose of fast tracking the delivery of large-scale projects and it is considered that Wairakei South, with the benefits described in Section 1.2.2 above, is consistent with the purpose of the FTAA.

The project is required to confirm that the consent application complies with section 46(2) of the FTAA; whether the substantiative application is complete and within scope. The section states:

> *(2) A substantive application complies with this subsection if—*
>
> *(a) the application complies with—*
> *(i) section 42; and*
> *(ii) sections 43 and 44; and*
> *(b) the application relates solely to a listed project or a referred project; and*
> *(c) the EPA considers that, on the face of the application, the project does not appear to involve an ineligible activity; and*
> *(d) any fee, charge, or levy payable under regulations in respect of the application is paid.*

Compliance with sections 42, 43 and 44 of the FTAA is summarised in the FTAA Compliance Table provided at Appendix AM.

In response to section 46(2)(b) of the FTAA, it is confirmed that the application relates solely to a listed project; being Wairakei South.

In response to section 46(2)(c) of the FTAA, it is confirmed that the project does not involve any ineligible activity (see Section 1.3 above).

In response to section 46(2)(d) of the FTAA, it is confirmed that any fee, charge, or levy payable under regulations in respect of the application will be paid by the applicant at the time of submission.

4.1.2. Resource Management Act 1991

4.1.2.1. Section 5 Purpose of the Act

> *(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.*
>
> *(2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and*

communities to provide for their social, economic, and cultural well-being and for their health and safety while—

(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

The proposed activity has been assessed against the statutory definition of "sustainable management" set out in section 5(2) of the RMA. The proposal enables the development of land to provide housing, employment opportunities, infrastructure and open space in response to identified sub-regional growth pressures. It represents a comprehensive and staged urban extension supported by long-term infrastructure planning to provide for the communities social and economic wellbeing as a whole and for the needs of future generations.

The site is currently constrained by peat soils, high groundwater levels and drainage limitations, which make it unviable for primary production activities on a long term / profitable basis. In ensuring the land resource can instead be used for urban development, the proposal responds to these constraints through engineered platform levels, integrated stormwater systems, flood mitigation infrastructure and geotechnical design. These measures ensure the land can be safely and efficiently used without compromising its long-term functionality or transferring unmanaged risk to future generations.

By consolidating development within a master planned framework rather than enabling dispersed or fragmented land use patterns, the proposal promotes long-term, efficient resource use consistent with section 5(2)(a) of the RMA.

The proposal incorporates a number of environmental mitigation and enhancement measures, including:

- Constructed wetlands and water-sensitive urban design (**WSUD**) to treat and attenuate stormwater.
- Riparian planting and ecological restoration to enhance habitat connectivity.
- Flood modelling and attenuation systems to maintain downstream hydrological performance.
- Geotechnical design to manage peat soils and liquefaction susceptibility.
- Erosion and sediment controls during construction.

Ecological assessments confirm the site is predominantly modified pastoral land and does not contain mapped significant indigenous vegetation or habitats that would be adversely affected. The proposed wetland creation and riparian restoration will improve ecological function relative to the sites existing baseline condition.

Potential adverse effects identified through technical assessments include natural hazards (flooding, tsunami, liquefaction), stormwater runoff, ecological effects, and landscape change.

These effects are addressed through:

- Raised development platforms above modelled inundation levels.

- Defined overland flow paths and increased pumping capacity.
- Integrated stormwater attenuation and treatment wetlands.
- Landscape buffers and interface design.
- Cultural engagement archaeological assessment and cultural monitoring.
- Staging to align infrastructure capacity with development.

Flood modelling confirms flooding risk can be appropriately mitigated for the Development and there will be no increase in downstream flood risk, including under climate change scenarios. Ecological and landscape effects are mitigated through restoration planting and integrated design.

Residual effects are appropriately avoided, remedied or mitigated through engineering controls, management plans and consent conditions, including ongoing cultural requirements.

4.1.2.2. Section 6 Matters of National Importance

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:
(b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:
(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:
(d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:
(e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:
(f) the protection of historic heritage from inappropriate subdivision, use, and development:
(g) the protection of protected customary rights:
(h) the management of significant risks from natural hazards.

Territorial authorities are required under Section 6 of the RMA to recognise and provide for these matters of national importance when 'managing the use, development and protection of natural and physical resources.

With respect to Section 6(f) of the RMA, historic heritage is defined as 'those natural and physical resources that contribute to an understanding and appreciation of New Zealand's history and cultures, deriving from any of the following qualities: (i) archaeological; (ii) architectural; (iii) cultural; (iv) historic; (v) scientific; (vi) technological'. Historic heritage includes: '(i) historic sites, structures, places, and areas; (ii) archaeological sites; (iii) sites of significance to Māori, including wahi tapu; (iv) surroundings associated with the natural and physical resources.

The Development footprint is confined to previously modified farmland and does not extend into wetlands, lakes, rivers or their margins. No reclamation or modification of natural water bodies is proposed. Earthworks, stormwater management and sediment controls are designed to avoid adverse effects on downstream receiving environments. Landscaping and riparian enhancement measures will further mitigate potential edge effects. Public access to wetlands and future water bodies will also be provided.

Natural character values associated with water bodies are maintained and enhanced through restoration planting, defined setbacks, and avoidance of unnecessary piping or reclamation of natural features.

There are no identified outstanding natural features or landscapes within the site or directly affected by the proposal. The development will not intrude into or visually dominate any mapped outstanding natural feature or landscape.

No areas of identified significant indigenous vegetation or significant habitats of indigenous fauna are located within the development footprint. Where vegetation clearance is required, it is limited to modified pasture and exotic species. Ecological assessments confirm that no significant ecological values will be adversely affected.

The Development proposal does not restrict existing legal public access to the coastal marine area, lakes or rivers. Where new roads, reserves or esplanade areas are created as part of the subdivision design, these will maintain or enhance connectivity and access consistent with the WBOPDC District Plan requirements.

Engagement with relevant iwi and hapū has been undertaken. Cultural values associated with water, land and waahi tapu have been identified and considered.

Stormwater management, earthworks controls and water quality measures recognise the importance of protecting the mauri of water bodies. Through consultation and design refinement, the proposal recognises and provides for the relationship of Māori with their ancestral lands and taonga in accordance with Section 6(h).

No scheduled historic heritage items or known archaeological sites are directly affected by the proposal. In the event that archaeological material is uncovered during earthworks, Discovery Protocol will be implemented.

There are no identified protected customary rights orders applying to the site. The proposal does not limit or extinguish any recognised customary rights.

The site is subject to identified natural hazard risks, including flooding and potential coastal inundation. Technical assessments confirm that finished floor levels, earthworks design and stormwater management measures ensure that significant risks are appropriately managed.

The proposal incorporates hazard mitigation measures consistent with BOPRC Regional Plan and WBOPDC District Plan provisions and does not expose people or property to unacceptable levels of risk.

4.1.2.3. Section 7 Other Matters

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—

(a) kaitiakitanga:
(aa) the ethic of stewardship:
(b) the efficient use and development of natural and physical resources:
(ba) the efficiency of the end use of energy:
(c) the maintenance and enhancement of amenity values:
(d) intrinsic values of ecosystems:
(e) [Repealed]
(f) maintenance and enhancement of the quality of the environment:
(g) any finite characteristics of natural and physical resources:
(h) the protection of the habitat of trout and salmon:
(i) the effects of climate change:
(j) the benefits to be derived from the use and development of renewable energy.

The proposal has been informed by engagement with Mana Whenua and recognises the importance of protecting the mauri of land and water. Stormwater treatment, sediment control, riparian enhancement and natural hazard management measures are incorporated to protect ecological values and water quality. These measures reflect a commitment to responsible environmental management and are consistent with the concept of kaitiakitanga.

Based on a Masterplan, the development adopts a comprehensive development approach rather than a traditional subdivision. Infrastructure is designed to function effectively over the long term, and environmental mitigation measures are embedded in the site layout. This demonstrates stewardship of natural and physical resources by managing change in a planned and coordinated manner.

The proposal consolidates development in a planned growth area and is supported by coordinated infrastructure and servicing. This avoids inefficient, fragmented rural subdivision and promotes the efficient use of land and infrastructure investment.

The proposal supports compact urban form, integrated transport connections and opportunities for active transport. These elements contribute to improved energy efficiency at a structure planning level. Detailed building design will further address energy efficiency at later stages.

The masterplan incorporates open space networks, landscape buffers, wetlands and pedestrian connections. These elements contribute positively to visual amenity, recreational opportunities and neighbourhood character. While rural amenity will transition to urban amenity over time, this change is anticipated within the planned growth context and is managed through design and staging.

Ecological assessments confirm that the site is largely modified pasture with limited indigenous vegetation. The proposal includes wetland creation, riparian planting and ecological enhancement measures that will improve ecological function relative to the existing baseline. The intrinsic values of ecosystems are therefore maintained and enhanced.

Stormwater management systems, erosion and sediment controls, natural hazard mitigation and ecological restoration measures are integrated into the design. These measures ensure that adverse environmental effects are avoided, remedied or mitigated and that environmental quality is maintained or enhanced.

The proposal does not adversely affect identified trout or salmon habitats. Stormwater treatment and sediment controls ensure that downstream receiving environments are protected from degradation.

Flood modelling and hazard assessments incorporate climate change projections. Finished floor levels, stormwater attenuation and flood mitigation infrastructure are designed to respond to increased rainfall intensity and sea level rise where relevant.

While the proposal does not involve renewable energy generation, the compact urban form and transport connectivity support reduced reliance on private vehicle use and create opportunities for future renewable energy integration at the building scale.

4.1.2.4. Section 8 – Treaty of Waitangi / Te Tiriti o Waitangi

Section 8 of the Resource Management Act 1991 requires decision-makers to take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi). The Wairakei South Development has been informed by early and ongoing engagement with mana whenua, including consideration of relevant iwi planning documents and preparation of the Waitaha Cultural Impact Assessment (CIACIA (; Appendix V). The application recognises the importance of whenua, wai and cultural values associated with the SiteDevelopment site and wider Kaituna catchment and incorporates cultural considerations into the proposed design, mitigation and management framework.

The proposal responds to Te Tiriti of Waitangi principles through active engagement and participation with Tangata Whenua, recognition of kaitiakitanga, and measures intended to protect and enhance environmental and cultural values over time. This includes extensive wetland restoration, indigenous planting, improved stormwater treatment and water quality outcomes, cultural monitoring provisions, accidental discovery protocols, and ongoing opportunities for Mana Whenua involvement through detailed design and implementation. The proposal also seeks to restore aspects of environmental mauri through the transition from intensive drained peat-based agricultural use toward a more managed and ecologically integrated landscape.

Overall, the application is considered to appropriately take into account the principles of Te Tiriti o Waitangi for the purposes of section 8 of the RMA.

4.1.3. Heritage New Zealand Pouhere Taonga Act 2014

The purpose of the Heritage New Zealand Pouhere Taonga Act 2014 (**HPTA**) is to promote the identification, protection, preservation, and conservation of the historical and cultural heritage of New Zealand.

The following applications may be made by any person to Heritage New Zealand Pouhere Taonga:

(a) an application for an authority to undertake an activity that will or may modify or destroy the whole or any part of any archaeological site or sites within a specified area of land, whether or not a site is a recorded archaeological site or is entered on the New Zealand Heritage List / Rārangi Kōrero or on the Landmarks list:

(b) an application for an authority to undertake an activity that will or may modify or destroy a recorded archaeological site or sites, if the effects of that activity on a site or sites will be no more than minor, as assessed in accordance with section 47(5) of the HPT:

(c) an application for an authority to conduct a scientific investigation of an archaeological site or sites within a specified area of land, whether or not a site is a recorded archaeological site or is entered on the New Zealand Heritage List / Rārangi Kōrero or on the Landmarks list.

An archaeological site, as defined by section 6(a) of the HPT, is any place in New Zealand, including any building or structure (or part of a building or structure), that

(i) was associated with human activity that occurred before 1900 or is the site of the wreck of any vessel where the wreck occurred before 1900 and;

(ii) provides or may provide, through investigation by archaeological methods, evidence relating to the history of New Zealand.

No person may modify or destroy, or cause to be modified or destroyed, the whole or any part of any archaeological site, if that person knows, or ought reasonably to have suspected, that the site is an archaeological site, other than in accordance with an authority is granted under section 48, 56(1)(b), or 62 of the HPTA. An Authority is sought under (a) above to mage the potential for unrecorded archaeological sites.

4.1.4. Wildlife Act 1953

The Wildlife Act (**WA**) covers all native birds, bats, frogs, and reptiles, including those that visit New Zealand such as godwits and sea turtles. It also covers some native invertebrates and marine species. It is the main law that helps protect that wildlife, by controlling how people interact with them. For wildlife that is “absolutely protected” under the WA, it is an offence to catch, kill or hunt them; buy, sell or possess them; hold them in captivity; export them or release them. A permit is sought to manage wildlife under the Act.

4.2. NATIONAL ENVIRONMENTAL STANDARDS

There are three National Environmental Standards (**NES**) that are relevant to and need to be addressed in respect of the application, as follows.

4.2.1. National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011

A consent will be required for the site under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (**NESCS**) because all activities involving the disturbance, remediation, or change of use of potentially contaminated land must be managed.

As assessed in the ENGEO Detailed Site Investigation (Appendix S), the site has been identified as land subject to a HAIL activity, consent is required under Regulation 10 of the NESCS to support the land use change, subdivision and bulk earthworks activities. As the results of testing report exceedances above the NES for applicable land use criteria, a restricted discretionary consent is required under the NES. A Contaminated Site Management Plan (CSMP) has been provided by ENGEO (Appendix AK) to support the contaminated land assessment and to manage and guide any contamination removal as part of the project.

4.2.2. National Environmental Standards for Air Quality 2004

The Resource Management (National Environmental Standards for Air Quality) Regulations 2024 (**NESAQ**) aim to set a guaranteed level of health protection for all New Zealanders, in respect to issues that can arise from poor air quality. The proposal does not involve any activities that are regulated by (or require consent under) the NESAQ. Thus, the relevant provisions regarding air quality from the Bay of Plenty Region Natural Resources Plan Chapter 21 – AQ Air Quality apply and are discussed in section 4.4.3 of this report.

4.2.3. National Environmental Standards for Freshwater 2020

The Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (**NES-F**) regulate activities that pose risks to the health of freshwater and freshwater ecosystems.

The Ecological Impact Assessment prepared by Ecological Solutions (Appendix L) confirms that there are no wetlands (as defined in the RMA) identified either with the project or within 100m of the site boundary. Thus, no consents are required in accordance with Subpart 1 of Part 3 of the NESF.

The proposal does not require resource consent under the NES-F for the installation or replacement of culverts associated with internal drainage infrastructure, as the relevant waterbodies are predominantly artificial farm drainage features rather than “rivers” as defined under the Resource Management Act 1991 and NES-F. The drainage channels within the Site have been established and modified to support agricultural land drainage and do not exhibit the characteristics of natural river systems. Accordingly, the culvert provisions relating to structures in rivers are not considered to apply to these artificial drains. Confirmation of the classification of individual drainage features is provided in the ecological and hydrological assessments.

Similarly, flap gate structures proposed at discharge locations are intended to manage the controlled discharge of stormwater from the Site to the receiving drainage network and river system, including prevention of backflow during high-flow or flood events. These structures are proposed at the discharge interface rather than within the bed of a river itself and are therefore not anticipated to trigger consent requirements under the NES-F provisions relating to instream structures. Detailed design and final positioning of discharge infrastructure will confirm compliance with relevant statutory requirements.

4.3. POLICY STATEMENTS

4.3.1. National Policy Statement on Urban Development 2020

From a policy perspective, the development aligns with the NPS-UD, which promotes intensification in areas with good accessibility and infrastructure capacity.

As summarised below, the proposal is considered to contribute to a well-functioning urban environment under the NPS-UD for the reasons outlined in the various expert reports that have been prepared for the project, including the Urban Design Assessment (see Appendix J).

Regard must be had to relevant provisions of the NPS-UD:

- To recognise that New Zealand's urban environment develops and changes over time in response to the diverse and changing needs of people, communities, and future generations (Objective 4).
- To achieve a well-functioning urban environment by having or enabling as a minimum a variety of sites that are suitable for different business sectors in terms of location and site size; and supporting the competitive operation of land and development markets (Policy 1(b) and 1(d))8.
- To have particular regard to planned urban built form anticipated by those RMA planning documents that have given effect to the NPS; that this may involve significant changes to an area and those changes may impact amenity values, including by providing increase and varied housing densities and types, and this is change is not an adverse effect (Policy 6).
- To require that local authorities provide sufficient housing capacity in the short, medium and long term at all times.

The Development will assist to fulfil housing capacity in all three timeframes (particularly the short and medium term). Business land is also in high demand and low supply (as currently there are no further new urban growth areas zoned in the eastern corridor).

The Development is consistent with the NPS-UD, both in the current and future intended environments. Accordingly, significant weighting should be provided to the NPS-UD when considering the project and its effects.

The inclusion of elevated building platforms, permeable surfaces, and resilient well planned street design reflects a proactive approach to hazard mitigation and climate adaptation, consistent with the NPS-UD's emphasis on long-term environmental resilience.

The masterplan also responds to the Kaituna River Document, which outlines a vision for river health, co-governance, and community engagement. Water-sensitive design principles are applied to protect and enhance the river environment, including riparian restoration, stormwater treatment, and public access to natural features. These strategies support the NPS-UD's requirement for responsive planning that considers cultural wellbeing and environmental health. The inclusion of mana whenua in governance and design decisions ensures that the development is not only compliant with statutory obligations but also deeply respectful of the land and its people.

By incorporating the 7Cs of the NZ Urban Design Protocol, aligning with the WBOPDC Residential Outcomes Framework, and conforming to the NPS-UD, the masterplan indicates a commitment to building a well-functioning urban environment that represents its people's values and goals. Design guidelines have been provided for residential, commercial and Industrial development (see Appendix AE, AF, and AG) which are supported by appropriate consent conditions which apply appropriate development standards (see Appendix AD).

4.3.2. National Policy Statement on Natural Hazards 2025

The National Policy Statement on Natural Hazards (**NPS-NH**) came into force on 15 January 2026. This National Policy Statement applies to all activities managed under the RMA, except for infrastructure (as defined in the Act) and primary production (as defined in the National Planning Standards). The NPS-NH includes the following objective and related policies:

2.1 (1) Objective - Natural hazard risk to people and property associated with subdivision use and development is managed using a risk-based proportionate approach.

2.2 Policies

- Policy 1: When considering natural hazard risk associated with subdivision, use or development, the risk level must be assessed using the risk matrix.
- Policy 2: Natural hazard risk associated with subdivision, use and development must be managed using an approach that is proportionate to the level of natural hazard risk.
- Policy 3: Where subdivision, use or development is assessed as having very high natural hazard risk, that risk must be avoided.
- Policy 4: Where subdivision, use or development, including any associated mitigation measures, will create or increase significant natural hazard risk on other sites, that risk must be avoided or mitigated using an approach that is proportionate to the level of natural hazard risk.
- Policy 5: Natural hazard risk assessment and decisions must be based on the best available information and must be made even when that information is uncertain or incomplete.
- Policy 6: The potential impacts of climate change to at least 100 years into the future must be considered.

The risk posed by natural hazards has been considered and assessed in the Natural Hazards Assessment Report (Appendix Q). The NPS-NH requires a risk-based assessment for natural hazard risk associated with subdivision, use or development which must be assessed using the likelihood and consequence tables contained within Appendix 1 of the NPS-NH.

As per the Natural Hazard Report, the natural risk assessment when applied to the above is assessed as being low with the exceptions of liquefaction (high risk; low as assessed by secondary assessment) and landslide (medium risk; low as assessed by secondary assessment). Subject to the development proceeding in accordance with the design and recommendations and consent conditions including consent notices to be placed on future records of title, to the effect that all works will be carried out in accordance with the recommendations of the Natural Hazard Report, these risks can be managed.

4.3.3. National Policy Statement on Freshwater Management 2020

The objective of this National Policy Statement is to ensure that natural and physical resources are managed in a way that prioritises:

(a) first, the health and well-being of water bodies and freshwater ecosystems

(b) second, the health needs of people (such as drinking water)

(c) third, the ability of people and communities to provide for their social, economic, and cultural well-being, now and in the future.

No wetlands (as defined in the RMA) have been identified either within the site or within 100m of the site.

In terms of preserving (and improving) water quality, the large scale of the project represents an opportunity to achieve a reasonable level of water sensitive design.

Water sensitive design seeks to use natural processes to manage runoff, such as biofiltration swales and wetlands that filter contaminants and enhance urban amenity. It also seeks to minimise runoff by managing the amount of hard surfaces created in a catchment.

Wairakei South achieves a sustainable and large-scale water sensitive design outcome through its use of low to medium density urban development supported by large green swale and wetland networks providing a high level of treatment to the site and broader catchment. Wetland swale networks are present throughout the proposed housing and employment areas, enhancing these by providing passive amenity values along with recreational opportunities.

In addition, Mana Whenua have been actively involved through consultation and engagement for the Development (refer section 5.1). In particular, Waitaha have identified potential effects of stormwater discharge and groundwater interaction on the cultural value of wai and have proposed design responses and consent conditions, including protection options for waterways.

4.3.4. National Policy Statement for Indigenous Biodiversity 2023

The objective of this National Policy Statement is:

(a) to maintain indigenous biodiversity across Aotearoa New Zealand so that there is at least no overall loss in indigenous biodiversity after the commencement date; and

(b) to achieve this:

(i) through recognising the mana of tangata whenua as kaitiaki of indigenous biodiversity; and

(ii) by recognising people and communities, including landowners, as stewards of indigenous biodiversity; and

(iii) by protecting and restoring indigenous biodiversity as necessary to achieve he overall maintenance of indigenous biodiversity; and

(iv) while providing for the social, economic, and cultural wellbeing of people and communities now and in the future.

Policy	Provision	Comment
1	Indigenous biodiversity is managed in a way that gives effect to the decision making principles and takes into account the principles of the Treaty of Waitangi.	The applicant has responded to and appropriately addressed this issue by, as described in Appendix AH and AJ, the including the importance criteria outlined in Appendix C Set 3 of the Operative Bay of Plenty Regional Policy Statement (BOP-RPS) as the qualitative standards that form the basis for decision-making. In addition, the principles of the Treaty of Waitangi are taken into account, particularly rangatiratanga, by ensuring consultation and engagement with relevant Mana Whenua allows for decision-making and input over the management of the site and any indigenous biodiversity. A Cultural Impact Assessment (CIA, Appendix V) has been prepared for the proposed development by Te Kapu ō Waitaha, reflecting a desire for landscape design that reflects indigenous ecosystems.
2	Tangata whenua exercise kaitiakitanga for indigenous biodiversity in their rohe, including through: (a) managing indigenous biodiversity on their land; and (b) identifying and protecting indigenous species, populations and ecosystems that are taonga; and (c) actively participating in other decision-making about indigenous biodiversity.	The applicant has responded to and appropriately addressed this issue by engaging early and extensively with tangata whenua (refer section 5.1). A CIA (Appendix V) has been prepared for the proposed development by Te Kapu ō Waitaha, and while indigenous biodiversity is not specifically called out, loss of mauri and diminishment of environmental health and imbalance between human activity and natural systems is identified as a potential effect of the development. Mauri-based cultural health monitoring, adaptative management in the case of degradation and landscape design reflecting indigenous ecosystems are recommended so that tangata whenua may exercise kaitiakitanga for indigenous biodiversity in their rohe.
3	A precautionary approach is adopted when considering adverse effects on indigenous biodiversity.	A precautionary approach is proposed for the management of native skinks, by way of a Wildlife Act Permit, in case they are encountered during wildlife monitoring on the project. A lizard Management Plan has been prepared in support of this (refer Appendix AJ).
4	Indigenous biodiversity is managed to promote resilience to the effects of climate change.	The Development proposes extensive wetland systems for stormwater and flood management. These wetlands will deliver floodwater storage and attenuation, ecological restoration and habitat creation and long-term climate resilience through nature-based solutions. The proposed 134 ha of planted stormwater conveyance and constructed wetlands are estimated to provide carbon sequestration in the order of 470–1,000 tCO2-e per year as set out in the Climate change & Sustainability Assessment (Appendix AA).

Policy	Provision	Comment
5	Indigenous biodiversity is managed in an integrated way, within and across administrative boundaries.	The site is located within the Tauranga Ecological District, which is situated in the Western Bay of Plenty Ecological Region. Beyond the coastal zone, the rest of the ecological district, including the Site, is in the semi-coastal bioclimatic zone. An Ecological Management Plan (Appendix AH) describes the methodology for how adverse effects on native fauna will be managed during watercourse diversion and reclamation, vegetation clearance, and construction. Where required, indigenous biodiversity may be relocated across administrative boundaries (i.e. to Tauranga City Council from Western Bay of Plenty) or locally, and managed in a way that is integrated and centred on best outcomes for the native fauna.
6	Significant indigenous vegetation and significant habitats of indigenous fauna are identified as SNAs using a consistent approach.	Not applicable
7	SNAs are protected by avoiding or managing adverse effects from new subdivision, use and development.	Not applicable
8	The importance of maintaining indigenous biodiversity outside SNAs is recognised and provided for.	The project is located outside of any SNA's, and the Development responds to this policy by proposing management and mitigation measures as set out in the Ecological Management Plan (Appendix AH) for indigenous biodiversity (in particular native fauna) to create indigenous biodiversity at the site. It is noted that with the additional of the proposed stormwater conveyance and attenuation network and associated planting, indigenous biodiversity is to be enhanced at the site (when compared to the current land-based primary production use of the site).
9	Certain established activities are provided for within and outside SNAs.	Not applicable
10	Activities that contribute to New Zealand's social, economic, cultural, and environmental wellbeing are recognised and provided for as set out in this National Policy Statement.	The Development responds positively to this policy by contributing to New Zealand's social, economic, cultural, and environmental wellbeing through an integrated urban development approach that incorporates ecological restoration, wetland creation, flood resilience, and long-term environmental enhancement. The Development will provide significant housing and employment opportunities within a strategically identified growth area, while also delivering extensive constructed wetlands, indigenous planting, stormwater treatment systems, and ecological corridors that are

Policy	Provision	Comment
		expected to improve environmental outcomes relative to the existing highly modified agricultural environment. The proposed restoration and enhancement of freshwater and wetland environments, together with the reduction in intensive agricultural land use and associated nutrient losses, supports broader environmental wellbeing objectives alongside social and economic benefits. The Development therefore reflects the intent of Policy 10 by demonstrating how urban development and biodiversity-related outcomes can be integrated to support the wellbeing of present and future communities.
11	Geothermal SNAs are protected at a level that reflects their vulnerability, or in accordance with any pre-existing underlying geothermal system classification.	Not applicable
12	Indigenous biodiversity is managed within plantation forestry while providing for plantation forestry activities.	Not applicable
13	Restoration of indigenous biodiversity is promoted and provided for.	The Development responds positively to Policy 13 by incorporating significant ecological restoration and enhancement within a highly modified agricultural environment currently dominated by dairy farming, maize cropping, and engineered drainage systems. The Development includes extensive constructed wetlands, indigenous planting, stormwater treatment systems, and ecological corridors that will improve ecological function, water quality, habitat availability, and landscape connectivity across the site. The proposed wetland network is expected to become one of the largest connected wetland systems in the Bay of Plenty region, delivering long-term biodiversity and freshwater benefits. The transition away from intensive agricultural land use is also expected to reduce nutrient and sediment inputs to surrounding waterways, further supporting restoration outcomes. Collectively, these measures are consistent with the intent of Policy 13 to promote and provide for the restoration of indigenous biodiversity.
14	Increased indigenous vegetation cover is promoted in both urban and non-urban environments.	Wairakei South responds positively to Policy 14 through the proposed establishment of extensive indigenous planting integrated throughout the development, including within constructed

Policy	Provision	Comment
		wetlands, stormwater corridors, open space networks, and landscape buffers. The Development will substantially increase indigenous vegetation cover across a site currently dominated by intensive agricultural land use, while also supporting ecological connectivity, water quality improvement, climate resilience, and urban amenity outcomes. Indigenous landscaping and restoration planting are intended to form a key component of the long-term urban design and environmental strategy for the development.
15	Areas outside SNAs that support specified highly mobile fauna are identified and managed to maintain their populations across their natural range, and information and awareness of highly mobile fauna is improved.	Wairakei South responds positively to Policy 15 through the identification and management of habitats supporting indigenous fauna, including highly mobile species, and through the implementation of a comprehensive Ecological Management Plan (Appendix AH). The Ecological Management Plan includes specific management measures for indigenous fish, birds, bats, and lizards during construction activities, including staged fish relocation, bird nesting management, bat roost protocols, and wildlife monitoring and reporting requirements. The development includes the restoration and creation of extensive wetland and ecological corridor networks that will support habitat connectivity, freshwater ecological function, and long-term biodiversity outcomes across the wider landscape. These measures will assist in maintaining indigenous fauna populations within the broader catchment while also improving ecological awareness and management throughout the development process.
16	Regional biodiversity strategies are developed and implemented to maintain and restore indigenous biodiversity at a landscape scale.	Not applicable
17	There is improved information and regular monitoring of indigenous biodiversity.	Wairakei South responds positively to Policy 17 through the preparation and implementation of detailed ecological assessments and the Ecological Management Plan (Appendix AH), which includes ongoing monitoring, reporting, adaptive management, and ecological oversight throughout construction activities. The EMP includes monitoring and reporting requirements for indigenous fish, birds, bats, and lizards, including pre-construction surveys, nesting bird monitoring, fish relocation reporting, bat management protocols, and compliance reporting to relevant authorities. These measures will improve the quality of ecological information

Policy	Provision	Comment
		available for the Site and support ongoing management of indigenous biodiversity throughout the development process.

4.3.5. National Policy Statement for Highly Productive Land 2022

In 2022, the Ministry for the Environment (**MfE**) and the Ministry for Primary Industries (**MPI**) released the National Policy Statement for Highly Productive Land (**NPS-HPL**). The sole objective of this NPS is *"highly productive land is protected for use in land-based primary production, both now and for future generations."*

AgFirst Waikato (2016) Ltd has assessed Wairakei South against the NPS-HPL. A copy of the Highly Productive Land Assessment report is included as Appendix T. This relates to an assessment of the Wairakei South development against the circumstances in which non-productive activities such as urban development can be undertaken where the criteria in either Clause 3.8, 3.9 or 3.10 of the NPS-HPL are satisfied.

Clause 3.8 of the NPS-HPL states '*Territorial authorities must avoid the subdivision of highly productive land as unless… the applicant demonstrates that the proposed lots will retain the overall productive capacity of the subject land over the long term*'. The fast-track approval application proposed at Wairakei South will remove the rural productive potential of the land. This will result in a loss of the availability and productive capacity of highly productive land for rural productivity purposes. Furthermore, the proposed urban use of the subject land will not retain the overall productive capacity of the land over the long term. Therefore, the pathway provided by clause 3.8 has not been used to support the proposed urban use of Wairakei South.

Clause 3.9 of the NPS-HPL states '*Territorial authorities must avoid the inappropriate use of highly productive land that is not land based primary production*'. The proposed development does not meet any of the exceptions specified in clause 3.9 and therefore clause 3.9 has not been used to support the proposed urban use at Wairakei South.

Clause 3.10 sets out the exemptions for subdivision, use or development of highly productive land subject to permanent or long-term constraints to be used for non- productive purposes. AgFirst have prepared a detailed assessment against Clause 3.10 in the NPS-HPL Assessment (see Appendix T).

Overall, while much of the site is categorised as LUC Class 2 (and therefore as highly productive land under the NPSHPL, the practical potential for any sustained or intensified agricultural operation is severely constrained due to:

- Soil conditions.
- Large areas of poorly and very poorly drained soils, creating wetness issues and limiting productive capacity.
- Soils that are unsuitable for horticulture or CVP operations.
- High water tables and surface flooding as also observed during site visits.

- Wetness constraints leading to reduced crop survival, yield variability, and pasture growth limitations.

Given the constraints identified above, AgFirst's assessment is that the proposed urban use of Wairakei South meets the NPS-HPL exemption tests in Clause 3.10 and therefore can be subdivided, used or developed for urban activities and does not need to be preserved for productive purposes.

In particular:

- Based on the assessment of Wairakei South, there are permanent and long-term constraints on the land that mean the use of the highly productive land for land based primary production is not able to be economically viable for at least 30 years.
- Removing Wairakei South from productive use will cause no significant loss in the district of productive capacity of highly productive land, due to the severe limitations and long-term constraints outlined above and throughout this assessment.
- The urban use of Wairakei South will not cause any fragmentation of large and geographically cohesive highly productive land, as it is already bordered by the Tauranga Expressway.
- The assessment has considered all reasonably practicable options that would retain the productive capacity of the highly productive land.

From an agricultural perspective, the assessment concludes that it would be a better option to develop this site for urban activities, compared to alternative sites that have more versatility and suitability for alternative land uses such as that suitable for Kiwifruit production to the east.

4.3.6. Bay of Plenty Regional Policy Statement

The proposal is considered to be broadly consistent with the relevant objectives and issues of the Bay of Plenty Regional Policy Statement (**RPS**; refer Appendix AC), particularly in relation to integrated resource management, urban growth, infrastructure, natural hazards, water quality and Tangata Whenua values. While the proposed Development l represents a significant transition in land use from rural production to urban development, it does so through a comprehensive, masterplanned and infrastructure-led approach that aligns with the RPS direction for coordinated urban growth within the Western Bay sub-region.

The Development has been informed by detailed technical assessments addressing flood risk, stormwater management, transport integration, geotechnical constraints, ecological values, climate resilience and infrastructure capacity. In this regard, the proposal supports a compact and integrated urban form that provides for housing, employment land, open space, wetlands and infrastructure in a coordinated manner, while avoiding ad hoc rural fragmentation and inefficient land use patterns.

Consistent with Objectives 23, 24 and 26 of the RPS, the proposal supports an efficient land use and transport relationship, responds to identified growth demand, and recognises the limited productive capability of the peat-constrained site.

The proposal is also consistent with the RPS framework relating to environmental management, climate resilience and Tangata Whenua values. Existing land uses within the Development site

contribute to degraded water quality outcomes, peat oxidation and flood management constraints associated with intensive agricultural use on drained peat soils. The proposed development replaces these activities with an integrated stormwater and wetland attenuation system, ecological restoration measures, flood-resilient landform design and improved water management outcomes, which are anticipated to safeguard and enhance environmental values over time. Detailed hydrological modelling demonstrates that post-development flood effects can be appropriately managed without increasing off-site flood levels, while construction and operational effects will be addressed through staged infrastructure delivery and management plans.

The proposal further recognises and provides for Tangata Whenua relationships with the Kaituna River and broader environmental values through engagement with mana whenua, consideration of iwi management plans, incorporation of the Waitaha CIA (Appendix V), cultural monitoring provisions and wetland restoration. In this respect, the proposal is considered broadly consistent with Objectives 40, 13, 15 and 17 of the RPS and relevant iwi resource management issues concerning kaitiakitanga, mauri and early engagement.

4.3.7. Other Relevant Policy Documents

Whilst not specifically included in the strategy, the development supports the outcomes of SmartGrowth Strategy 2024–2074 and the UFTI, which advocate for integrated land use and transport planning. The proposal also reflects the WBOPDC's Residential Outcomes Framework by prioritising liveability, affordability, and enhancing neighbourhood character.

- **SmartGrowth Strategy 2024–2074:** Reinforces coordinated regional growth and infrastructure planning and provides further housing in the eastern corridor to meet the subregional housing supply shortage.
- **Urban Form and Transport Initiative:** Promotes integrated land use and transport outcomes.

4.4. SUMMARY OF APPROVALS & CONSENTS

This application is made under the FTAA for all necessary consents, approvals and other authorisation required to enable the comprehensive, staged development of the Wairakei South site. Overall, the Development proposal is to be considered as a non-complying activity due to the fact that the land is zoned Rural under District Plan zoning.

The proposal requires a combination of Fast-track approvals and associated statutory authorisations under other legislation. The Fast-track process is sought to provide an integrated, efficient consenting pathway for a project of regional scale and strategic importance, while ensuring that all relevant environmental effects and statutory considerations are appropriately addressed.

A summary of the approvals and statutory considerations relevant to the Development is provided below. A detailed schedule of approvals and permits that would otherwise be required form the consent authorities under standard consenting pathways is provided in Appendix AC (Wairakei South Consent Requirements Table).

In summary, the project requires:

- Under the RMA:

- Overall resource consent as a **discretionary** activity under the Bay of Plenty Regional Natural Resources Plan, for:
  - Large-scale earthworks (Discretionary).
  - Permanent discharge of stormwater (Restricted Discretionary).
  - Works in the bed of a stream (Discretionary).
  - Damming or diversion of water (Discretionary).
  - Discharge of contaminants (Discretionary).
  - Take and use of water (Discretionary).
  - Discharge structures in the bed of a stream (Restricted Discretionary).
  - Culverts in Bell Road Drain (Controlled).
  - Disturbance of contaminated land (Discretionary).
- Overall resource consent as a **non-complying** activity under the WBOPDC District Plan, for;
  - Land use consent to establish and operate residential and business activities and associated infrastructure (Non-complying).
  - Subdivision consent to create separate records of title to accommodate future residential and business activities and associated infrastructure (Non-complying).
  - Floodable areas: Subdivision (Discretionary).
  - Earthworks undertaken in association with a Non-complying activity (Non-complying).
  - Earthworks in a floodable area (Restricted Discretionary).
  - Depositing cleanfill to establish required landform for the subdivision (Restricted Discretionary).
  - Cancellation of consent notices (Discretionary).
  - Buildings/Structures not within an Approved Building Site – Natural Hazards (Restricted Discretionary).
  - The excavation or the digging of any drain within 20m of any flood control stopbank (Discretionary).
  - Lots for Network Utilities, Electricity Generating Infrastructure, Reserves and Public Open Space (Controlled).
  - New transformers, substations, switching stations (Discretionary).
  - Masts, poles, towers, aerials, dishes, antenna (Discretionary).
  - Boundary Adjustments (Restricted Discretionary).
  - New District Road (Restricted Discretionary).
  - Non-compliance with Transport, Access & Parking Activity Standards (Restricted Discretionary).

- Non-compliance with Loading requirements (Discretionary).

- Road furniture (Controlled).
- Overall resource consent as a **non-complying** activity under the Tauranga City Plan, for;
  - Land use consent to establish and operate residential and business activities and associated infrastructure (Non-complying).
  - Subdivision consent to create separate records of title to accommodate future residential and business activities and associated infrastructure (Discretionary).
  - Subdivision of land identified subject to Flooding from Rainfall Events (Discretionary).
  - Earthworks on land subject to Flooding from Rainfall Events (Restricted discretionary).
  - Earthworks in a floodable area (Restricted Discretionary).
- A restricted discretionary activity under Regulation 10 of the NESCS.
- A general authority to modify or destroy the whole or any part of any archaeological site(s) within the site, to address any accidental discoveries of archaeological sites.
- Authority under the Wildlife Act 1953 for salvage and incidental killing of native skinks.

With respect to the various consents required under the RMA, it is accepted that these are all sufficiently interrelated and/or overlap to the extent it is appropriate to bundle them. Thus overall, the project requires consent as a non-complying activity under the RMA. However, in that regard, it is noted that the gateway tests from Section 104D of the RMA are not to be applied for the purposes of assessing applications under the FTAA (see section 17(1)(b) of the FTAA). No approvals under the Freshwater Fisheries Regulations 1983 are required as no works are occurring in any natural stream or waterway.

A detailed schedule of relevant approvals required for the project is provided in the Wairakei South Consent Requirements Table (Appendix AC).

4.4.1. Western Bay of Plenty District Plan

The WBOPDC Plan enables a decision-making authority to carry out its functions under the Act; promoting the sustainable management of natural and physical resources. The plan was made operative on the 18 October 2017.

A detailed schedule of relevant approvals required for the project under the Plan is provided in Appendix AC (Wairakei South Consent Requirements Table), along with an assessment against the relevant Significant Issues identified in the Plan.

4.4.2. Tauranga City Plan

As noted in section 2.5 there is an area of the site adjacent to the TEL which the planning maps identify as having a TCC Rural zone, albeit the land is in the Western Bay of Plenty District. A key purpose of the TCC Rural Zones in the southern edge of the City (adjoining the Western Bay of Plenty District) is to manage the cumulative effects of any fragmentation of productive rural land through

subdivision and development in the interim period until such land may be needed for urban development. The Tauranga City plan was made operative on the 05 July 2014.

A detailed schedule of relevant approvals required for the project under the TCC Plan is provided in Appendix AC (Wairakei South Consent Requirements Table), along with an assessment against the relevant Significant Issues identified in the Plan.

4.4.3. Bay of Plenty Regional Natural Resources Plan

The Bay of Plenty Regional Natural Resources Plan (**RNRP**) provides the regional framework for the management of land use effects, discharges, wetlands, beds of water bodies, natural hazards, and contaminated land.

The proposed development involves a range of activities addressed by the RNRP, including large-scale earthworks, stormwater discharges, works within and adjacent to modified watercourses, diversion of water, and groundwater take. These activities are managed through a combination of permitted activities and resource consents where required.

The following significant issues of the RNRP are particularly relevant to the proposal:

- LM I1 (Issue 10) - Land use and management practices that are inappropriate to the specific characteristics of the site, including soil type, may cause adverse effects on the environment.
- LM I2 (Issue 13)- There is a lack of suitable riparian vegetation in some areas of the region necessary to stabilise the margins of surface water bodies and filter surface runoff.
- DW I6 (Issue 22)- The lack of integrated and comprehensive management of stormwater may increase adverse effects on the environment.
- DW I7 (Issue 23)- Stormwater can transport contaminants, particularly from urban and land disturbance activities.
- DW I8 (Issue 24)- Excessive stormwater discharge rates and volumes may cause erosion and scour.
- DW I9 (Issue 25)- increased impervious surfaces increase runoff volumes and concentrate flows, causing flooding and erosion.
- DW I10 (Issue 26)- Streams can be degraded if used as stormwater treatment systems or they are subject to increased discharge volumes.
- DW I12 (Issue 28)- Contaminated land and remediation activities may cause adverse environmental and public health effects.
- BW I1- Activities in, on, under or over the beds of streams, rivers and lakes may cause adverse effects on erosion, water quality, flood flows, ecological values, fish passage, natural character and wetlands.
- WL I1 - The majority of freshwater wetlands in the Bay of Plenty have been lost due to land development.
- WL I2- Wetland values can be damaged or destroyed by inappropriate use and development activities.

- NH I1- Human life, property and ecosystems can be adversely affected by flood hazards, and development may occur without recognition of that hazard.
- NH I2- Flood mitigation works can be damaged by inappropriate land use and development.

The Wairakei South Development responds proactively to the key land, water, wetland, and natural hazard issues identified within the RNRP through an integrated master planned approach informed by detailed technical assessment and long-term environmental management. Existing land use across the site is constrained by poorly drained peat soils, flood susceptibility, and the environmental pressures associated with ongoing dairy and arable farming activities, including nutrient leaching, sediment runoff, peat subsidence, and greenhouse gas emissions. The proposed Development replaces these fragmented and environmentally constrained land use practices with a coordinated urban structure supported by integrated stormwater management, extensive wetland restoration, riparian enhancement, flood mitigation infrastructure, and long-term ecological management. In particular, the proposal responds directly to Issues LM I1, DW I6–I10, BW I1, WL I1–I2, and NH I1–I2 through the use of water-sensitive urban design principles, comprehensive flood modelling, erosion and sediment controls, and the creation of a large-scale interconnected stormwater and wetland network intended to manage runoff volumes, improve water quality, reduce erosion and scour risk, and protect downstream receiving environments.

A significant component of the proposal is the establishment and enhancement of extensive constructed wetlands, stormwater conveyance corridors, and riparian planting throughout the Site. These systems are intended not only to manage flood storage and stormwater treatment, but also to restore ecological function, improve indigenous biodiversity outcomes, stabilise waterways, and enhance landscape amenity and recreational opportunities. The proposed wetland network is anticipated to become one of the largest integrated wetland restoration systems in the Bay of Plenty egion, directly addressing the historic loss and degradation of wetlands identified in Issues WL I1 and WL I2. Riparian planting and ecological restoration measures will assist in filtering runoff, improving stream margins, supporting habitat connectivity, and reducing contaminant transport associated with urban and land disturbance activities. Construction and operational management measures, including site-specific erosion and sediment controls, stormwater treatment systems, contaminated land management where required, and ongoing monitoring regimes, are intended to ensure adverse environmental effects are appropriately avoided, remedied, or mitigated throughout all stages of development.

The Development also responds positively to regional natural hazard and climate resilience issues through a design-led approach that recognises the Site's flood-prone characteristics and the long-term implications of climate change. Flood modelling, geotechnical investigations, peat management strategies, and integrated stormwater infrastructure design have informed the layout and staging of the Development to ensure resilient urban outcomes while protecting the functionality of flood mitigation systems and downstream environments. In addition, the proposal is expected to deliver broader environmental benefits through the reduction of nutrient losses associated with existing dairy farming operations, the avoidance of ongoing peat oxidation and subsidence through capping and managed development approaches, increased indigenous vegetation cover, and the opportunity to incorporate low-carbon infrastructure, renewable energy integration, and climate-responsive urban design over time.

A detailed schedule of relevant approvals required for the project under the RNRP is provided in Appendix AC (Wairakei South Consent Requirements Table).

4.5. NON-STATUTORY PLANS

4.5.1. Landscape Policy

Informing the WBOPDC District Plan and BOPRC Regional Plan are underlying Technical Assessments including:

- "The Visual Landscape, District Landscape Study for Western Bay of Plenty District Council, Boffa Miskell, 1993;
- Tauranga City Landscape Study, Boffa Miskell, 2008; and,
- Outstanding natural features and landscapes review, Bay of Plenty Region, Assessment Report, Boffa Miskell, 2007.

Given the site resides outside of the coastal environment, the Bay of Plenty Region Landscape Assessment of the Coastal Environment and the Natural Character Assessment of the Bay of Plenty Coastal Environment are not considered in this assessment.

4.5.2. Iwi Management Plans

The Waitaha Iwi Management Plan provides an understanding of the key issues and opportunities for addressing in the rohe of Te Kapu o Waitaharecognising in the plan that "the plan is also for anyone else conducting any activities that could affect our people, culture or resources".

The Tapuika Environmental Management Plan 2014 – 2024 also provides an understanding of key environmental issues and opportunities for the rohe of Tapuika.

Key matters arising from these documents have been considered in the project design, proposed mitigation, and consent framework, including:

- Early and ongoing engagement with Mana Whenua, including recognition of Waitaha and Tapuika expectations for meaningful involvement in resource management processes. The Tapuika Environmental Management Plan expressly states that it does not replace the need for direct engagement with Tapuika on environmental policy, planning, development and use.
- Recognition of Wairākei South as part of a wider cultural landscape, as opposed to a standalone development site. The Waitaha CIA (Appendix V) identifies enduring whakapapa, historical and cultural connections to the Wairākei South area, and confirms Waitaha's role as kaitiaki with responsibilities to protect the mauri of land, water and culturally significant landscapes.
- Recommended protection and enhancement of wai, wetlands, groundwater and stormwater systems, responding to both iwi management plan themes and the Waitaha CIA. The masterplan includes a modern integrated stormwater solution and substantial stormwater

treatment wetlands / corridors to manage floodwater, improve water quality, restore habitat and improve on current dairy farming land use practices.

- Management of earthworks and land modification risks, including cultural monitoring and an Accidental Discovery Protocol. The Waitaha CIA identifies earthworks, land reshaping, wai/groundwater interaction, mauri, wāhi tapu / kōiwi and kaitiakitanga as high-risk cultural matters requiring active design response, monitoring and partnership-based management.
- Recommended cultural monitoring during construction, particularly for bulk earthworks, excavations in geothermal influence areas and infrastructure trenching. Waitaha CIA recommends cultural monitoring, with authority to halt works where cultural risk is identified.
- A recommended site-specific Accidental Discovery Protocol, before works commence, including immediate cessation of works, site protection, notification, kōiwi tangata protocols, cultural ceremonies where required, and works resuming only with Waitaha approval.
- Indigenous biodiversity and restoration outcomes, including indigenous revegetation, waterway enhancement, habitat creation, support for Waitaha-led restoration projects, and landscape design reflecting indigenous ecosystems where appropriate.
- Cultural integration in design, including opportunities for naming, landscape expression, recognition of whakapapa and narratives, and design responses that reflect mana whenua values. Waitaha CIA specifically identifies naming strategies reflecting Waitaha whakapapa and narratives as part of the cultural design response.
- Proposed ongoing cultural health monitoring and reporting, including mauri-based monitoring, regular reporting to Waitaha and adaptive management if degradation occurs.
- Consent conditions to secure implementation, including a formal cultural partnership agreement, cultural monitoring during earthworks, Waitaha-approved ADP, indigenous landscape and planting plan, protection of geothermal systems, ongoing engagement, cultural induction for contractors and post-construction cultural review.
- The ability for other Mana Whenua to work in collaboration of the Waitaha CIA.

4.5.3. Transport Policy

Appendix 2 of the Integrated Transport Assessment (Appendix I) presents a summary of the following relevant transport policy documents:

- Government Policy Statement (**GPS**) – Transport
- Government Emissions Reduction Plan 2
- Regional Policy Statement (**RPS**)
- SmartGrowth
- Western Bay of Plenty Transport System Plan (**TSP**)
- Te Puke Spatial Plan

- Indicative Te Tumu Future Structure Plan
- WBOPDC District Plan
- WBOPDC – IDC

4.5.3.1. Key Themes

Several consistent themes emerge across the national, regional and local strategies and statutory documents. All emphasise growth management and sequencing, requiring new development to align with existing and planned infrastructure, particularly in the eastern corridor.

There is a strong focus on mode shift and emissions reduction, with increased use of public transport, walking and cycling supported by rapid transit corridors, active mode networks, park-and-ride, and zero-emission fleets. Resilience and safety remain prominent, with networks expected to withstand climate and hazard risks while reducing deaths and serious injuries through design and investment.

Integration of land use and transport is also a key theme, promoting compact, well-designed communities that reduce car dependency and strengthen access to jobs, housing and freight networks.

At the local level, the WBOPDC District Plan and IDC reinforce these outcomes through zoning, subdivision and engineering standards, while the Te Tumu Structure Plan demonstrates how coordinated staging, multimodal corridors and interchange capacity are critical to enabling large-scale greenfield growth.

4.5.3.2. Individual Snapshots

The **Government Policy Statement on Land Transport 2024** sets national transport investment priorities of growth and productivity, resilience, safety, and value for money, with more than $22b over three years. It reintroduces Roads of National Significance, supports alternative funding like tolling, and reinforces the Auckland–Hamilton–Tauranga freight triangle. Wairakei South aligns by unlocking housing and jobs in the eastern corridor, connecting to the TEL and PEI, and delivering resilient, safe networks.

The **Emissions Reduction Plan 2** provides the policy framework to cut transport emissions through EV uptake, road user charging, time-of-use pricing, zero-emission PT fleets, and support for green freight. Wairakei South is relevant through future-proofed PT corridors, EV charging potential at the PEI, walkable neighbourhoods, and a multimodal hierarchy that supports long-term decarbonisation.

The **Bay of Plenty Regional Policy Statement** provides the statutory framework for compact growth, integrated transport, sequencing of development, and alignment with infrastructure capacity. Wairakei South fits as a logical extension of Wairakei, provided it delivers sustainable infrastructure, multimodal integration with the PEI and The Boulevard, and compact, walkable communities.

The **SmartGrowth Strategy 2024–2074** is the sub-regional growth management partnership plan, designating Priority Development Areas (**PDA**s) such as Wairakei and Te Tumu. While Wairakei South is not included, it sits alongside these PDAs and should reflect the same principles of sequencing, connectivity, and compact growth consistent with the Connected Centres framework.

Western Bay of Plenty Transport System Plan is the 30-year implementation plan for UFTI, staging key investments for mode shift and sustainable growth. It prioritises collector roads, bus priority, HOV lanes, park-and-ride, and multimodal corridors in the eastern growth areas. Wairakei South must integrate into these projects, ensuring PT alignment and active mode connectivity.

The Puke Spatial Plan frames Te Puke within the eastern corridor, with focus on congestion relief, freight links to Rangiuru and TEL, diversification of travel modes, and climate resilience. Wairakei South should align with these principles, supporting corridor-wide coordination, freight access, multimodal design, and integrated stormwater and resilience measures.

The draft **Te Tumu Structure Plan** provides for a coastal community of 15,500–25,000 people and around 2,500 jobs, centred on the Golden Sands Town Centre and supported by a transit-oriented network. Key elements include a rapid transit spine along The Boulevard, four-laning of Te Okuroa Drive, and strategic reliance on the Papamoa East Interchange (PEI), with provision for long-term links via Bell Road and Kaituna. Transport modelling confirms high internalisation of trips if local services are delivered alongside housing, and staging allows up to 1,450 dwellings via The Boulevard before further upgrades are required.

The WBOPDC **District Plan** is the statutory framework managing land use and subdivision across the District. Wairakei South is currently zoned Rural, with State Highway SH2 and the Papamoa East InterchangePEI designated for strategic infrastructure. Urbanisation will require rezoning through a plan change, and any development must align with objectives for compact urban form, integrated transport and land use, and protection of environmental and cultural values.

The **WBOPDC IDC** sets the design and construction standards for subdivision and development infrastructure, ensuring assets vested in Council are safe, consistent and sustainable. It combines high-level design principles—such as integrated land use and transport, walkable neighbourhoods, multimodal networks, and low-impact stormwater management—with detailed construction standards for roads, pavements, footpaths, cycleways, kerbs, drainage, signage and testing. Aligned with strategies including SmartGrowth and the Walking and Cycling Strategy, it provides both a baseline for compliance and scope for innovative solutions.

5. CONSULTATION AND ENGAGEMENT

The consultation process for Wairakei South was informed through key principles of ensuring transparency, accountability and responsiveness to stakeholder feedback. Engagement was tailored to reflect key interests, and stakeholder involvement in the process. The consultation process for Wairakei South has been constructive and has proactively assisted with identifying key themes to refine the proposal. The Consultation Report and a full and extensive consultation and engagement record is included in Appendix AB.

5.1. CONSULTATION WITH MANA WHENUA AND TANGATA WHENUA

[redacted]

5.2. CONSULTATION WITH COUNCILS

WBOPRC have been engaged in consultation throughout the development of the project over a period of approximately 18 months. This process was ongoing and occurred through a range of communications, including in person meetings, workshops, emails and online meetings. The consultation occurred both independently and jointly with other agencies and specialists and was undertaken at key stages of project development. Engagement focused on strategic planning

alignment, infrastructure servicing and modelling methodologies, with the purpose of keeping WBOPRC fully informed and allowing for feedback as the proposal progressed.

TCC was consulted throughout the Development of the project. Engagement with TCC was typically through meetings and email correspondence and included direct communication as well as group engagement. TCC was kept informed on key elements of the proposal.

BOPRC have had extensive involvement and consultation throughout this project. Consultation occurred at key stages to inform the proposal and enable BOPRC input as it progressed, across a wide range of teams (including Rivers & Drainage). BOPRC participated in early meetings to discuss project overview. Ongoing engagement continued throughout, with meetings, workshops and communications on stormwater, flood modelling, and wastewater. Engagement is expected to continue through the consenting process.

5.3. CONSULTATION WITH GOVERNMENT AGENCIES AND OTHER STAKEHOLDERS

Correspondence with NZTA has been ongoing since May 2025. This has primarily been focused on modelling and growth options, PEI (including segregation strip and future signal phasing) and Bell Road Link for Te Tumu, PDAs, Public Transport, intersection modelling, works and engagement programme and safety audits.

Formal Fast-track pre-lodgment engagement with the Department of Conservation (**DOC**) is progressing. Relevant project information has been provided to DOC, a consultation summary has been provided by DOC to accompany this application (Appendix AB).

Confirmation was received from Powerco via email (dated 6 August 2025) that an upgrade will be required to provide a suitable connection point for all units/lots in the development. Ongoing email correspondence has occurred.

On 24 July 2025, and further on 24 October 2025, Tuatahi First Fibre (**TFF**) confirmed that, provided an installation agreement was entered into, TFF would be able to provide telecommunication services to the proposed development.

The Reticulation will be installed in accordance with:

a) the requirements and standards set by the WBOPDC and advised to TFF via the WBOPDC's website; and
b) the requirements of the Telecommunications Act 2001 and all other applicable laws, regulations and codes (as amended).

The Reticulation will be installed by Tuatahi's preferred provider to their satisfaction. TFF would be the owner, operator and maintainer of the reticulation. One or more retail service providers will be available to supply telecommunications services over the completed Reticulation when service is available. Servicing this area has been included as part of TFFs long-term planning.

An email was received from First Gas with respect to gas reticulation of the site. Paul Bird – Distribution Development Manager, noted that while gas reticulation is to be provided to serve the

residential lots, the cost to extend the network and all future reticulation and connection costs would be borne by the end user. The most appropriate supply of LPG will be via bottles rather than an extension to the reticulated network. This will be on an as-needed basis, and up to individual landowners whether they utilized this. Given this outcome, confirmation of supply has not been provided.

5.4. LANDOWNERS

Consultation for the project with adjoining landowners commenced in 2021 for early landowner engagement, intensifying from mid-2025 through early 2026 as part of the FTAA process. Adjoining landowners have been identified in the Consultation Report at Appendix AB. Engagement methods were varied and tailored to each stakeholder, including emails, hand-delivered letters, phone calls, and numerous in-person meetings to ensure transparent communication. Initial contact typically involved issuing consultation letters and updated concept plans, followed by structured meetings to present the development overview, explain the FTAA process, and address technical matters such as stormwater modelling, roading, and network capacity.

The process also included ongoing communication with neighbouring landowners, and opportunities for stakeholders to provide feedback or letters of support. Several stakeholders participated in broader forums such as the Kaituna Catchment Control Scheme Advisory Group, ensuring alignment with regional interests. Overall, the consultation was iterative, responsive, and comprehensive, aiming to maintain open dialogue, resolve concerns, and document all interactions to support the project's statutory requirements.

Letters of support have been provided by Armer Farms (NI) Limited, Graham and Julie Thompson, Marie and Matt Went, Tranz Port NZ Limited, Phillip and Andrew Dovaston and Perpetual Guardian Trust. Neutral support has been provided by Powerco Limited.

6. ASSESSMENT OF ENVIRONMENTAL EFFECTS (AEE)

6.1. FLOODING AND STORMWATER EFFECTS

6.1.1. Flooding

The proposed development demonstrates a robust and resilient approach to flood risk management, as demonstrated by the Flood Modelling Report (Appendix H), Infrastructure Report (Appendix F) and Stormwater Management Plan (Appendix G). Also included in Appendix H is a Flood Modelling Peer Review Memo provided by Awa, summarising that Awa considers the modelling suitable to support the applicant's current substantive fast-track application based on the assumption that the 100-year climate change event is the key event to evaluate if flood volumes and levels can be managed.

By integrating engineered solutions, such as pump stations and strategically placed stopbanks, with careful consideration of existing and future conditions, the design provides a long-term, sustainable outcome. The project not only mitigates risk within the immediate site but also contributes positively to the broader catchment, reinforcing the region's flood resilience and safeguarding both property and infrastructure for future climate scenarios.

6.1.1.1. Stormwater System Overview

The stormwater system incorporates conveyance swales, wetlands, and attenuation measures to avoid any adverse impacts on adjoining properties while providing treatment and storage to meet Council requirements prior to discharge.

The proposed stormwater plan for the site (Appendix D) includes engineered wetland swales and two new stormwater attenuation ponds, which will replace the existing farm drains, to manage groundwater levels and convey surface water from west of the site towards the Kaituna River.

All newly developed areas have been designed to maintain freeboard above the expected water surface elevations for extreme events, including the 100-year, 2130 scenario with a 3.68 °C temperature increase and a sea level rise of 1.59 m. This ensures that habitable dwellings, farm buildings, and other critical assets are adequately protected from flooding, while stormwater is directed safely to designated storage and pasture areas.

6.1.1.2. Flood Modelling Results

The detailed flood models prepared by Maven and peer reviewed by Awa (Appendix H) factor in climate change effects and consider the existing flood mitigation measures in place within the vicinity of the development including the stop banks supporting the Kopuaroa Canal and Kaituna River and pump stations and flood weirs located within the canals and adjacent to the Kaituna River.

The proposed development levels have been formed to mitigate flooding on the development platforms under all cases.

The pre-development flood levels are demonstrated on Figure 42 below, showing > 1m of inundation across the development site in the 100-year ARI (including climate change and sea level rise) event.

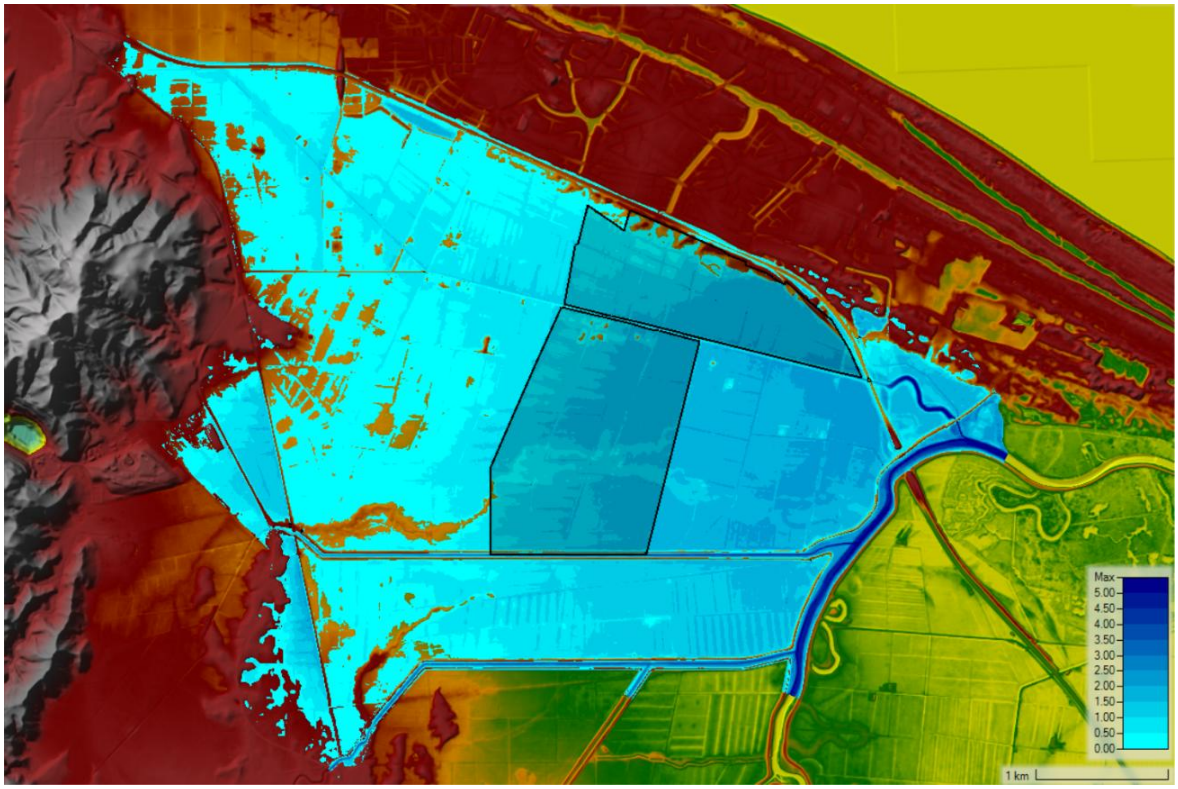


Figure 42: Hec RAS Model, Pre Dev: 100Yr 3.68C 1.59SLR (Source: Flood Modelling Report, Appendix H)

The results of post-development modelling indicate a general decrease in flood levels across all storm frequencies when comparing pre-development and post-development scenarios primarily due to the additional pump capacity incorporated into the design. No upstream or downstream increases occur during peak events, and no culvert connections have been provided to Papamoa on the northern side of the TEL . This approach isolates the system, ensuring that backflow from the wider catchment is not introduced and that flood levels at the catchment boundaries remain unaffected. This is depicted in Figure 43 and Table 10 below.

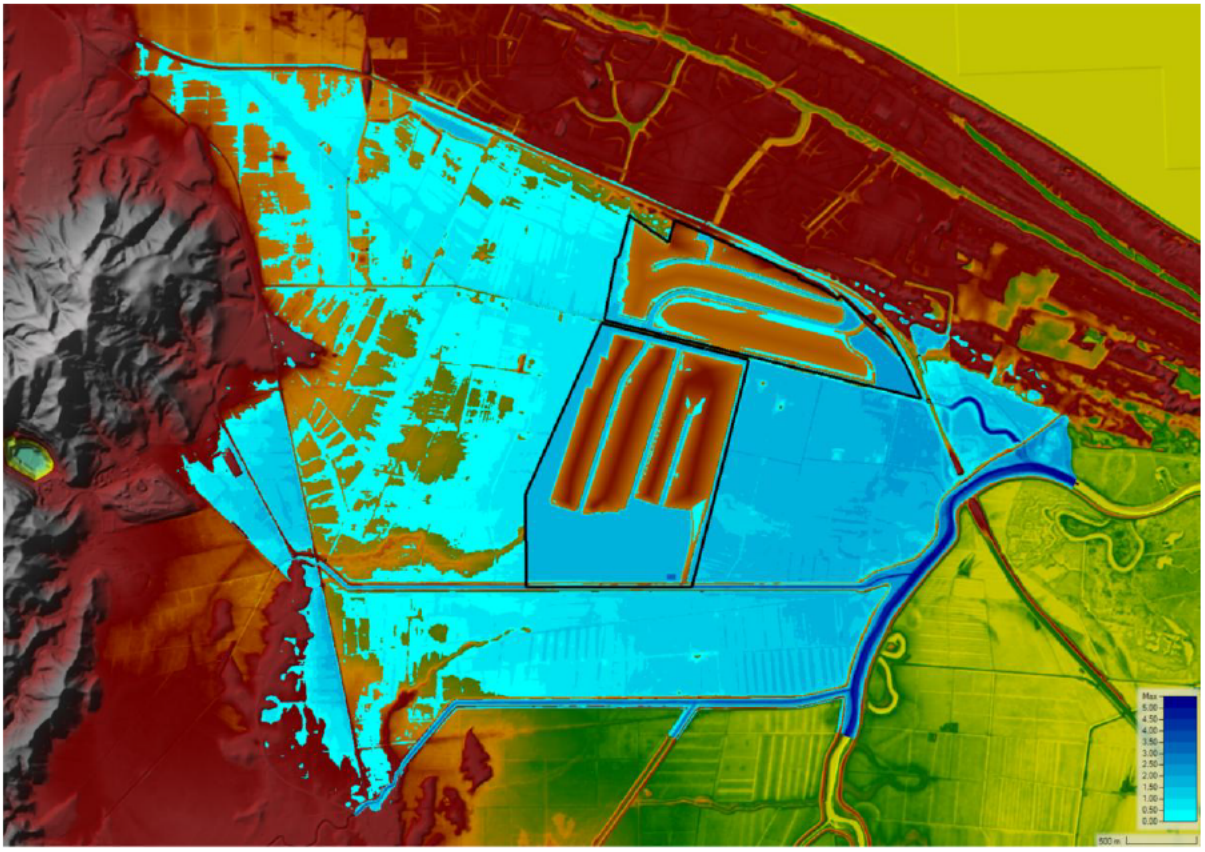


Figure 43: 100yr ARI 3.68°C Climate Change SLR 1.59m, Post-Development Flood Depths (m) (Source: Flood Modelling Report, Appendix H)

The proposed new pumping system generally improves water surface levels within the Bell Road catchment during the 10-year event, with small increases in the Kopuaroa Canal and Kaituna River due to slightly higher peak flows.

For the 100-year event, the modelling shows that impacts are largely neutral or show minor improvements compared to pre-development levels, with small increases in the Kopuaroa Canal and Kaituna River due to slightly higher peak flows.

Table 10: Difference between Pre-development and Post-development flood levels for Climate Change 3.68°C with SLR 1.59m

	5-year	10-year	50-year	100-year	500-year	
Site Flow	+0.5	+3.4	+4.0	-8.0	-28.8	m^3/s
Time of Peak	Same time	Same time	Same time	Same time	Same time	hh:mm
Flood Level	-0.09(North) -0.33(South)	+0.04(North) -0.34(South)	-0.20(North) -0.21(South)	-0.11(North) -0.11(South)	+0.02(North) +0.02(South)	m NZVD16
Flood Depth	-0.06(North) -0.32(South)	+0.06(North) -0.33(South)	-0.19(North) -0.21(South)	-0.10(North) -0.10(South)	+0.03(North) +0.02(South)	m

6.1.1.3. Design Freeboard

The proposed development requires all new building platforms to be formed at least 500mm above the 100-year ARI (3.68°C) flood level. This equates to a minimum compliant building platform level of RL 2.99m to achieve the required freeboard.

Building platform levels are specified (rather than minimum finished floor levels) to ensure the required finished floor freeboard is achieved once subdivision and final building works are completed. The current ground level design adopts a minimum building platform level of RL 3.50m, which provides greater than 500mm freeboard above the 100-year flood level.

6.1.1.4. Stopbanks

BOPRC has initiated a capacity review of the Kopuaroa Canal, including the potential need for stopbank upgrades. Minor impacts on stopbank freeboard have been observed in the Flood Modelling Report (Appendix H), with a 40 to 100mm increase in water surface elevation within the Kopuaroa Canal.

Under the BOPRC 2024–2074 asset management plan, stopbank freeboard and capacity will be reassessed as the site progresses, with upgrades or top-ups implemented as required.

6.1.2. Stormwater & Water Quality

Stormwater quality treatment for the development has been designed by Maven in accordance with the BOPRC Stormwater Management Guidelines 2012. The primary treatment method across the site is wetland swales, designed in line with the recommended approach and based on storage and residence time.

The treatment network is design to have a level of treatment that accords with the BOPRC Stormwater Management Guidelines:

- TSS: ~70–90%.
- Nitrogen: ~15%.
- Phosphorus: ~25%.

In short, the stormwater quality strategy relies on primary treatment via wetland swales and wetlands. Wetland and swale sizing and inverts have been designed in accordance with ENGEO who have provided inputs to groundwater levels.

Discharges from roads will be collected by grassed swales and conveyed to an appropriate crossing point. Erosion effects are unlikely to occur as a result of the increased volumes of diverted stormwater as the swales carrying the stormwater will dissipate flows and the rock aprons or reno mattresses at the pumpstation outlet will provide protection against erosion.

This proposed design will require Bell Road drain to be diverted through the site on the western side then into the Kopuaroa Canal via a 50 m+ greenway, which will also provide storage.

The diversion from Bell Road, classified as drain water quality (DWQ), to the Kopuaroa Canal, classified as “modified with ecological value (MEV)” has the potential to affect water quality downstream of the point where the Bell Road Drain enters the Kopuaroa Canal and the ~1.5 km

section of canal before entering the Kaituna River and the ecological values within the receiving environment.

Stormwater swales are proposed on the site which will provide effective on-site treatment of stormwater and would likely improve water quality leaving the site compared to the present situation where there no treatment on the site.

Based on the similar water quality characteristics of the two watercourse types, the diversion could potentially result in similar concentrations of nutrients in the reach between the diversion entering the canal and the Kaituna River. The diversion inputs would also likely increase, the extent of which depends on volume of nutrients in this section of the canal, noting that there would likely be no noticeable change in the Kaituna River.

On this basis, the only foreseeable effect could be on the canal, downstream of where the diverted Bell Road drain enters the canal. Given the poor existing environment and the low ecological values in the waterway, the magnitude of effects on the receiving environment will likely be 'low' considering the level of modification and impact from surrounding land use. Based on the stormwater design and management plans provided by Maven (2025) the overall level of effect of stormwater on the receiving environment is assessed as 'very low' to 'low'.

6.1.2.1. Stormwater Monitoring Plan

Ecological Solutions Limited have prepared a Stormwater Monitoring Plan for the project (Appendix AI). Full details on the stormwater monitoring can be found in the Plan and are summarised below.

Water quality sampling will be carried out at the two stormwater discharge sites and in the Kopuaroa Canal and Bell Road Drain upstream and downstream of the discharges (Figure 44).

Figure 44: Water Quality Sampling Locations (*Source: Stormwater Monitoring Plan, Appendix AI*)

A stormwater monitoring regime is proposed as set out in the suggested consent conditions (Appendix AD) which will continue until the residential development is completed. Following this, if no water quality effects are detected the monitoring programme will cease as proposed by the conditions.

6.2. ECONOMIC AND SOCIAL EFFECTS

The national 'value-added per employee' for each sector has been used to estimate the FTE employment for Wairakei South by Urban Economics. This along with a detailed assessment of the Economic Effects is set out in the Economic Assessment (see Appendix Z). Figure 45 below outlines the FTEs and value-added to the construction sector GDP that the proposed development would generate.

Activity	Lot Type	Count/ Total GFA	Avg Lot Size (m^2)	Avg GFA (m^2)	Value ($M)**	Value Added GDP ($M)	FTE Employees
Residential	[redacted]						
Industrial							
Other Business							
Primary School							
Total*							

*This excludes related quarrying activity to the development, which would generate additional economic GDP and FTE employment.
**Calculated as 80% of total value to exclude profit.
Source: UE, Statistics NZ

Figure 45: Value-Added GDP & FTE Employee Estimates (Source: Economic Assessment, Appendix Z)

The Wairakei South Development has been identified through the Regional Deals process involving Central Government, TCC, WBOPDC, and Priority One, as a key location for future urban growth within the Western Bay of Plenty sub-region.

Wairakei South will result in significant economic benefits to the Western Bay of Plenty sub-region and the wider Bay of Plenty region. In particular the project will

- Provide substantial supply at pace and scale, providing 2,729 additional residential lots to a supply constrained market;
- Improve housing affordability outcomes over time by providing a range of relatively affordable dwellings and put downward pressure on new housing prices;
- Provide approximately 54 hectares (76 lots) of business land which would support additional permanent employment opportunities for future residents, particularly in the localised market;

- Support net additional construction sector GDP and employment, of $1,121.0 million and 8,430 FTE jobs;
- Enable ongoing population growth, leading to significant net additional GDP and employment, of $66.3 million and 585 FTE jobs;
- Support retail sector GDP contribution of $29.0 million and 298 FTE jobs annually; and
- Generate ongoing quarrying activity during construction, equating to a direct GDP contribution of $26.0 million and approximately 140 FTE jobs

Overall, the Development would generate a total GDP contribution during construction of $1,147.0 million and 8,570 FTEs, and ongoing GDP contribution of $95.3 million and 883 FTE jobs every year.

The proposal would displace land currently suitable for use as a dairy run-off block, with an estimated economic value of approximately $17.3 million. This, however, is not considered to be out of proportion with the economic benefits resulting from the construction of the Development. Overall, the proposal leads to significant positive economic benefits consistent with the purpose of the FTAA.

6.3. LAND DISTURBANCE EFFECTS

6.3.1. Earthworks and Sedimentation Effects

An Earthworks Management Plan has been prepared for Wairakei South (see Appendix U). The activity most likely to cause sedimentation effects is the earthworks required to develop the wider site and during the construction of the pumpstations. Because the proposal requires reclamation of all artificial drains on site, the ecological risk to the internal watercourses is nil assuming that the artificial drains are re-claimed prior to earthworks. Once the drains have been reclaimed, there is a remaining risk to the receiving environment through the on-going development.

Earthworks associated with constructing the proposed sub-division and pumpstation have the potential to result in bulk sediments entering the Kopuaroa Canal and the Kaituna River. The addition of fine sediment has the potential to alter water chemistry, increase turbidity, smother instream surfaces, and adversely affect aquatic biota.

The Kopuaroa Canal is separated from the site by an earth bunded stop bank which extends beyond the length of the southern site boundary. If this remains intact during the earthworks and site development, the risk of sediment entering the drain will be low.

Consequently, the sedimentation of Kopuaroa Canal and the Kaituna River was considered to have a pre-effects management magnitude of effect of 'moderate' and a pre-effects management level of effect of 'moderate'.

All earthworks are to be carried out in accordance with the BOPRC guidelines (BOPRC 2012) and controls should include silt fencing around watercourses within the earthwork's footprint, and a network of decanting earth bunds to settle suspended material before run-off is discharged. Temporary nova coil and geotextile fabric should be incorporated into the clean and dirty water diversions to prevent run-off through earthworks surfaces.

Dust will be managed in accordance with the Draft Construction Management Plan (Appendix AL), as follows:

- Construction Management Plan to be compiled and implemented.
- Monitoring – Weather conditions will be monitored to inform risk.
- Dust suppressant systems can be implemented using K-Line or standpipe irrigators connected to a reliable source of water. Soaker hoses for stockpiles can also be implemented.
- Dust suppressant additives can be applied to haul roads or other open areas as required.
- Haul route maintenance – trimming of haul routes to keep loose material from traffic lanes can be implemented.
- Haul route planning – location of haul routes can be planned to lessen impacts of dust generation.
- Geotextile coverage – stockpiles or temporary work faces can be covered in geotextile to provide dust suppression.

6.3.2. Contaminated Land Effects

Contaminants were primarily identified within shallow topsoil and historic fill materials. Elevated zinc and copper concentrations exceeding standard ecological protection criteria were detected in samples from the Bell Road Drain, likely reflecting contributions from both on-site activities and the upstream agricultural catchment. The ENGEO DSI Report (Appendix S) concludes that the overall risk to human health, ecological values, and water quality as low, as contaminated soils will be isolated beneath imported clean fill and managed through effective erosion and sediment control measures.

6.3.2.1. Contaminated Site Management Plan

The application is also supported by a ENGEO Draft CSMP (Appendix AK). The objectives of the CSMP are to:

- Support the application for the development through a Fast-track Consent.
- Outline additional investigation requirements in areas of the site that were inaccessible and have been subject to intrusive investigations to date.
- Provide remedial actions for the site based on previous investigation(s), results of additional investigations, and / or unexpected discovery of contamination, where required.
- Ensure oversight, validation and reporting of remedial works, if required.
- Outline management procedures and controls to be implemented during disturbance of contaminated soils to mitigate risks to human health and the environment.
- Outline actions to be undertake if unidentified contamination is encountered.
- Set reporting requirements, including:
- Additional investigations.

- Remedial Action Plan development, if required; and
- Works Completion / Site Validation.

6.3.2.2. Development Suitability – Human Health Risk

Contamination identified on site to date is confined to near surface topsoil and fill material. Current site plans propose substantial filling to elevate the development above existing flood plain levels. The use of engineered barriers and clean fill materials offers both physical and chemical separation between any remaining contaminants and future end users of the site. It is expected that these activities will eliminate the pathway to future site users.

The removal of exposure pathways means that future users of the site - including residents, workers, and visitors - will not have direct contact with potentially contaminated soils and indirect exposure routes, such as the ingestion of home-grown produce cultivated in contaminated ground. Inhalation of dust particles generated during site use or landscaping activities is also eliminated. No volatile contaminants have been identified by investigations on site to date.

The Development will include connection to municipal services and therefore groundwater is not considered a viable pathway for ingestion (i.e. as a potable water source). It is not anticipated that future surface water bodies (stormwater reserve) are proposed to be used for recreation activities (swimming, fishing etc).

Considering the above, the risk to human health upon completion of the Development is considered to be very low, and it is suitable for redevelopment. Additional investigations will be required in previously inaccessible properties to confirm the above conclusions remain valid. Should the design or construction methodology change from that assumed, this will require review by a SQEP. If surplus to requirements, contaminated soils presenting risk to human health can be:

- Retained on-site in areas or lower sensitivity land use, with the possible need for encapsulation; or
- Stabilised to reduce mobility; or
- Disposed off-site to an appropriately consented landfill.

6.3.2.3. Development Suitability - Environmental Risks

Key environmental receptors at the site include:

- On-site terrestrial eco-fauna (biota such as soil microbes, plants, and soil invertebrates); and
- Downgradient aquatic habitats.

Terrestrial Ecology

In consideration of on-site ecofauna, the landform is proposed to be raised without prior stripping or re-use of existing surface soils for stabilisation purposes. As such, any new eco fauna and soil biota present at the site post-development will be imported with clean topsoil or slowly migrate over time

to site. The raising of the landform limits future interaction with contamination in existing topsoil on-site, and thus a clear plausible pathway for receptors cannot be established.

Aquatic Habitats

Two pathways are identified for exposure to aquatic habitats:

- Mobilisation of contaminated soil, as sediment in response to erosion, to overland flow paths and surface water bodies.
- Leaching of contaminants from hotspots in soil to groundwater, and mobilisation to surface water. This will be driven by relative rise in groundwater in response to filling, or infiltration due to rainfall events.

Exceedances of the ANZG criteria for 80% level of protection of species for SPLP data of on-site contaminants are limited to discrete locations within Areas A1, A3, and C1, all of which are situated at a considerable distance from sensitive ecological receptors such as the Kaituna River, further than 2km from the nearest sample exceedance.

The closest existing surface water body, the Bell Road Drain (and / or feeder drains) which runs through the site shows some evidence of impact by existing and upgradient land use in the area (agricultural, horticultural) and as per the ANZG guidance is likely to meet the threshold of a highly disturbed system.

It is considered that any migration of leachable contaminants to the Bell Road Drain would have a negligible effect on the existing water quality. Additionally, large volume stormwater reserves are planned as a component of future stormwater management strategies and the Bell Road Drain is proposed to be connected to the reserves (which will function as passive treatment systems), likely resulting in reducing contaminant loads and potentially improving water quality discharges into the Kaituna River.

Considering the above, long term risk to aquatic habitats arising from the proposed development are anticipated to be low, however care should be taken during construction to limit adverse discharges during disturbance of soils and stabilise landforms to prevent erosion and scour during future design where new surface water drains and channels intercept the current shallow topsoil layer (particularly where exceedances are reported).

Where existing drains are dredged or de-silted as part of stormwater improvement works, this sediment material requires segregation, drying and testing prior to making a decision on final end use.

6.3.2.4. Construction Phase Risks

The placement of fill over the existing topsoil and areas of fill limits the amount of exposure site workers will have to contaminated soils and limit the amount of accidental airborne or waterborne discharges. It is unlikely that exposure of site workers to contaminated soil can completely be ruled out, and a CSMP will be required. Outstanding construction phase risks, requiring allowance in budget and programme, include:

- Completion of investigations to test and report currently inaccessible areas. It has been recommended that these investigations are reported as part of an updated DSI report. Uncharacterised areas not sampled should be assumed contaminated.
- The survey and removal of asbestos from any buildings that pre-date 2000, and potential for additional asbestos management should known hotspots in soil be disturbed.
- Sediment is likely to require dredging and de-silting from current drains and waterways to improve capacity or modify alignments. This sediment will need more robust characterisation to inform final re-use opportunities (such as landscaping) or off-site disposal. Allowance should be made for:
- Investigation to understand depth and extent of sediment in drains and characterise environmental quality.
- Excavation and temporary stockpiling to dry out on site through construction.
- Design of appropriate Erosion and Sediment Controls to capture and discharge run-off.
- Should dewatering be required, it is unlikely to that water quality would meet regional stormwater standards (typically similar to ANZG standards for protection of 95% freshwater species).
- Asbestos pipes have been observed across the development footprint during the course of investigations.

6.3.2.5. Waste Disposal and Sustainability Opportunities

The proposed Development plan includes strategies to retain and lower risks from historical contamination, such as capping via filling. Taking this approach, its integration into broader catchment management frameworks and noting the distance from sensitive areas, these measures ensure that both human health and environmental risks are kept low. By leaving contamination on-site, the traditional "dig and dump" method is avoided, preventing soil from unnecessarily ending up in landfills and reducing truck movements associated with cartage.

On the basis the project philosophy emphasised on importing fill to the site and containing the identified contamination, minimal waste is expected to be generated associated with contaminated land. If contaminated soil material is to be removed from the site, it will not meet the requirements of cleanfill and likely require disposal at Green Park in Oropi, or Hampton Downs / Ridge Road in North Waikato.

The project design, which includes the construction of large-scale stormwater reserves, takes advantage of natural processes like sedimentation, filtration, and microbial activity to improve water quality before water is discharged into sensitive waterways. This is likely to result in net improvement in discharges to the Kaituna in comparison to current conditions. These passive treatment systems help reduce contaminant levels and promote local biodiversity by creating habitats for wetland plants and aquatic species. As a result, they address immediate stormwater management challenges while also supporting the long-term ecological sustainability of the area.

6.3.2.6. Recommendations

ENGEO has made recommendations to mitigate contaminated land effects, associated with land disturbance (based on both desktop and intrusive investigations):

- Contaminated Land SQEP: Retention to provide advice and input into any future project risk or design workshops, undertake additional investigation and assessments, and inform future stages of design, tendering and construction.
- Further Soil Investigation: Completion of investigations at 285, 285A, 314 and 339 Bell Road to confirm contamination conditions within these areas, update risk, and develop suitable management strategies as required.
- Risk Assessment: Further risk assessment to human health and environmental receptors will be where changes to the design, development plan or construction methodology beyond that described in their assessment are proposed.
- Development of a CSMP prepared by a SQEP to outline management of potential human health and environmental risks during soil / sediment disturbance and construction activities. The CSMP will be a live document and will require updates as further investigation and assessment is completed. A draft version of the CSMP is included as Appendix AK.
- Temporary laydown: Identify areas suitable for laydown of surplus soil and sediment if likely to be required during construction. Laydown areas will be positioned to avoid double handling and creating obstructions during development.
- Construction phase: Consider construction phase activities early, such as sustainable reuse of excavated soils elsewhere on the site or wider property (subject to management controls), mitigation through design (ground gas, discharges).
- Potential Asbestos Pipes: Mapping and making safe of asbestos pipes present across the development footprint.

6.3.3. Hydrogeological Effects

6.3.3.1. Effects on Groundwater Levels and Gradients

Changes to groundwater levels and gradients will be less than 0.4m beyond the site boundary. ENGEO modelling results from the Hydrological Assessment Report (Appendix R) confirm minor drawdowns are anticipated near the southern and northeastern attenuation ponds, with localized drawdown also anticipated in the northeastern corner of the site. Across the wider area surrounding the site, groundwater levels and gradients are not expected to be appreciably impacted by the development.

Within the site, groundwater heads will experience localized changes, with drawdown occurring where new drains are introduced and slight mounding where existing drains are backfilled. Post-development modelling indicates that groundwater levels will be one meter below the finished ground level of the development filled surface, supported by the installation of sand drainage blanket beneath the fill. Groundwater is modelled to remain greater than 1m below the designed surface level even under sensitivity scenarios that include 200% rainfall infiltration to pumice,

reduced pumice permeability and a 1% AEP rainfall event. Assessment of the groundwater impact from a 1% AEP rainfall event indicates that, even when groundwater attenuation ponds and swales reach capacity during extreme rain, they have little effect on groundwater levels within the pumice fill. The only exception is minor, local increases near the swales, which subside once the rainfall event ends.

The post development modelling suggests groundwater levels tend to rise more significantly after long durations of moderate rainfall, than after specific intense 'design storm' rainfall events, due to the low infiltration capacity and associated high proportion of runoff. Future climates in the Bay of Plenty are expected to be drier yet accompanied by more intense rainfall events and although this does not eliminate the possibility of increasing groundwater levels, it implies that the risk under future climate conditions may be lower than in regions expecting future climate conditions to have consistently moderate rainfall.

Drawdown of 0.2m is also predicted on the northwest corner of the site and 0.5m near the location of the existing underpass structure and 0.3 adjacent the northeastern attenuation pond. Land use is primarily agricultural farmland with the TEL further north. Drawdown in the north of the site extends further as the geology in this area is mapped as dune sand of high hydraulic conductivity; 2m of drawdown is mapped under the TEL. The potential for consolidation settlement in sand is low due to this material exhibiting elastic settlement characteristics and therefore we consider the potential for adverse effects to be less than minor.

6.3.3.2. Effects on Groundwater Mass Balance

The overall mass balance as assessed by ENGEO in the Hydrogeological Assessment Report (Appendix R) shows a 60% reduction in rainfall infiltration to groundwater (recharge) onsite due to the increase of impermeable surfaces associated with converting the flat farmland into an elevated, graded development and the site development platform being constructed from low hydraulic conductivity pumice fill. The balance is partitioned as overland flow or direct runoff to stormwater which is not simulated within the groundwater flow model and is considered and mitigated through the design of stormwater management features such as swales and attenuation ponds as part of the civil works stormwater design.

The reduced infiltration to groundwater results in a 33% reduction in groundwater discharge to drains and swales under average conditions. This equates to 3,700 m^3/day in the post development scenario. This water will be conveyed through the site swales and attenuation ponds before discharging to the Bell Road drain or the Kopuaroa Canal through an outflow to align with pre-development conditions. The rate of groundwater discharge is small compared to the stormwater during a storm event. As a conservative assumption, the groundwater discharge component of the total flow was multiplied by an order of magnitude when incorporated into the stormwater modelling simulations to provide a conservative assessment and account for uncertainty in the model outputs.

6.3.3.3. Earthworks Trial

As discussed throughout the Hydrogeological Report (Appendix R), there is no onsite testing of the proposed pumice fill. Additional confidence in the model outcomes can be obtained if in situ testing of infiltration and hydraulic conductivity can be completed.

It is recommended to utilise any embankment trials as an opportunity to perform site-specific testing on the pumice to obtain measured hydraulic parameters of the compacted pumice in situ material.

Should results from site-specific testing yield parameters that differ significantly from those applied in this assessment, the groundwater analysis should be revised accordingly to evaluate any potential changes in groundwater effects.

Recommended testing procedures include:

- Construction of a graded test pad to replicate the equipment, materials, and compactive effort planned for the project. A minimum basal pad size of 10 x 20 m is recommended from a hydrogeological perspective.
- Vertical infiltration soakage tests in pumice fill (recompacted samples when source materials confirmed and during site trial).
- Groundwater monitoring within and below the pumice layer for groundwater mounding potential.
- Hydraulic conductivity testing in pumice.

The above matters are reflected in the recommended conditions of consent (see Appendix AD).

6.4. TRAFFIC AND TRANSPORT EFFECTS

The Transport Modelling and Off-site Transport Network Infrastructure Assessments (Appendix I) collectively inform the overall transport infrastructure staging requirements. Internally within the subdivision, these are predominantly a function of the progression of subdivision development. Externally, the transport infrastructure responses are required to respond to identified safety and capacity effects.

A collaborative transport stakeholder group modelling process described in detail in the Transportation Assessment (see Appendix I) has informed a staged approach to the delivery of transport infrastructure associated with the Wairakei South development. This approach recognises that the development will occur progressively over an extended timeframe and that transport infrastructure can therefore be implemented in stages aligned with the scale and timing of development.

The modelling indicates that the existing, planned and funded (Do Minimum) transport network can accommodate the initial stages of development, subject to the establishment of appropriate localised connections to the PEI and upgrades to the Bell Road corridor to enable safe and efficient access to the wider network. These initial works therefore form the baseline enabling infrastructure required to support early development within the site.

As development progresses and cumulative traffic demand increases, further upgrades to the surrounding network are required to maintain acceptable levels of service and network resilience. In particular, the modelling identifies increasing sensitivity within The Sands Avenue corridor and at the PEI, reflecting the role of these facilities as the primary connections between the development area and the TEL corridor. The modelling also identifies the Bell Road / Te Puke Highway corridor as a location where operational and safety considerations arise as traffic volumes increase, particularly in relation to the railway level crossing and the Parton Road intersection.

Latter and more strategic stages of development trigger upgrades to The Sands Avenue corridor and improvements to the Domain Road interchange to accommodate increased traffic demand and maintain efficient access to the strategic road network.

Further stages of development introduce additional capacity and network connectivity measures, including upgrades to the Te Okuroa Drive / The Sands Avenue intersection and improvements to traffic distribution within the wider eastern Tauranga corridor.

In addition to the upgrades identified directly through the modelling exercise, several transport responses have also been identified through the transport stakeholder group engagement process and broader corridor planning considerations. A copy is included in the applicant's consultation record (Appendix AB). These include safety and operational improvements at the Bell Road railway crossing, speed management and signalisation at the Te Puke Highway / Bell Road intersection, and the longer-term connection of Bell Road toward Te Tumu to support improved network connectivity and integration.

Overall, it is assessed that the proposed mitigation and the timing described will result in appropriately timed and staged mitigation. The overall effect of mitigation will result in the introduction of safety and/or capacity improvements for all road users in advance of the effects provided for and until such time as the corresponding stage of development is completed. At the completion of development within each stage, the mitigation has been determined to achieve an equivalent of better operational transport network performance compared with the Do Minimum case, exclusive of the Proposal. In this way the potential effects due to development staging will, where necessary, be mitigated in advance of the staged development effect.

6.4.1. Construction Traffic

The development of Wairakei South will involve large-scale earthworks and civil infrastructure construction undertaken over an extended, staged programme. Construction is currently anticipated to commence from approximately 2029, with works progressing incrementally as land is developed and serviced. Additionally, some works are required within the road corridor environments as mitigation to enable development staging.

Given the scale of the development area (approximately 350 ha) and the long-term nature of development, construction traffic effects have the potential to incrementally interact with the surrounding road network over a number of years. These effects will be temporary in nature but, if unmanaged, could give rise to adverse safety and efficiency effects on the surrounding local road network and State Highway 2.

Construction traffic generation is detailed in Appendix I and will be managed in accordance with the Draft Construction Management Plan (Attachment AL), as follows:

- A Construction Traffic Management Plan (**CTMP**) is to be comprehensive and adaptive to enable minimal disruption to surrounding road users. The CTMP shall be formulated and implemented following the consultation with all other stakeholders.
- Route planning. Once fill supply locations are confirmed, a route can be planned considering impacts on schools, ECE centres etc.
- Hours of operation. Deliveries to site should consider residual traffic conditions and structure delivery times to avoid times of congestion.
- Location of ingress and egress. Construction entries and exits are to consider locations relative to the impacts on surrounding residents.
- Ingress and egress logistics. Temporary slip lanes or holding areas off existing carriageways will be considered for bulk deliveries.
- Traffic management. Temporary traffic lights or stop/go controls are to be considered where frequent deliveries are likely to impact on normal traffic flows.

6.5. ECOLOGICAL EFFECTS

6.5.1. Effects on Terrestrial Ecological Values

The nature and level of actual or potential terrestrial ecological effects attributable to the proposal are addressed below with recommendations for the management of adverse effects in accordance with the effects management hierarchy. A summary of the ecological effects is provided in Table 11 below.

Table 11: Magnitude and level of terrestrial effects for the proposed Wairakei South Development pre and post effects management.

Activity	Ecological feature	Effect	Ecological value	Magnitude of effect	Level of effect (pre-effects Management)	Effects Management Measures	Level of effect (post-effects management)
Vegetation removal	Exotic pasture grass and trees. Scattered native trees	Loss of botanical value	**Negligible-Low**	**High**	**Very Low/Low**	Low and Very Low effects should not normally be of concern, although normal design, construction and operational care should be exercised to minimise adverse effects. Native dominated landscape planting and maintenance of large greenway will increase biodiversity and indigenous vegetation cover.	**Very Low/ Positive**
		Risk of disturbance, injury or death of birds during vegetation clearance and earthworks.	**Low**	**Moderate**	**Low**	Avoid vegetation clearance between September and February inclusive. If this is not possible, check trees prior to felling and if native bird species are nesting, leave the tree standing until the nest can be declared empty.	**Very low**
		Risk of disturbance, injury or death of lizards during vegetation clearance and earthworks	**Moderate**	**High**	**Moderate**	Implementation of Lizard Management Plan prior to vegetation removal to capture and relocate indigenous lizards. A Wildlife Act Authorisation will be required	**Low**
		Loss of lizard habitat	**Low**	**Moderate**	**Low**	Low effects should not normally be of concern. Native dominated landscape planting and maintenance of large greenway will increase biodiversity and indigenous vegetation cover possibly improving lizard habitat across the site.	**Low/Positive**

Activity	Ecological feature	Effect	Ecological value	Magnitude of effect	Level of effect (pre-effects Management)	Effects Management Measures	Level of effect (post-effects management)
		Risk of disturbance, injury or death of bats during vegetation clearance and earthworks	**Moderate**	**Moderate**	**Moderate**	Implementation of DOC Bat Roost Tree Protocols to ensure no injury or mortality to bats during potential roost tree removal if bats present at the time.	**Low**
		Loss of suitable foraging and commuting features for bats	**Low**	**Moderate**	**Low**	Low effects should not normally be of concern. Creation and maintenance of large greenway and SW wetland areas will retain some potential for bat foraging in the future should bats be present.	**Low**

6.5.1.1. Lizard Management

Although no Lizards were observed on site, given the scale of the project, the applicant's precautionary approach to lizard management will follow the key principles for lizard salvage and transfer in New Zealand. The capture and relocation of native lizards will be carried out under a valid Wildlife Act Authorisation to be issued by the Department of Conservation.

Complete avoidance of actual or potential adverse effects on any indigenous lizards and their habitats, which may be present cannot be achieved, given the extent of the proposed development and the practical difficulty of detecting and capturing lizards where they may occur at low densities. Accordingly, the management of adverse effects will involve the implementation of a lizard salvage and relocation programme, undertaken in accordance with a Wildlife Act Authorisation and supported by release-site habitat enhancement and augmentation, to provide additional shelter and foraging resources for both relocated and resident indigenous lizards.

6.5.2. Effects on Freshwater Ecological Values

The nature and level of actual or potential freshwater ecological effects attributable to the proposal are addressed below with recommendations for the management of adverse effects in accordance with the effects management hierarchy. A summary of the ecological effects is provided in Table 12 below.

Table 12: Magnitude and level of freshwater effects for the proposed Wairakei South Development pre and post effects management

Activity	Ecological feature	Effect	Ecological value	Magnitude of effect	Level of effect (pre-effects Management)	Effects Management Measures	Level of effect (post-effects management)
Earthworks	Artificial Drains	Injury or mortality of indigenous fish	Moderate	High	Moderate	Implement fish management plan to relocate eels.	Low
	Kopuaroa Canal/Kaituna River	Sedimentation	Moderate	Moderate	Moderate	Implementation of Bay of Plenty Regional Council sediment and erosion control standards prior to commencing earthworks	Low
Stormwater	Kaituna River	Changes in water quality and volume	Moderate	Low	Low	Mitigation through online stormwater treatment. And control flow volumes through storage and pumps. Prepare and implement a stormwater monitoring plan.	Low
	Bell Road Drain		Low	Low	Low		Very low
	Kopuaroa Canal		Low	Low	Low		Very low

Activity	Ecological feature	Effect	Ecological value	Magnitude of effect	Level of effect (pre-effects Management)	Effects Management Measures	Level of effect (post-effects management)
Construction of Pump Station	Kopuaroa Canal	Barrier to Fish Passage	**Moderate**	**Moderate**	**Moderate**	Pump station design should comply with BOPRC, and New Zealand fish passage and screening guidelines.	**Low**

6.5.3. Effects on Wetlands

There were no wetlands identified within the site. However, several mapped wetlands were located between 140 outside the site. The stormwater management design and proposed diversion of the Bell Road drain will result in a redistribution of surface and groundwater levels within the site. ENGEO's groundwater modelling and hydrogeological assessment of the post-development condition indicates only minor groundwater level changes at the site boundary with predicted drawdown of up to 0.5 m and a drawdown level of less than 0.1 m within 160 m of the site where soils are compressible peat. The conclusions of the ENGEO reports are that the development will have less than minor effects on regional groundwater levels, flow gradients, and discharges compared to existing conditions. This is because the proposed development activities will primarily result in a rearrangement or a redistribution of the existing extensive drainage network which has a controlling influence on groundwater and surface water, as opposed to adding or removing any drainage capacity.

Consequently, the pre-effects management magnitude of effect on regionally mapped wetlands outside the site was considered 'negligible' and the pre-effects management level of effect was considered 'low'. Low levels of effect should not normally be of concern and as such no specific effects management measures are required.

6.5.4. Residual Ecological Effects

The overall level of effects on terrestrial, freshwater and wetland ecological values are no more than 'low'. Low effects should not normally be of concern, although normal design, construction and operational care should be exercised to minimise adverse effects. Consequently, no residual effects are anticipated.

6.5.5. Positive Ecological Effects

A defining feature of the proposal is the creation of an extensive, integrated wetland system for stormwater management and flood mitigation. These wetlands are designed to provide significant water storage capacity during extreme rainfall events, reduce downstream flood risk, and improve water quality through natural treatment processes.

In addition to their hydraulic and water quality functions, the wetlands will deliver substantial ecological enhancement, recreational amenity, and cultural values, and are anticipated to become one of the largest constructed wetland networks in the Bay of Plenty region. This approach

represents a shift away from traditional engineered stormwater solutions toward nature-based infrastructure that supports climate resilience and long-term environmental outcomes.

6.5.6. Overall summary of Ecological Effects

The Ecological Impact Assessment prepared by Ecological Solutions Limited (Appendix L) provides a detailed assessment of ecological impacts associated with the proposal. Overall, the ecological value of terrestrial ecological features on the site ranges from 'negligible' to 'moderate', with freshwater ecological values within the site and the receiving environment ranging from 'very low' to 'high'. There were no wetlands identified within the site; however, several BOPRC mapped wetlands (such as the nearby Kaituna wetlands on the eastern banks of the Kaituna river) located outside the site have 'very high' ecological value. According to the BOPRC RPS criteria for indigenous vegetation and habitat for indigenous fauna of national importance[5] the applicants site is not considered significant with regard to Section 6c of the RMA.

The ecological impacts attributable to the proposed development after the application of the effects management hierarchy, including specific management measures outlined in ecological management plans for lizards, birds and bats are considered to be 'very low' to 'low' on terrestrial, freshwater and wetland ecological values in accordance with the EIANZ impact assessment methodology. Consequently, no significant residual adverse effects are anticipated because of the Wairakei South development.

A Wildlife Act Authorisation (**WAA**) will be required to implement the proposed lizard management measures outlined in the Lizard Management Plan (Appendix AJ). The proposed lizard management measures will involve the capture and relocation of indigenous lizards prior to vegetation clearance within identified lizard habitat areas.

The following management plans (see Appendix AH) have also been prepared by Ecological Solutions to manage effects and are subject to recommended consent conditions included in Appendix AD.

- Fish Management Plan
- Avian Management Plan
- Bat Management Plan

6.6. CULTURAL EFFECTS

[redacted]

[5] Bay of Plenty Regional Policy Statement (2014) *Appendix C - Criteria for assessing matters of national importance in the Bay of Plenty region* https://atlas.boprc.govt.nz/api/v1/edms/document/A4919746/content

[redacted]

[redacted]

[redacted]

6.6.1. Actual and Potential Cultural Effects

[redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

6.6.2. Cultural Mitigation, Design Response & Conditions

[redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]

[redacted]

[redacted]

6.7. ARCHAEOLOGICAL EFFECTS

The Archaeology Assessment (Appendix X) concludes that no known archaeological sites will be affected by the proposed residential subdivision development of the specified properties and the likelihood of encountering unrecorded subsurface archaeological sites is considered low. However, it is not possible to provide absolute assurance that archaeology will not be affected by the development as there remains a possibility that unknown sites and buried artifacts may be encountered. A general authority for the accidental modification or destruction of archaeological sites will therefore be obtained. Effects on archaeological sites can be managed by appropriate consent conditions, a copy of which are included as Appendix AD.

6.8. URBAN DESIGN

6.8.1. Urban Design Effects

The Wairakei South Development presents significant opportunities for strategic urban growth. The development's location and the master-planning completed for the site results in strong connectivity, access to infrastructure, housing choice, employment proximity to employment centres and quality open space and amenity outcomes. The site's ecological and cultural restoration potential provides a unique opportunity to create a development that is both environmentally and socially enriching. The privately funded delivery model enables flexibility and innovation, allowing for timely implementation and adaptive design. The inclusion of a central commercial hub, neighbourhood centres and future provision for a school site, further enhances the development's ability to support a self-sustaining and vibrant community.

The applicant has generally adopted the latest IPI Standards for residential development from the WBOPDC District Plan and for Commercial and Industrial areas, those from the Plans existing Commercial and Industrial zones. In addition, the adoption of a series of design guidelines (Appendix AE, AF, and AG) to provide guidance in relation to the future development of residential, commercial and industrial buildings is proposed to ensure positive urban design outcomes and a well-functioning urban environment.

The site has constraints that must be carefully managed. Natural hazards such as flooding, liquefaction, and tsunami risk require resilient infrastructure and an appropriate design response including the staging of stormwater infrastructure and earthworks which the applicant has followed. Hazard mitigation and climate-responsive design are achieved.

Integration with surrounding rural landscapes demands sensitive design to manage edge effects (such as through building controls and landscaping) to preserve wider character and amenity.

Infrastructure dependencies and staging complexities have been addressed to ensure coordinated delivery and long-term viability. These challenges underscore the importance of applying the 7C's—particularly Context, Custodianship, and Collaboration—and adhering to the NPS-UD's principles of enabling growth while managing risks and protecting environmental and cultural values.

The Development masterplan (Appendix C) is informed by the National Medium Density Design Guide[6] (ministry for the Environment, 2022) reflecting best practice in urban design. Five key design principles include:

1. **Contextual Integration:** Respecting and enhancing the natural, cultural, and built environment.
2. **Healthy and Safe Communities:** Designing for wellbeing, safety, and social cohesion.
3. **Housing Choice and Accessibility:** Providing diverse, affordable, and adaptable housing options.
4. **Sustainability and Resilience:** Incorporating climate-responsive design and infrastructure.
5. **Economic Sustainability:** Supporting local employment, services, and long-term viability.

These principles underpin the spatial layout, built form, and public realm design, ensuring a coherent and future-proofed urban structure.

Key opportunities and constraints for the development are summarised as follows:

Opportunities

- Strategic location with strong regional connectivity
- Cultural and ecological restoration potential
- Privately funded delivery model enabling timely implementation
- Potential to pilot innovative housing and infrastructure solutions

Constraints

- Natural hazards and environmental sensitivities
- Integration with surrounding rural landscape
- Infrastructure and staging complexities
- Balancing the urgent need for housing and business land supply with the protection of productive land

The development has been aligned with national and regional planning frameworks, particularly the NPS-UD and its outcomes in terms of well-functioning urban environments. The master planning

[6] Ngā tohutohu hoahoa ā-motu mō te wharenoho mātoru-waenga National medium density design guide, Ministry for the Environment (2022) https://environment.govt.nz/assets/publications/national-medium-density-guide.pdf

completed will ensure that the residential and business land when developed will be a well-functioning urban environment.

The delivery of diverse housing and employment options will enhance social equity and economic sustainability. The public realm has been designed to foster community wellbeing, with inclusive, accessible, and engaging spaces for recreation, interaction, and cultural expression. The inclusion of a school site, neighbourhood centres, and a centrally located commercial hub provides strong community connectivity and promotes active transport. Applying the 7C's consistently throughout the design and delivery process has ensured that the Development is contextually responsive, character-rich, and collaboratively shaped. The overall Urban Design effects are considered to be positive.

6.9. LANDSCAPE & VISUAL EFFECTS

The Landscape Assessment (Appendix K) addresses the internal effects at an interface and visual effects level while the Urban Design Assessment (Appendix J) has addressed in detail subdivision and future development matters such as street frontage, building design controls and interfaces.

Landscape effects have been assessed over the two main development areas as follows:

- Part A – Northern Portion - Tauranga Eastern link to Bell Road (0–10 years).
- Part B – Southern Portion - Bell Road extending south (10–20 years).

6.9.1. Natural Character Effects

The land use change will move from a heavily modified farming landscape to that of a modified urban landscape with stormwater treatment wetlands and swale systems throughout. The introduction of these systems focuses on improving the condition of water re-entering the Kopuaroa Canal and the Bell Road Drain prior to entering the Kaituna River. Coupled with significant areas of native wetland planting the southern part of the site will be naturalised.

Currently no native vegetation resides along the drainage systems within the site, and the proposed southern stormwater and treatment wetland will provide substantial enhancement to the biotic condition of the site. Across the site the proposed stormwater management areas comprise 134ha of area, approx. 38.4% of the site area, providing substantial opportunity for enhancement of biotic attributes through planting in native vegetation cover.

Built modification will be substantive across the site with building heights varying from 8m to 20m. The modification will include changes to the abiotic composition of the ground structure and landform with the inclusion of fill material to create building platforms.

Experientially the experience of the natural patterns of the site and the wider environment will diminish as built development establishes across the site. The transition from a highly modified and productive rural area to an urban area results in changes to the natural character, however overall, the natural character condition of much of the site will remain very low. At the southern end however the natural character will be enhanced through the substantive inclusion of native vegetation and significant wetland areas.

Overall, the potential adverse natural character effects on the existing very low condition of the site are considered to be very low to benign. Some enhancement of the southern portion of the site will occur and this is considered in the overall effects rating.

Table 13: Natural Character Effects

Area	Natural Character Effect
Part A	Very Low Adverse
Part B	Very Low Adverse to Benign
Overall Development	Very Low Adverse to Benign

6.9.2. Landscape Effects

Disregarding the proposed built form, the proposed subdivision seeks to raise the ground level from RL 1.1m to RL3.8m resulting in a modified landform that will sit 2.6m above the surrounding productive rural landform. The landform change is set to the middle and northern portions of the site where built development is proposed. The proposed landform seeks to establish a non-floodable building platform for the development integrated with stormwater swale networks and road corridors.

At the boundaries of the Development site the interface with the adjoining landform is demonstrated in Figure 46 below.

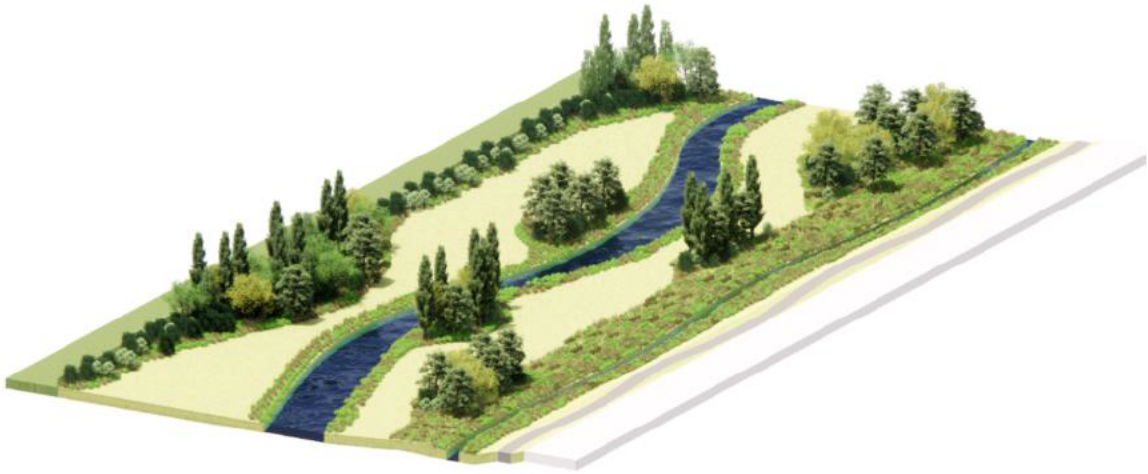


Figure 46: Swale Treatments – Refer to Masterplan Design Document (Appendix C)

The surrounding landform drops into drainage swales extending along the site boundaries before rising to the proposed subdivision landform within the Site.

The hydrology of the site will remain a modified pattern of drainage networks, albeit the proposed Development provides for open vegetated swales with enhanced native vegetation management throughout. At the southern end of Part B the stormwater treatment wetland introduces water back

into the site, reflecting the historic wetland that occupied this area of the site, prior to productive land use modification.

The direct landscape effects (for areas A, B and the overall site) are considered to be of a low-moderate degree when taking into account the surrounding landscape landform, hydrology and biotic cover.

Table 14: Direct Landscape Effects

Area	Direct Landscape Effect
Part A	Low-moderate adverse
Part B	Low-moderate adverse
Overall Development	Low-moderate adverse

6.9.3. Landscape Character Effects

The proposed development extends into a pastoral productive landscape with a dominant rural pastoral plains character currently demarcated by the Tauranga Eastern Link Road corridor. The rural plains and the productive cropping and grazing land use patterns across it form a distinctive arcadian landscape character found in three other locations across the Bay of Plenty, being Maketu and the Rangitāiki plains, near Whakatāne. Historically these landscapes formed large wetlands and lowland podocarp forests.

The proposed urban development into the rural landscape comprises a moderate to high degree of change to the current landscape character. The landscape character will have potential adverse effects as a result of the proposed development at a low-moderate degree for Part A and a moderate to high degree for Part B.

Overall, Part A provides a logical transition of urban form when considering the landscape context. Part B grades in its ability to integrate and introduces a greater degree of effect the further south it extends. The adverse effects are considered at a localised and wider scale, considering urban form, cohesion of landscape areas and their distinctive characteristics which form the unique character.

Table 15: Landscape Character Effects

Area	Landscape Character Effect
Part A	Low-moderate adverse effects
Part B	Moderate – High adverse effects
Overall Development	Moderate adverse effects.

6.9.4. Visual Effects

Visual amenity effects, comprise the appreciation, in this instance, of the change in landscape from a dominant rural pastoral plains landscape to an urban edge. Design standards and conditions of consent provide an opportunity to visually integrate the proposal to reduce the dominance of built

form, with design controls and landscape mitigation planting measures. The inclusion of the stormwater treatment wetland area to the south of Part B, provides a new measure of visually representing the historical landscape patterns and introducing a new rural and urban character to the landscape.

Zone of Theoretical Visibility mapping has been prepared to consider the extent of the visual catchment for the visual effects assessment. Sited at the lower point of the visual catchment, within the lowland plains, the site is exposed to a number of elevated viewpoints in the wider catchment. The visual effects assessment considers the visual effects, as they relate to visual amenity, forming part of the overall landscape effects assessment. Representative public viewpoints are interpreted and applied, where similar to private vantage points.

As with landscape effects, visual effects were considered in the Landscape Assessment (Appendix K) over two main stages:

- Part A – Northern Portion - Tauranga Eastern link to Bell Road (0–10 years)
- Part B – Southern Portion - Bell Road extending south (10–20 years)

A summary of the visual effects is set out below however the range of effects comprises Low Adverse to Moderate-High adverse effects. Mitigation measures set out in Section 5.0 of the Landscape Assessment at Appendix K provide methods for lowing of the identified adverse effects and these have been incorporated into the recommended consent conditions (Appendix AD) as appropriate.

Table 16: Visual Amenity Effects

Visual Amenity Effects	Part A	Part B
Bell Road – Easterly Views	Low adverse effects	Moderate adverse effects
Bell Road – Westerly Views	Moderate adverse effects	Moderate-High adverse effects
Wairakei Urban Area	Low-moderate adverse effects	Low adverse effects
Tauranga Eastern Link	Low adverse effects	Low -moderate adverse effects
Collins Lane and Seddon Street	Low adverse effects	Moderate adverse effects
Pacific Coast Highway	Low adverse effects	Moderate adverse effects
Te Rae o Papamoa Regional Park	Low adverse effects	Moderate adverse effects
OVERALL VISUAL EFFECT	**Low-Moderate Effects**	**Moderate Adverse Effects**

6.9.5. Summary of Landscape & Visual Effects

As set out in the Landscape Assessment (Appendix K) the natural character effects are very low to benign with some resulting positive effects as the stormwater wetland of Part B establishes.

The landscape and visual effects resulting from the development of Part A inclusive of mitigation measures will be of a Low-Moderate reducing to a Low degree over a 10-year period as mitigation measures mature. This equates to a minor adverse effect.

The landscape and visual effects resulting from the development of Part B inclusive of mitigation measures will be of a Moderate reducing to a Moderate-Low degree over a 10-year period as mitigation measures mature.

Overall, the proposed Development will introduce a moderate adverse effect on the rural landscape and with the application of substantive mitigation measures proposed as conditions of consent (Appendix AD). The integration of the development can be achieved whilst maintaining the wider rural character values. Visual effects cannot be avoided however they can be minimised through the application of mitigation in a staged approach. The visual change will be apparent for the immediate viewing catchment. The development also provides significant opportunities for ecological restoration, cultural expression and the reintegration of historic landscape patterns, supporting a more resilient and connected urban-rural interface.

6.10. NOISE AND VIBRATION EFFECTS

6.10.1. Construction Noise Effects Management

The Draft Construction Management Plan (Appendix AL) outlines the noise and vibration mitigation measures. During business hours (0730 – 1800 hours Monday to Saturday) NZS 6803:1999 Acoustics – Construction Noise (NZS 6803) requires construction noise from long term projects to comply with levels of 70dB LA_{eq}/85dB LA_{max} when measured 1m from the most exposed façade of a residential dwelling. NZS 6803 does not preclude construction activities at other times of the day but, instead, provides relatively low levels to manage effects. In this manner, quiet activities, such as office work, could be undertaken outside of normal business hours.

6.10.1.1. Construction Methodology

The construction of the project is considered to include the earthworks and construction of the internal roads. The construction of the subsequent buildings within the Development is not specifically considered, noting that this activity will have to comply with the construction noise limits recommended for the project's resource consent, which is addressed below.

As the exact machinery that will be required is at this stage unknown, the analysis provided in the Assessment of Noise Effects (Appendix Y) has been based on generic earthmoving plant that is common to subdivision projects. Table 17 describes the earthmoving plant considered for the analysis and provides typical noise levels that have been taken from measurements of similar equipment.

Table 17: Earthmoving Plant

Construction Equipment	Sound Power Level, dBA
Motor scraper	110
30t Excavator	106
D8 Bulldozer	112
Compactor	100
Paving machine	100
Vibrating roller on asphalt	95

6.10.1.2. Surrounding Receivers

There are a number of dwellings on the site. The assessment assumes that all dwellings onsite will either be removed prior to the commencement of construction or that their owners will provide their written consent to the proposal. As such, construction effects have only been considered for dwellings outside of the site boundaries. These are identified in Figure 47 below.

Figure 47: Assessment Sites Used for Construction Effects

6.10.1.3. Construction Noise Levels

The noise levels from the construction activities identified in Table 18 have been calculated at the nearest neighbours and reported below.

Table 18: Predicted Construction Noise Levels

Address		168 Bell Rd	362 Bell Rd	424 Bell Rd
Noise Level, dB L_{Aeq}	Motor scraper	58	63	61
	30t Excavator	54	59	57
	D8 Bulldozer	60	65	63
	Compactor	48	53	51
	Paving machine	48	53	51
	Vibrating roller	43	48	46

Table 18 identifies the LA_{eq} noise levels. On the basis that these comfortably comply with the 70dB LA_{eq} limit of the District Plan, it is anticipated that the LAF_{max} noise levels will also comply with the 85dB LAFmax District Plan limit.

The predictions of Table 18 assume that the earthmoving plant is working on the site boundary closest to each receiver. Given that much of the Proposal is bordered by a reserve, the likelihood is that the plant will actually be further from the receivers than assumed, meaning the reported levels are likely conservative.

6.10.1.4. Construction Noise Mitigation Measures

The following mitigation measures have been proposed as conditions of consent to manage construction noise effects (see Appendix AD).

- Construction Noise and Vibration Plan to be compiled and implemented.
- Compliance with New Zealand Standard 6803:1999 for Acoustics – Construction Noise.
- Hours of work – these will be typically 7.30am – 6pm Monday to Saturday.
- Plant choice – noise effects from certain items of plant will be considered when formulating the construction methodology.
- Plant assignment – The plant with the most noise impact can be restricted in both location and hours of operation.
- Plant operation – methodology of plant operation can be adjusted to reduce noise impacts i.e. reversing alarms muted, soft closing tailgates and bin closure etc.
- Acoustic Fencing can be erected in the more vulnerable area.

6.10.2. Construction Vibration Effects Management

The District Plan provides no limits for construction vibration. Based on the relatively large separation distance to neighbours, vibration from construction activities is not expected to result in an issue. Nonetheless, vibration has been considered against the requirement of DIN 4150-3:1999 Structural vibration - Part 3: Effects of vibration on structures (DIN 4150). This standard recommends a range of vibration limits based on frequency, the lowest of which is 5mm/s PPV when measured on the foundation of the receiving building.

The anticipated levels of construction vibration to the neighbours have been calculated and are shown below in Table 19.

Table 19: Predicted Vibration Levels from Vibrating Roller

Site, Fig 3	Address	Vibration, mm/s PPV
1	168 Bell Road	0.9
2	362 Bell Road	0.6
3	424 Bell Road	0.4

The predicted levels of vibration would range from unlikely to be noticeable to just noticeable. Compliance with the 5mm/s threshold of DIN 4150 indicates that the work is not expected to result in any cosmetic damage to buildings.

6.10.2.1. Vibration Mitigation Measures

The following mitigation measures have been proposed as conditions of consent to manage vibration effects (see Appendix AD).

- Construction Noise and Vibration Plan to be compiled and implemented.
- Compliance with Appendix B of DIN 4150-3:1999 "Structural vibration – Part 3 Effects of vibration on structures"
- Geotechnical advice – understanding ground conditions and ground acceleration properties.
- Monitoring – vibration monitoring can be undertaken on surrounding structures if deemed necessary.
- Plant choice – vibration effects from certain items of plant will be considered when formulating construction methodology.
- Plant assignment – the plant with the greatest impact on ground vibration can be restricted to certain areas of operation.

6.10.3. Operational Noise & Vibration Effects

To manage the potential conflicts within and between the future land uses and across the interface between the site and the surrounding Rural Zone, conditions are proposed that are based on the WBOPDC District Plan noise rules.

As it is not proposed to change the Rural zoning of the site, when referring to the proposed land uses within the site, the term “area” is used instead of Zone.

6.10.3.1. Noise effects within the Development Site

Suggested noise conditions (Appendix AD) impose appropriate limits of protection for the respective Residential, Commercial and Industrial land areas within the site. They are consistent with the existing WBOPDC District Plan noise rules and, more generally, best practice. In this manner, the resulting effects of noise can be considered appropriate.

Any activity undertaken in the Rural Zone surrounding the proposal would have to comply with noise limits when measured at the notional boundary of any site. These limits are considered appropriate for residential amenity. As such, neighbouring properties compliance with the existing District Plan noise rules would ensure appropriate effects on activities within the proposed residential areas from neighbouring rural activities.

The District Plans definition of the notional boundary is tied to dwellings. As such, the Plan provides no noise rules for Rural Zone activities to comply with at the likes of the proposed Industrial Area. The reality is that this is unlikely to be an issue. Firstly, the employment activities are, by their nature, not particularly noise sensitive. Secondly, the surrounding Rural Zone is occupied by dairy farms, meaning there is limited scope for noise generating activities. On balance, it is concluded that it would be improbable for the noise from the legitimate activities of the rural zone to result in an adverse effect on the activities proposed.

6.10.3.2. Effects on the Neighbouring Rural Zone

Through the suggested conditions (Appendix AD), the noise from the various activities intended for the Proposal will be limited to what the District Plan considers reasonable for the Rural Zone (Rule 4C.1.3.2, Section 2). In this respect, any noise from the activities within the site when measured at the adjacent Rural zone can be considered reasonable.

The Rural zoned land adjacent to the Industrial Area is to the southeast of the site and comprises two sites developed with a single dwelling on each, and, therefore, to the full extent permitted by the District Plan (in the rural zone only 1 dwelling per title is permitted). Any further dwellings on either of these two sites would require either the demolition and rebuilding of the existing dwellings, or a resource consent as a non-complying activity. Both scenarios seem unlikely, leading to the conclusion that the potential effects from the site on the surrounding rural zone are considered reasonable.

6.11. REVERSE SENSITIVITY

Two potential reverse sensitivity issues have been considered, in relation to noise being legitimate activities of the adjacent TEL and of the more distant East Coast Main Trunk Railway (ECMTR). The District Plan does not consider reverse sensitivity effects from either but, for completeness, both are addressed in the Assessment of Noise Effects (Appendix Y).

The potential reverse sensitivity effects relating to the adjacent farming activities have also been considered. The AgFirst report which addresses considerations under the NPS-HPS notes that the land is not suitable for Horticultural (i.e. Kiwifruit) production or vegetable production. The District

Plan currently identifies a 30m yard requirement in the rural zone (this is a long standing provision developed as a result of a number of previous Plan Changes) which has a purpose of ensuring that there are suitable buffers provided between permitted sensitive activities (i.e. dwellings and accommodation facilities). These buffers not only provide for privacy, but also avoid effects from everyday rural activities (such as spray drift and odour effects) through separation.

In the case of the residential housing proposed, the closest dwellings proposed to the adjacent rural zone are set back 30m from farmland along Bell Road. The closest industrial area is separated from the closest residential sections by a buffer of 35m to the closest residential section and the commercial areas are well internalised within the site.

Having regard to the above, it is considered that potential reverse sensitivity effects can be appropriately managed and mitigated.

6.12. LOSS OF PRODUCTIVE LAND

The proposal will remove the rural productive potential of the land resulting in a loss of the availability and productive capacity of highly productive land for rural productivity purposes. Furthermore, the proposed urban use of the subject land will not retain the overall productive capacity of the land over the long term.

Clause 3.10 of the NPS-HPL sets out the exemptions for subdivision, use or development of highly productive land subject to permanent or long-term constraints to be used for non- productive purposes (such as urban development). Although much of the site is categorised as highly productive land under the NPS-HPL the site overall is severely constrained due to:

- Soil conditions.
- Large areas of poorly and very poorly drained soils, creating wetness issues and limiting productive capacity.
- Soils that are unsuitable for horticulture operations.
- High water tables and surface flooding.
- Wetness constraints leading to reduced crop survival, yield variability, and pasture growth limitations.
- Limited potential for expansion or alternative land-based primary production.

Given the constraints identified above the proposed urban use of Wairakei South meets the NPS-HPL exemption tests in Clause 3.10 such that the land can be developed for urban activities and is not required be preserved for productive purposes.

6.13. INFRASTRUCTURE AND SERVICING EFFECTS

The proposed development has been designed to provide a comprehensive and integrated infrastructure servicing solution that supports the intended use of the site and the delivery of housing employment / industrial land, and infrastructure. Roading, earthworks, stormwater, wastewater, water supply, and utilities have been assessed and designed in accordance with the

BOPRC guidelines, the WBOPDC IDC and NZS 4404:2010. A normal separate engineering process is proposed to be followed with the submission of detailed design drawings for infrastructure and subdivision to be approved prior to the issue of s.223/224 certificates under the RMA for subdivision. All works are be installed as part of the subdivision consent process with the exception of private driveways which will be installed at the time of building consent. Compliance with the IDC will ensure that infrastructure is appropriately designed and installed to avoid any adverse effects on the environment.

The earthworks strategy, including raising of the site and ground improvement measures, addresses existing flood and geotechnical constraints and has been designed to protect future homes and businesses from flood risk while appropriately managing floodplain displacement effects.

The stormwater system incorporates conveyance swales, wetlands, and attenuation measures to avoid any adverse impacts on adjoining properties while providing treatment and storage to meet WBOPDC requirements prior to discharge.

Wastewater and water supply servicing can be provided efficiently via connection to existing trunk infrastructure, with reticulation and pump stations designed to support staged development and long-term network operation. WBOPDC's confirmation relating to the provision of this infrastructure has been provided (see Appendix N).

Roading infrastructure provides safe and efficient access to and within the site and integrates with the surrounding transport network.

Electricity and telecommunications services can be readily extended to service the development.

Overall, no infrastructure constraints have been identified that would prevent the development of the site. Subject to detailed design and the relevant engineering and building approvals, the proposal is capable of being delivered in a practical, efficient, and resilient manner.

6.14. CLIMATE CHANGE & SUSTAINABILITY

A Climate Change and Sustainability Assessment (Appendix AA) has been prepared for the proposal. The Wairakei South Development has been designed to respond proactively to both climate change mitigation and adaptation requirements, drawing on a full suite of technical assessments and integrating sustainability considerations across land use, infrastructure, and urban design.

From a climate adaptation perspective, the site is recognised as flood-prone and has been subject to detailed flood modelling and stormwater assessment (Appendix F, Appendix G and Appendix H). The proposed development incorporates an extensive, integrated wetland network and stormwater management system designed to provide significant water storage capacity, attenuate peak flows, improve water quality, and reduce downstream flood risk. This nature-based approach enhances resilience to extreme rainfall events and supports long-term catchment management outcomes. In addition, urban and landscape design measures, including street tree planting, open space networks, and green infrastructure, will mitigate potential urban heat island effects by improving shading, evapotranspiration, and local microclimates.

In terms of climate change mitigation, a key benefit of the development is the transition of the site away from intensive agricultural use on peat soils. As identified in the AgFirst assessment (Appendix

T) and supporting technical literature, drained peat soils are a significant source of greenhouse gas emissions due to ongoing oxidation and subsidence. The Ministry for the Environment[7] technical note on peatland restoration estimates that stopping CO_2 and N_2O emissions from drained peatlands avoids about 21.4 tCO2-e/ha/yr. The proposed development enables the capping and management of peat layers and associated ground gas, substantially reducing emissions that would otherwise continue under dairy and arable farming. This represents a material long-term reduction in baseline emissions.

The 134 ha of planted stormwater conveyance and constructed wetlands are estimated to provide carbon sequestration in the order of 470–1,000 tCO_2-e per year, with a central estimate of approximately 700 tCO_2-e per year[7, 8]. This excludes any separate avoided emissions benefit from stopping continued peat oxidation and will be refined once wetland typologies, planting design, peat extent, open-water areas, and hydrological conditions are confirmed.

The development also provides opportunities to reduce operational emissions through future-focused energy solutions, including the integration of rooftop solar, provision for neighbourhood-scale battery storage, and support for electrification of homes and businesses. These measures will improve energy resilience and contribute to New Zealand's broader decarbonisation objectives.

Construction-related effects will be appropriately managed through the implementation of site-specific Construction Environmental Management Plans, including Waste Management Plans that prioritise waste minimisation, reuse, and recycling. These measures will reduce environmental effects during construction and support efficient resource use.

Broader sustainability outcomes are achieved through the integrated design of a mixed-use, connected community. The development will provide 2,729 homes and 54 hectares of employment land in a location with strong existing transport linkages, supporting reduced travel demand and improved access to jobs and services. The proposed wetland system will also deliver ecological enhancement, water treatment, and recreational amenity, representing one of the largest wetland networks in the Bay of Plenty region.

The transition from existing agricultural land use is anticipated to result in improved environmental outcomes. As identified by AgFirst, current dairy and arable farming on the site contributes to elevated nitrogen leaching, sediment runoff, and soil degradation due to poor drainage and soil constraints. The proposed development will reduce these effects, improve water quality outcomes, and enable the restoration of wetland environments. In addition, the development will deliver positive social and economic outcomes through increased housing supply, employment generation, and improved land use efficiency.

[7] Dr Jordan Goodrich; Dr Hugh Robertson (2024) *Technical note: Wetland carbon abatement* https://environment.govt.nz/assets/OIA/Files/OIAD-1146/4.-FINAL-Wetland-carbon-abatement_technical-note-25-January-2024.pdf

[8] Ministry for the Environment (2024) *Freshwater interventions literature review: Impact of Jobs for Nature projects on freshwater ecosystems* https://environment.govt.nz/assets/publications/CR585_ManaakiWhenua_Freshwater_Interventions_LitReview.pdf

Overall, the Wairakei South proposal demonstrates a comprehensive and integrated response to sustainability and climate change considerations. The proposal not only manages actual and potential environmental effects but delivers enduring environmental, social, and economic benefits, consistent with the purpose of the RMA and the intent of the FTAA to enable well-functioning, resilient communities.

6.15. NATURAL HAZARDS EFFECTS

6.15.1. Liquefaction Recommendations

A Natural Hazards assessment has been prepared for the site as required by the RPS and s.106 of the RMA (see Appendix Q). Based on the liquefaction estimates described by ENGEO the post development landform supporting residential development is considered broadly equivalent to the Technical Category 3 (TC3) equivalent, in accordance with MBIE's Guidance for Repairing and rebuilding houses affected by the Canterbury earthquakes (see Appendix Q).

The proposed landform for the development is to include several metres of engineered fill comprising compacted dense pumice soil with additional reinforcement and / or cohesive fill use for the perimeter of the development platforms. The effects of this fill (or crust) has been demonstrated to reduce liquefaction severity from moderate/severe to little/minor.

Foundation design options for future residential buildings will consider earthquake resilient foundation systems developed in general accordance with the MBIE "Build it Right Canterbury Guidelines Technical Category 2" options. Specifically engineered foundation systems and floor construction will also be considered for future light commercial and industrial building applications within those development areas to account for the estimated total and differential liquefaction induced settlements being considered at the site.

Commercial and industrial buildings will require site-specific geotechnical design, potentially supported by supplementary investigations. These assessments for future buildings in this area will address bearing capacity, punching failure and subgrade stiffness under static and seismic conditions.

Essential services infrastructure such as stormwater pump stations and culverts beneath proposed roading networks are expected to be designed to include geotechnical remediation works such as shallow or deep ground improvement to reduce liquefaction induced total and differential settlement to prevent collapse of these structures for the designed importance level required for their ongoing service. Specific design of these systems will be provided as part of detailed design prior to consent and/or engineering approval works.

On this basis, it is considered that the residual risk for the development platform with regard to building and health and safety / life risk is low and appropriate conditions of consent have been recommended to manage liquification as part of the subdivision construction process (Appendix AD).

6.15.2. Landslide Mitigation

The risk of slope stability as a result of future significant earthquake events occurring within proximity to the site will be reduced from the construction of specifically engineered development

platforms that provide resistance to embankment edge stability conditions, with a range of geotechnical design options being considered including:

- Deep Ground Improvement supporting the edge of the development platforms providing a cut off for liquefaction and associated lateral spreading effects.
- Adoption of cohesive fill as part of the engineered embankment together with high strength basal geogrid reinforcement within the embankment edge zones to resist seismic deformation and flow failure conditions.
- Installation of geogrid reinforcement layers within the embankment edge zones to resist seismic deformation and flow failure conditions.
- Near surface shallow ground improvement layers between development platforms to increase near surface soil modulus, mitigate surface manifestation and flow failure conditions occurring.

These options have been provided in the Geotechnical Interpretive Report (Appendix P) to avoid any adverse effects associated with landslide. The matter is also addressed through recommended consent conditions (see Appendix AD).

6.15.3. Natural Hazard Risk Summary

Natural hazards required to be assessed in accordance with the RPS have been considered in the ENGEO Natural Hazard Assessment (Appendix Q), A summary of the development risk level is provided in Table 20 below.

Of the natural hazards assessed, it is considered that the risk of both liquefaction and earthquake induced landslides require mitigation in order to reduce the consequences, with mitigation methods considered within relevant sections above. The residual risks associated with these hazards are considered low following mitigation. The requirements to address these risks should be (and has been) included as a condition of resource consent for the development.

Table 20: Summary of Development Risk Level

Natural Hazard		Assessed Risk Level	Mitigation Measures	Development Risk Level
Volcanic activity	pyroclastic and lava flow	Low	None	Low
	landslip, debris flow and lahar	Low	None	Low
	ash fall	Low	None	Low
	geothermal hazard	Low	None	Low
	caldera unrest	Low	None	Low

Natural Hazard		Assessed Risk Level	Mitigation Measures	Development Risk Level
Earthquake	liquefaction and lateral spreading	High	Development platform providing liquefaction resistant crust, edge stabilisation design options. Specifically design Foundations for buildings and essential services.	Low
	fault rupture	Low	None	Low
	landslide and rock fall	High	Edge stabilisation design options for development platform	Low
	tsunami	Low	None	Low
Coastal/marine processes	coastal erosion	Low	None	Low
	coastal inundation	Low	None	Low
Extreme rainfall	landslip and debris flow / flood	Low	None	Low
	flooding	Low	None	Low

6.16. REQUIRED MONITORING

There are a number of matters which will require ongoing monitoring, and these are addressed through the recommended conditions of consent (Appendix AD).

6.17. MITIGATION MEASURES AND PROPOSED CONDITIONS

The proposal seeks 35-year consent terms for all regional consents and an unlimited term for all other consents (District Council land use and subdivision consents and Heritage Authority). Proposed consent conditions for Wairakei South are provided in Appendix AD included with this application. The proposed consent conditions include definitions where appropriate and:

- WBOPDC Land Use and Subdivision Consents.
- Residential subdivision and land use conditions including development controls for residential areas.

- Industrial subdivision and land use conditions including development controls for industrial areas.
- Commercial subdivision and land use conditions including development controls for commercial areas.

The proposed consent conditions are supported by:

- Proposed Industrial Area Design Guide (Appendix AE).
- Proposed Residential Area Design Guide (Appendix AF).
- Proposed Commercial Area Design Guide (Appendix AG).
- Subdivision conditions.
- Engineering conditions.
- Landscape conditions.
- Acoustic conditions.
- Cultural conditions.
- Traffic & transportation conditions.
- Transport framework conditions linking requirements to each development stage.
- Contaminated land consent (NEC-CS) conditions.
- General conditions.
- Bay of Plenty Regional conditions
- Ecological management Conditions.
- Permanent and temporary stormwater diversion and discharge conditions
- Stream works & diversion conditions
- Large culvert conditions
- Erosion & sediment control conditions
- Monitoring, reporting & maintenance conditions
- Earthworks conditions
- Engineering conditions
- Cultural conditions
- Heritage New Zealand Authority
- Archaeological & Cultural Conditions

7. CONCLUSIONS

The Wairakei South Development presents a compelling and comprehensive design for a sustainable, well planned urban development. The site's strategic location and integrated master-planned layout make it a model for future expansion in the Bay of Plenty region.

The project provides significant residential housing, business land and infrastructure to cater for the future growth in the Western Bay of Plenty sub region and greatly assists with the current shortfall of land identified in the Councils SmartGrowth strategy. Wairakei South will assist with meeting the short- and medium-term housing needs of the subregion.

There are significant economic benefits associated with the development which will result in the creation of net additional construction sector GDP and employment, of $1,121.0 million and 8,430 FTE jobs.

The applicants engineering approach to managing the landform and stormwater effects is innovative and is supported by sound technical assessments including extensive stormwater modelling and ground engineering investigation and associated peer reviews which have been run in parallel with the design process.

Earthworks and the development of stormwater and utilities infrastructure is able to be staged so as to occur over time, but to deliver housing early on in the first stage of the project.

The developer will be responsible for providing all infrastructure and wastewater and water supply connections can be provided via the Te Puke Wastewater Treatment Plant and the Western Bay of Plenty District Councils water supply.

The site's location and access via the TEL offers exceptional regional connectivity and proximity to key urban centres and employment areas including through the use of public transport.

By incorporating the seven principles of the NZ Urban Design Protocol, alignment with the WBOPDC Residential Outcomes Framework, and conforming to the NPS-UD, the project will result in a well-functioning urban environment.

Recommended conditions of consent have been provided to manage environmental effects and to also manage off site infrastructure upgrades and their timing.

Although the development will introduce urban growth in a rural low-density development, Wairakei south is a natural progression of the existing Papamoa/Wairakei South Urban growth area.

The Development responds to cultural and ecological objectives by re-establishing historical natural patterns, enhancing riparian areas, and creating extensive wetlands that restore ecological functions and improve water quality in the catchment. The applicant has a strong commitment to working with Mana Whenua on the project.

Transitional landscape treatments and design controls are utilised to manage edge effects, and design and development controls have been adopted from the WBOPDC Plans Intensification Planning Instrument (IPI) Plan Change (Plan Change 92) to ensure that Residential, Industrial and commercial land use outcomes are current best practice and appropriate.

Overall, the Wairakei South Development is a well-designed solution to address the shortfall and the urgent need for urban development in the Bay of Plenty sub region. Its emphasis on integrated planning, cultural and environmental responsiveness, and design quality makes it a viable model for sustainable sub-regional development.