Application for Land Use Consent and Assessment of Environmental Effects

30 Benmore Crescent, Manor Park, Lower Hutt 5019

Applicant: Waste Management (NZ) Ltd

Potentialis

PLANNING | RESOURCE MANAGEMENT

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26 January 2023

Disclaimer:

Potentialis Limited ("Potentialis") has taken care to ensure the correctness of all information contained in this report. It is, however, the responsibility of parties acting on information contained in this report to make their own enquiries to verify correctness.

Table of Contents

1.0 Introduction

Waste Management (NZ) Ltd. seeks land use consent to establish and operate a resource recovery park at 30 Benmore Crescent, Manor Park. The resource recovery park will provide significant assets to minimise and manage waste within the Wellington Region. The park will include material recovery, second-hand goods retail, a repair café, construction and demolition waste management, and a general waste transfer station.

1.1 Purpose of Report

This report provides details of the proposal and an assessment of environmental effects, in accordance with s88, the Fourth Schedule of the Resource Management Act 1991 (RMA), and City of Lower Hutt District Plan. Information about the applicant and property that this report relates to is set out below. Appendix 1 sets out the information requirements stated in Schedule 4 and in the City of Lower Hutt District Plan with a link to where that information is provided within this report.

1.2 Applicant and Property Details

Applicant:	Waste Management (NZ) Ltd
Summary of Proposal:	Construction and operation of a resource recovery park, including the sale of second-hand goods, repair café, material recovery, construction and demolition waste sorting and general waste transfer.
Address for Service and Contact for Queries:	Potentialis Limited Mailing Address: 172 Sandwich Road, St. Andrews, Hamilton 3200 Physical Address: Level 3, Suite 7, 50 Seddon Road, Hamilton 3204 Contact: Angela Goodwin angela@potentialis.co.nz (021) 844 374
Name and Address for Fees:	Waste Management (NZ) Ltd Contact: Sarah Whiteman – Wellington Regional Manager Swhiteman@wastemanagement.co.nz 027 296 1067
Site Address:	30 Benmore Crescent, Manor Park, Hutt City 5019
Legal Description:	Section 1, 6 Survey Office Plan 493901
Owners and Occupiers of Site:	Te Runanga O Toa Rangatira Incorporated *Notes:* *The site is vacant.* *The record of title and registered instruments are attached in Appendix 2.*
Site Area:	13.5192ha
Hutt City District Plan Zone, Overlays, Designations	Zone: General Rural Overlays: • Wellington Faultline Study Zone • Secondary River Corridor • State Highway Corridor Buffer

and Controls:	• Rail Corridor Buffer Statutory Acknowledgements: No statutory acknowledgements are shown in relevant documents. Schedule 2 Nga Taonga Nui a Kiwa of the Proposed Natural Resource Plan for the Wellington Region; however, includes Te Awa Kairangi. The Hutt River is of significance to Mana Whenua. The site is separated from the Hutt River only by an esplanade reserve.
Proposed Plan	Proposed Plan Change 56 Enabling intensification in residential and commercial areas: The site is outside of the area of the district subject to the Plan Change 56.
Existing Land Use Consents:	Consent RM220258 was granted on 21st December 2022 for bulk earthworks, vegetation clearance and upgrade of culverts at 30 Benmore Crescent Manor Park.
Summary of Reasons for Consent	Definition of Activity: The City of Lower Hutt District Plan states transfer stations are a discretionary activity. 'Transfer station' is not defined. Resource recovery parks are the modern equivalent of a transfer station as they minimise waste, rather than only managing it. As the District Plan does not provide a definition of transfer station, the common meaning applies. The full range of activities proposed do not fall within the common meaning of transfer station and it is unlikely they would have been envisaged when the District Plan was drafted. For this reason, we have elected to take a conservative approach and separately define each activity proposed as part of the resource recovery park. RESTRICTED DISCRETIONARY ACTIVITIES - 8B2.2(c) cafes and restaurants – a repair café forms part of the resource recovery park, - 14A.5.1(c) Any activity that exceeds the high trip generator thresholds specified in Appendix 2 Transport. DISCRETIONARY ACTIVITIES - 8B.2.3(a) Development exceeds the maximum height standard (8B2.1.1(c)) and maximum site coverage standard (8B2.1.1(e)), - 8B.2.3(e) Transfer stations. NON-COMPLYING ACTIVITIES - 8B.2.4(a) any other retailing activity – a second hand goods store forms part of the proposed resource recovery park. - 8B.2.4(c) any industrial activity – resource recovery (recycling) is part of the proposed resource recovery park as does a mechanical workshop (for the use of Waste Management vehicles only) *Note:* - *An assessment of the proposal against all relevant parts of the district plan is contained in Appendix 3.* - *Definitions are stated in Chapter 3 of the City of Hutt District Plan.*
Overall Activity Status:	Non-Complying
Other Consents Required:	Consents are required under the Proposed Natural Resource Plan for the Wellington Region – Appeals Version. A separate application will be made for these consents.

	A land use consent is required for access and servicing. This application has been lodged with Hutt City Council on the 20 January 2023 on behalf of Rosco Ice Cream Ltd. Further details are provided in the background section of this report.

Table 1: Applicant and property details for 30 Benmore Crescent, Manor Park, Hutt City.

1.3 Contents of Report

Sections 2, 3 and 4 of this report provide further details of the location of the site, surrounding environment, background, and proposal. This provides context to assess the environmental effects of the proposal that is set out in Section 5. Section 6 provides an assessment of affected persons. Section 7 provides a statutory assessment and Section 8 concludes the report.

2.0 Site and Surrounding Environment

2.1 Site Location

The site, which is accessed off Benmore Crescent in Manor Park, sits at the base of a valley between Hutt River, the rail corridor, and State Highway 2.

The figures below show the location and zoning of the wider site. Photos of the site and surrounding environment are included in the landscape and visual assessment report, prepared by Boffa Miskell (Appendix 4).

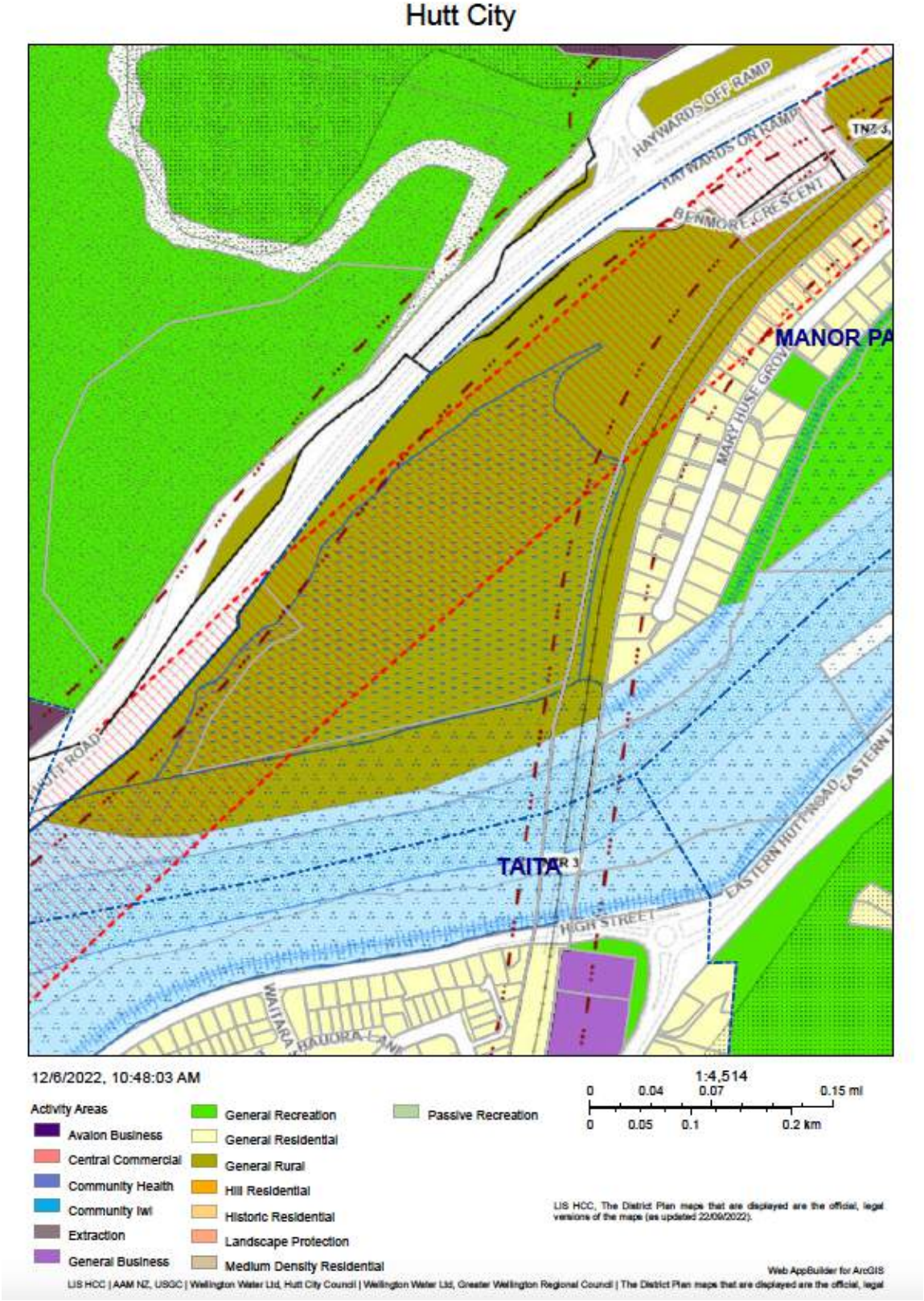

Figure 1: Hutt City Council District Plan Map for the site. Source: Hutt City Council

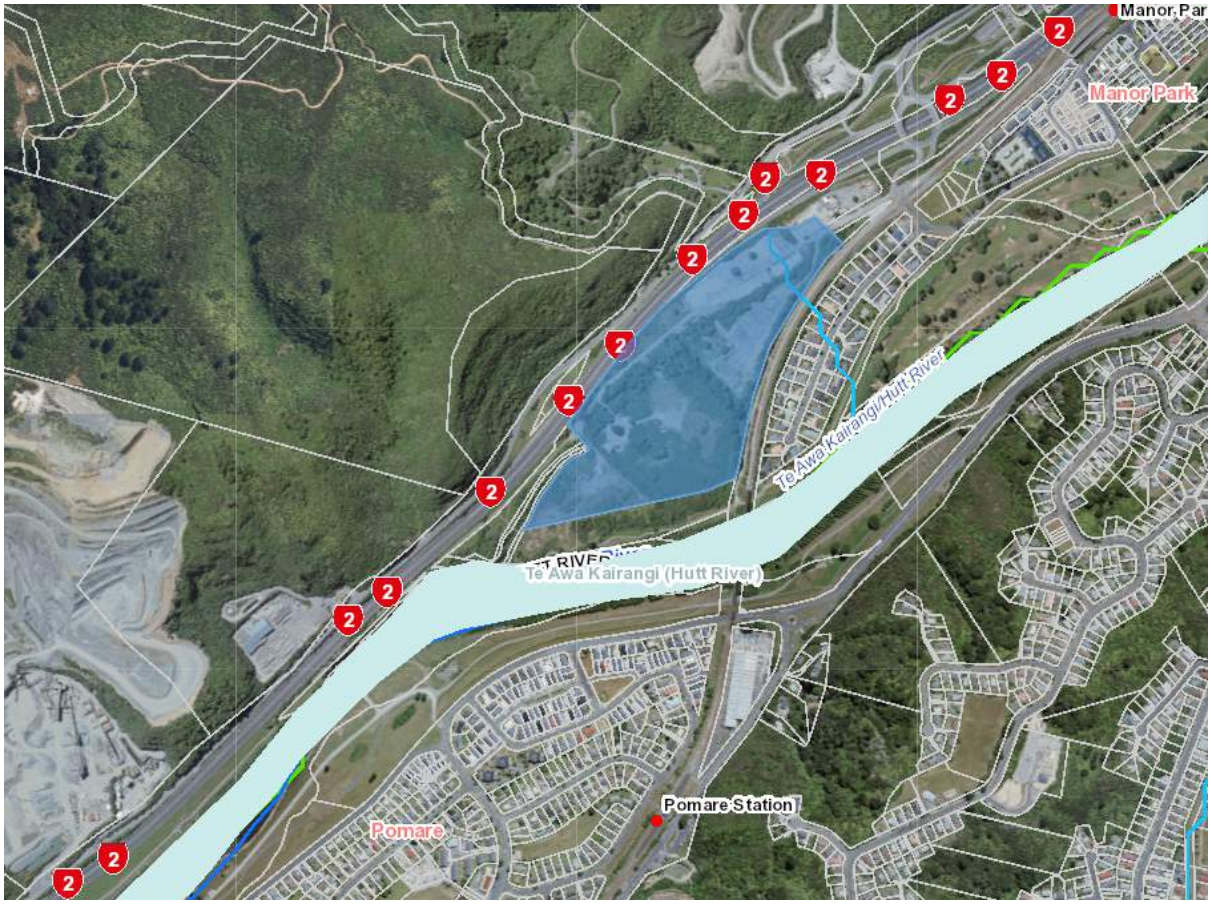

Figure 2: Site and wider environment. Source: Greater Wellington Regional Council Maps

2.2 Site Size, Zoning and Record of Title

The total size of the site is 135,192m^2 and Waste Management propose to use 57,800m^2 of this area. The part of the site Waste Management propose to use is shown as Area 1 in Figure 3 below.

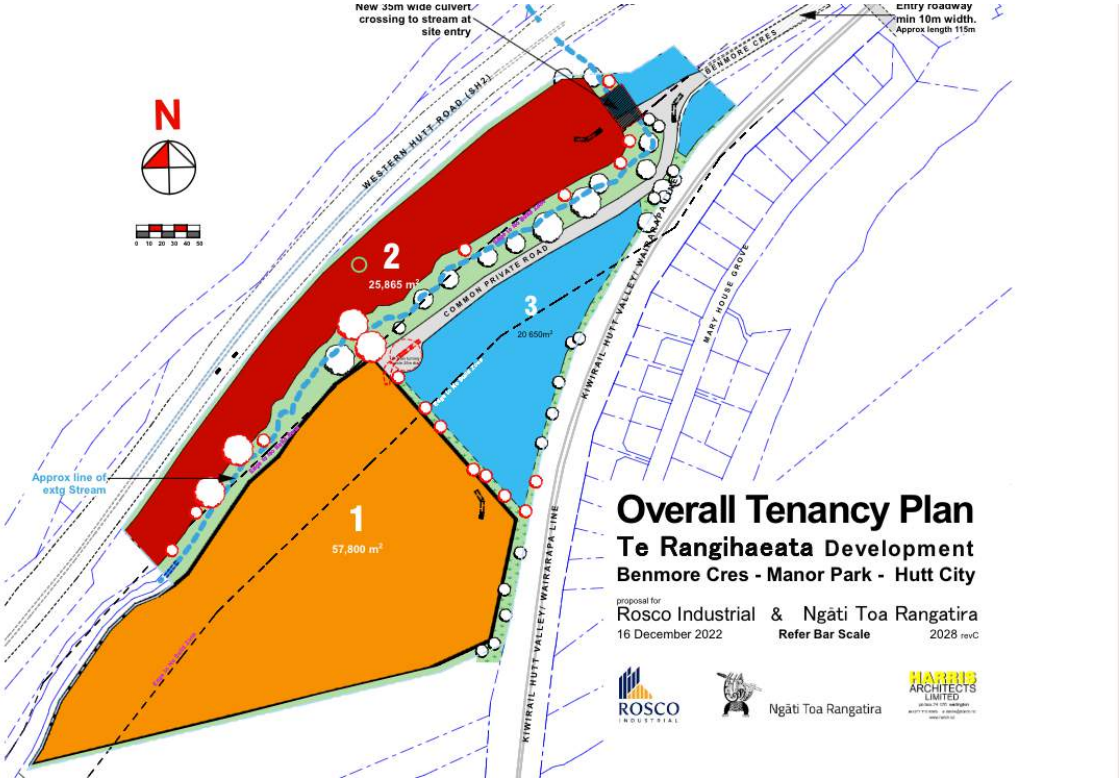

Figure 3: Part of the site Waste Management propose to use (Area 1)

The site is currently vacant and zoned General Rural. It is not connected to any other rural zoned land and the site itself has been modified over time. It does not have a rural character, as State Highway 2 serves as an effective demarcation of urban and rural character. The site is generally flat and will be contoured as a result of the bulk earthworks proposed for the site.

There are no outstanding natural features, landscapes, or special amenity landscapes on the site. The Hutt River and hills to the west of State Highway 2; however, are identified as special amenity landscapes in the Greater Wellington Regional Policy Statement.

The legal description of the site is Sec 1, 6 Survey Office Plan 493901. An encumbrance and fencing covenant are registered on the record of title. Neither of these instruments constrain Waste Management's proposal and are attached in Appendix 2.

2.3 Wellington Faultline 'No Build Zone'

A portion of the site is within the Wellington Faultline Study Zone, shown on Hutt City District Plan maps. A site specific Faultline Assessment has been undertaken and is attached in Appendix 5 and the likely Faultline location is shown in Figure 4, below. The assessment has determined a 'no build' zone 20m either side of the assessed position of the Faultline. This no build area is shown on the proposed development plans and all proposed buildings are clear of the no build area.

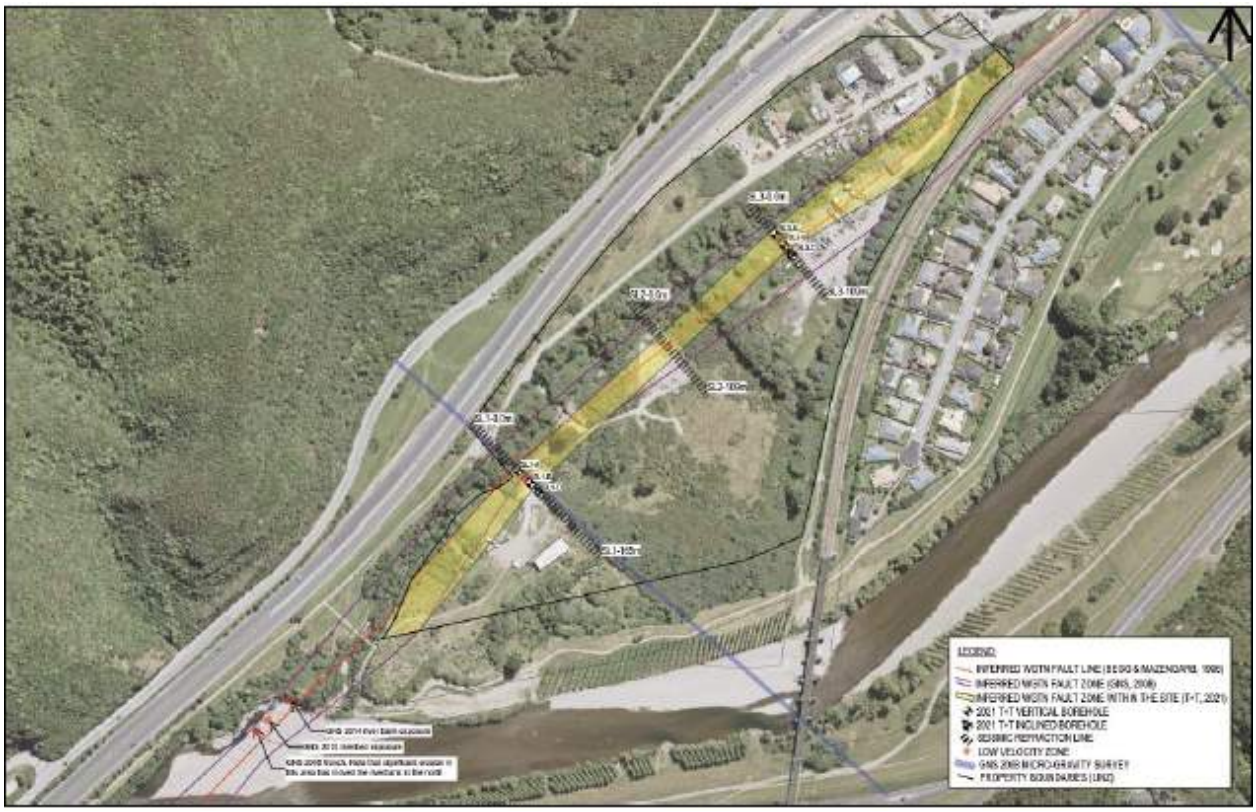

Figure 4: Likely location of the Wellington Faultline. Source: Tonkin and Taylor 2021

2.4 Transport Buffer Areas

The District Plan maps show that the site is within the State Highway and Rail Corridor Buffer areas. These overlays signify that these significant pieces of infrastructure can generate adverse amenity effects to sensitive land uses. As the activity proposed is complementary to the effects generated by both the Rail Line and State Highway, and not is sensitive to the effects of either, neither the State Highway or Rail Corridor Buffer areas have impact on the proposal; nor do either of these pose any restrictions.

2.5 Vegetation and Natural Character

The site is currently vegetated with primarily exotic vegetation with a scattering of natives. Most vegetation will be removed as authorized by the granted consent for bulk earthworks (RM220258); however, a 20m riparian buffer around Dry Creek will remain. As set out in the landscape and visual assessment, this maintains an element of natural character of the site. In addition, Consent RM220258 requires pest control.

2.6 Archaeological Considerations

The site is recognized to have a medium to high likelihood of uncovering an archaeological site, as identified on the Greater Wellington Regional Council (GWRC) GIS as outlined in Figure 4 below. There is a registered archaeological item on the site but away from the area of the site Waste management propose to use for the resource recovery park. Regarding the archaeological item Tonkin and Taylor in the AEE for the bulk earthworks application state:

"This assessment notes that there are no identified pre-1900 archaeological features within the development site apart from the former historical rail route. Filling is proposed along this area. As such, the assessment concludes that the works can be caried out safely under the provisions of an Accidental Discovery Protocol (ADP). Based on this conclusion and considering that the rail line has previously been removed and there is no visible evidence of the archaeological feature remaining, the adverse effects on historical features [are] less than minor."[1]

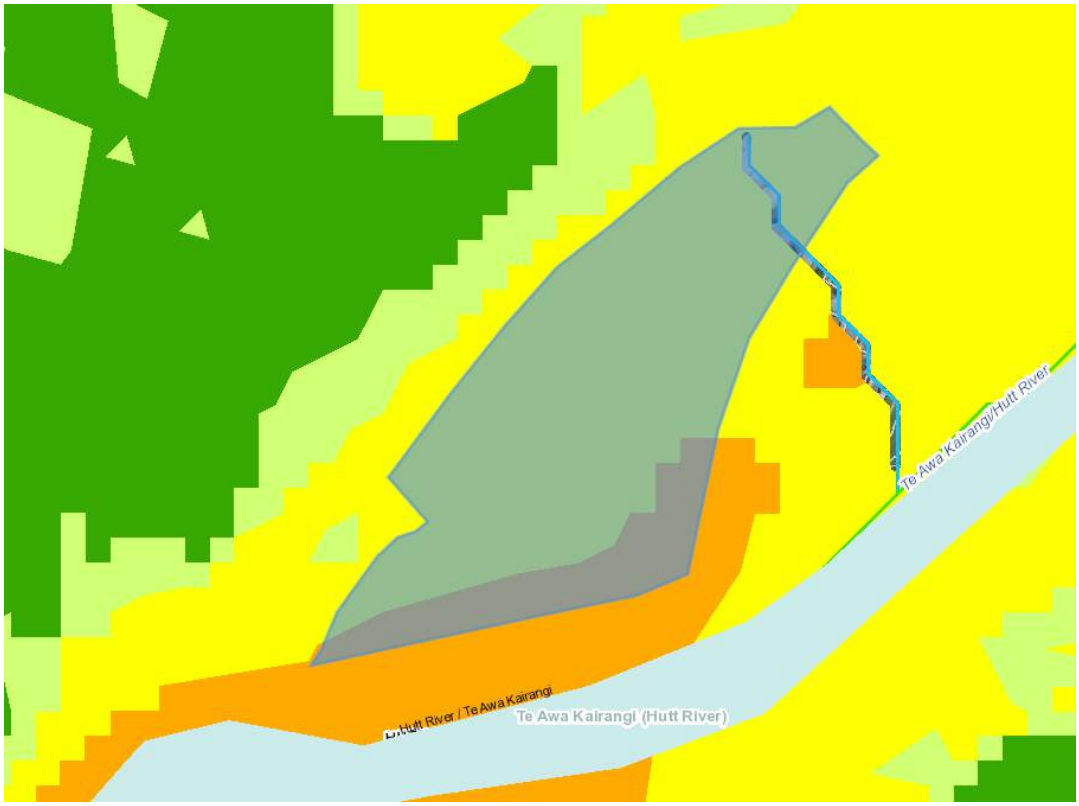

Figure 5: Archaeological Discovery Chance Map. Source: Greater Wellington Regional Council GIS

As bulk earthworks will have been undertaken on the site by the time Waste Management establish, the chance of finding archaeological items during construction of the resource recovery park is low

2.7 Land Contamination

Whilst the site did contain elevated levels of some contaminants, this has been assessed as part of the consent for bulk earthworks. It is therefore not a relevant consideration for the proposed establishment of the resource recovery park.

2.8 Flood Hazards

The site is within the secondary river corridor for the Hutt River. A flood assessment report has been prepared and concludes that after the earthworks to be undertaken under Consent RM220258 the site will be outside of the 1 in 440-year flood plain associated with the secondary river corridor. The site is subject to flooding from Dry Creek, as shown in the Figure 6 below. All proposed buildings and egress; however, are outside of any area that is susceptible to flooding. The flood assessment report is attached

[1] Resource consent application and assessment of effects on the environment, June 2022, Ref: 1015081.v1, Pg 37

in Appendix 6 for reference, noting effects of undertaking bulk earthworks were assessed as part of the bulk earthworks consent.

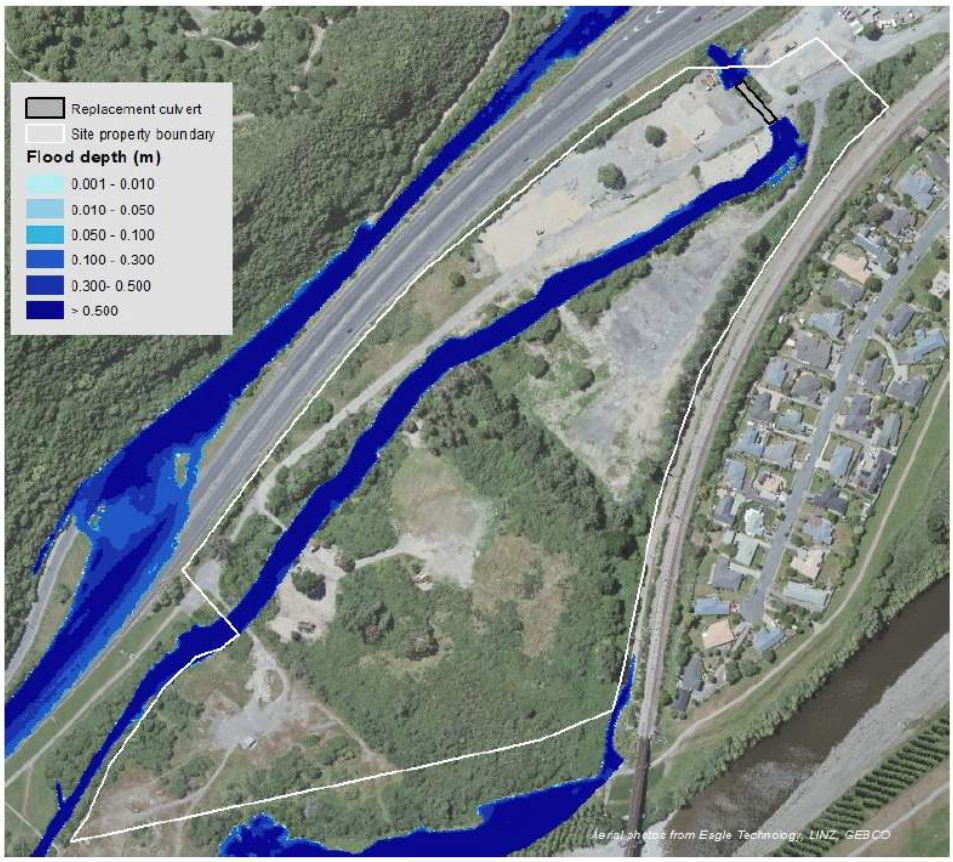

Figure 6: Flood Plain Map post bulk earthworks under Consent RM220258 Source: River Edge Consulting, 1 November 2022

2.9 Highly Productive Land

The National Policy Statement for Highly Productive Land (NPSHPL) requires Regional Councils to map Highly Productive Land within their regions. Prior to these maps being prepared, any land that is classified as Land Use Classification (LUC) 1 to 3 and within a Rural Production Zone is considered highly productive land.

In this case, the site is not considered to contain highly productive land, as it does not contain LUC 1 to 3 land. This is discussed in greater detail in Section 8.4.1 of this report.

2.10 Mana Whenua

The site is part of ancestral lands of Mana Whenua and forms part of the Ngati Toa Rangatira Claims Settlement Act 2014. Identification of the applicant land parcel within the Deed of Settlement is outlined in Figure 7 below:

Land Holding Agency	New Zealand Transport Agency	
Property Name	**Address**	**Legal Description - All Wellington Land District**
260039	25 Annabell Grove Lower Hutt	0.4546 hectares, more or less, being Section 1 SO 36382. All Transfer B804994.2
260051	Between Benmore Crescent and SH2 Lower Hutt	1.4160 hectares, approximately, being Part Lots 2 and 3 DP 5788 and Part Section 179 Hutt District. Part Gazette Notice B130217.1. Subject to survey.
260052	East of Benmore Crescent, Lower Hutt	17.1100 hectares, more or less, being Section 1 SO 36533. All Computer Freehold Register WN41D/467
260590	525 State Highway 1	0.7346 hectares, more or less, being Section 102 Block II Paekakariki SD. All Computer Freehold Register WN27D/932.

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Figure 7: Deed of Settlement Showing Applicant Site being returned to Te Runanga o Toa Rangatira[2]

No sites of significance or waahi tapu are shown on relevant documents or publicly available information. No sites have been identified to date through consultation with Taranaki Whānui or Te Rūnanga o Toa Rangatira. The Hutt River is listed in Appendix B of the Proposed Natural Resource Plan for the Wellington Region as an area of significance for Mana Whenua. It is understood from Hutt City Planning officers that land adjacent to the river has the same status as land subject to a statutory acknowledgement for the purpose of assessments under ss 95 and 104 of the RMA 1991.

2.11 Wider Environment

The site is positioned on the western bank of the Hutt River, near the territorial boundary between Hutt City and Upper Hutt City. To the west of the applicant site is State Highway 2, Belmont Regional Park, Allied Concrete. and Belmont Quarry. Access to these areas is over the State Highway 2 Interchange. Belmont Regional Park forms the western skyline to the west of site and topographically rises to 180m above sea level (asl) over 1km from site. To the east of the site is the suburb of Stokes Valley which forms the eastern side of the Hutt River Valley. The topography then steeply rises from approximately 17m asl at the site to 200m asl near Silversteam Landfill over 2km from site. Manor Park, Haywards Substation and Judgeford via State Highway 58 are to the north of the site, with the greater area of Hutt City to the south.

2.12 **Receiving Environment**

The receiving environment is comprised of existing activities that were lawfully established, permitted activities and those activities for which resource consent has been granted, and that consent is reasonably likely to be implemented. This is the environment that effects must be assessed against.

[2] Deed of Settlements: Attachments 2012, p.159.

Consent has been granted for bulk earthworks and vegetation removal. This consent is attached in Appendix 7 with approved plans. These works and the levels proposed under the consent form part of the receiving environment. There are no other known consents or consents in the wider environment that are unimplemented that we are aware of.

3.0 Background

3.1 Site Suitability

There are very few alternatives available to accommodate a fit-for-purpose waste management facility. Waste Management has been looking for a suitable site for over 15 years and none have been suitable. Within the existing urban area, sites are not large enough or are too close to sensitive receivers. Rural sites are constrained as they often contain wetlands or other environmental features or are not flat. To work efficiently, a location close to the market where waste is generated is required.

There is no way to avoid the activity. The waste management facility proposed is to implement all stages of the waste management hierarchy, as set out above. The only alternative to waste management facilities is transfer direct to landfill or other end facility. This does not encourage re-use or reduction of waste going to landfill. It is also not efficient and results in trucks travelling larger/longer distances.

3.2 **Demand for Waste Management**

The facility is designed to serve the greater Wellington Region. There is predicted demand for an additional 103,770 households in the greater Wellington Region by 2051 with current capacity for 78,318 dwellings.[3] With an increase in households and businesses in the region, municipal waste and construction and demolition waste will increase. The proposed facility will help meet part of this demand.

The facility will incorporate measures that contribute to waste minimization. This is key to sustainable management of resources in the region and achieving waste minimization goals and obligations under the Waste Minimization Act 2008 (WMA)[4]

The Waste Minimization and Management Plan for the Wellington Region seeks to reduce the total quantity of waste sent to Class 1 landfills from 600kg to 400kg per person per annum by 2026. The plan, that is prepared to give effect to the WMA, considers the waste hierarchy, ensures waste does not become a nuisance, and partially fulfils statutory obligations of Councils in the Region to manage waste.[5]

[3] Wellington Regional Housing and Business Development Capacity Assessment – Housing Update May 2022, Page 6

[4] https://legislation.govt.nz/act/public/2008/0089/latest/DLM999802.html?search=ts_act%40bill%40regulation%40deemedreg_waste+minimisation+_resel_25_a&p=1 As accessed on 20 January 2023.

[5] Wellington Region Waste Management and Minimisation Plan 2017 - 2023

The waste management facility proposed helps achieve waste minimization and management of waste by including, in one place, a range of facilities that implement the waste management hierarchy. This is in addition to meeting demand for increased waste that will result from the growth of households and businesses in the Wellington Region.

3.3 Urban Growth Strategy

The proposal will contribute to giving effect to the Urban Growth Strategy. The Urban Growth Strategy 2012 – 2022 published by Hutt City Council in 2014 sets out challenges with providing further business land in Hutt City as follows:

The city's commercial and industrial land supply is largely fixed by the extent of the existing development along with our typography and territorial authority boundaries, with only a few opportunities for expanding either.

The strategy identifies the wider parcel of land subject to this proposal and states:

The land in Manor Park is currently owned by the New Zealand Transport Agency and is zoned rural, limiting its uses to farming purposes. Much of the land is uncompacted fill and is subject to two hazards – the fault line and flooding from the Hutt River.

Consequently, it is not suitable for any intensive uses such as general business or residential. However, Council is interested in exploring the possibility of using this land for limited, light industrial purposes that are less at risk from these hazards, such as truck depots. Given the site is at the centre of the region and is at the junction of State Highway 2 and State Highway 58, the site could lend itself very well to such uses, especially once the Transmission Gully Motorway is built. [6]

Transmission Gully is now complete and operational. The proposal efficiently uses land identified by the growth strategy in Manor Park for business purposes. Waste management facilities require large parcels of land to operate and provide services that minimize waste, including material recovery, and the facilitation of recycling and re-use. The proposal has addressed the constraints identified in the Growth Strategy and risk in relation to natural hazards is minimized by the mitigation measures proposed.

In addition to utilizing the site in a way that is consistent with the Growth Management Strategy, locating the proposal on the subject site avoids the need to occupy a large amount of Business Zoned land that could be better used to meet a number of activities that do not require a large land area. In this way, the proposal indirectly contributes to the supply of business land. This is a benefit of the proposal, considering that business land in Hutt City is identified as a constrained resource in the Growth Strategy.

[6] Hutt City Council. 2014: Urban Growth Strategy 2012 – 2032 (p.37)

3.4 Meetings with Hutt City Council

A pre-application was held with Hutt City Council on 10 November 2021. The outcomes of the meeting were:

- Regional Consent may be required for industrial and trade activity discharges and discharges to air,
- That flood mitigation would be required, and suitable mitigation provided to support the proposed activity, and
- Expert input into water management, civil engineering, flood, geotechnical, contaminated land, traffic, and full development plans would be required to support the activity at resource consent submission.

A pre-application meeting was held with Hutt City Council on 28 July 2022. The outcomes of the meeting relevant to this application were:

- The upgrading of the roading that supports this development was supportable.
- Highlighting noise as an issue that will require specialist analysis and mitigation if required.
- The need to outline traffic generation caused by the activity, and
- If any signs were proposed as part of the development and how the stormwater is to be managed onsite.

A further meeting was held in the latter part of December 2022 to provide an update on the progress of the application, summarise the draft application and outline the intended approach to consent being lodged concurrently with the land use consent application for access and servicing.

Waste Management Managers has also met with the Hutt City Council, to inform them of the proposal.

3.5 Consent RM2220258 for Bulk Earthworks and Vegetation Removal

Consent Consent RM220258 was granted on 21 December 2022 to remove vegetation and undertake bulk earthworks on the wider site, maintaining a riparian corridor adjacent to Dry Creek. These works are to commence as soon as possible, once pre commencement conditions have been met.

The works subject to this consent will not be given affect to until the bulk earthworks are largely complete, as the proposed site development is reliant on the site levels created through the bulk earthworks. Copies of consents to fill the site from both Hutt City and Greater Wellington Regional Council are attached in Appendix 7, with approved plans that show final levels.

3.6 Concurrent Land Use Application

A consent application has been lodged with Hutt City Council for servicing and roads within the lot, including transport network upgrades. This covers the wider site and the part of the subject to this proposal. As Waste Management is dependent on these works; however, it is requested that the two applications be processed concurrently. The AEE report for the concurrent land use application is attached in Appendix 11, noting that it does not form part of this application and is attached for reference only.

4.0 Proposal

A Resource Recovery Park is proposed on the southwestern part of the site. The resource recovery park will include the following activities that are shown in **Figure 7**:

- Secondhand goods store: A retail store selling secondhand goods, unwanted by the person that dropped them off. This allows for re-use and upcycling. The secondhand goods area has a large functional area for the public to drop off goods that will be under cover.
- Repair cafe to allow damaged goods to be repaired and sold in the secondhand goods store or kept by the owner. The café will also serve as a café to visitors and personnel working at the Park.
- Material recovery facility. Recycling is sorted and may be put into bales for further processing off site.
- Transfer station: This is where waste from municipal collections and private households is stored and compacted for transfer to landfill.

To support these facilities, the following is proposed:

- Weighbridge.
- Comprehensive water management and treatment.
- Associated parking, EV charging, and maneuvering.
- Offices that support the operation of the facility.
- A workshop for mechanical repairs and servicing of trucks and waste management vehicles and equipment.
- Bin storage and bin wash facility.
- Truck wash facility.
- Associated landscaping and planting.
- Sign at the entry stating the name of the park and directional signs within the park.
- Gates and security fencing; and
- Landscaping and planting.

Figure 8: Proposed Site Plan. Source: Harris Architects Limited

A key part of the proposal is that all high-risk or industrial and trade activities will be undertaken indoors to reduce environmental risk. All contaminants from these activities will be removed off-site for treatment.

The following sections of the report set out details of the proposal.

4.1 Development Stages

The proposed development will be constructed in two stages. The first stage covers the construction of the overall resource recovery park and Stage 2 covers additional add-on requirements to aid in the operation of the facility. The site features included in each stage are outlined in the following subsections.

4.1.1 Stage 1

Stage 1 consists of the establishment of the following activities:

- Weighbridge.
- Transfer station.
- Construction and demolition building.
- Public drop-off area associated with second-hand goods store.
- Bin storage area.
- Office and administration block with staff amenities.
- Car parking.
- Truck parking.

- Pavements and roads.
- EV charging.
- Truck wash bay.
- Bin wash bay.
- Service connections.
- Water treatment.
- Planting.
- Dangerous goods store.
- Fencing.
- Material recovery facility.
- Workshop, and
- Signage.

4.1.2 Stage 2

- Waste compactors.
- Further EV charging, and
- Any additional requirements to comply with conditions of consent or enhance site operation.

4.2 Hours of Operation

Mobile machinery on the site will operate Monday to Sunday 0700 – 1700 and these will only operate within the proposed buildings. The resource recovery park will be open to the public Monday to Sunday, 0600 – 1800. There will be some truck movements during the night and between 0600 – 0700 to aid the efficient operation of the Park.

4.3 Site Layout and Characteristics

Full plans of the proposed development are attached in Appendix 8. The layout has been designed to facilitate the practical operation of the site and circulation of heavy vehicles. The layout also seeks to segment those areas of the site open to the public from those areas that members of public will not be permitted to enter. Clear directional signs and arrows will be installed on-site. The site layout also responds to constraints, specifically the location of the Faultline and associated no build area and location of Dry Creek.

Due to the activity proposed involving waste transport, high numbers of pedestrians and cyclists are not anticipated. Pedestrian and cycling facilities are incorporated into the development's design.

Tables 2 and 3, below, sets out key characteristics of the development.

Proposed Activity	Stud Height
Retail and Café Building	3m High Stud
RTS Operations Workshop	12m High Stud
C&D Operations Warehouse	
MRF Operations Warehouse	10m High Stud
Office Building	8m High Stud
Workshops	

Table 2: Proposed Activity v HCC Maximum Height Standard.

It is noted that the yard setbacks exceed 12m and are unlikely to trigger consent for recession plane requirements.

Proposed Activity	Site Coverage
Retail and Café Building	950m^2
RTS Operations Warehouse	3,750m^2
C&D Operations Warehouse	1,575m^2
MRF Operations Warehouse	2,250m^2
Office Building	800m^2
Workshops	550m^2
Total Coverage	9,875m^2

Table 3: Proposed Activity v HCC Site Coverage Standard

4.4 Electric Vehicle Chargers

Electrification of both the light and heavy vehicle fleet is a key goal for Waste Management and several electric vehicles form part of the fleet. To facilitate the operation of these vehicles, the resource recovery park will include several electric vehicle chargers. These will be within the truck and light vehicle parking areas.

4.5 Water Management

Note: Water management is set out in detail in the water management report, attached in Appendix 9.

To conserve water, water re-use is proposed for truck washing and will be implemented for any other activities where practical. All re-used water will be treated and recirculated. Water that is retained in tanks from the roofs of buildings will be used for non-potable purposes within all buildings, including dust/odour suppression, wash down of the transfer station floor, and bin wash. Should the tanks contain insufficient water, they will be topped up from the reticulated network. The reticulated network will be used for potable water. Both tank and reticulated water will be used for fire safety purposes.

Contaminants from the bin and truck wash, and from the floor of process buildings (including the waste transfer building) will be collected by an underground storage tank. The contaminants will then be removed and treated off-site. If this is not possible during detailed design, process wastewater will be discharged to wastewater, controlled by a trade waste consent. The proposed workshop will be a dry workshop, with no discharge of contaminants. The storage and removal of industrial and trade waste avoids environmental risk and the possibility of entrainment in the stormwater network.

All proposed tanks are underground and will have an overflow to the stormwater management system, that discharges to Dry Creek. Stormwater from the car park and impervious areas of the site will be treated prior to discharge using a proprietary stormwater treatment device.

4.6 Landscaping

On-site mitigation to minimize visual amenity and character effects includes on-site planting, ensuring a recessive building colour, and dispersing buildings on the site. In turn, a continuous building mass is

avoided. A landscape plan and visual assessment included in Appendix 4 and these also show fencing. The exterior of the buildings will be karaka green or a colour with a similar reflectivity value.

Offsite mitigation is also proposed and is the contouring and planting of land owned by Greater Wellington Regional Council adjacent to the site, that is part of the Hutt River Trail. The location of the proposed off-site planting is shown in Figure 9 below. Access for Greater Wellington Regional Council to maintain the Hutt River, particularly after flood events, is provided through the site and planning area.

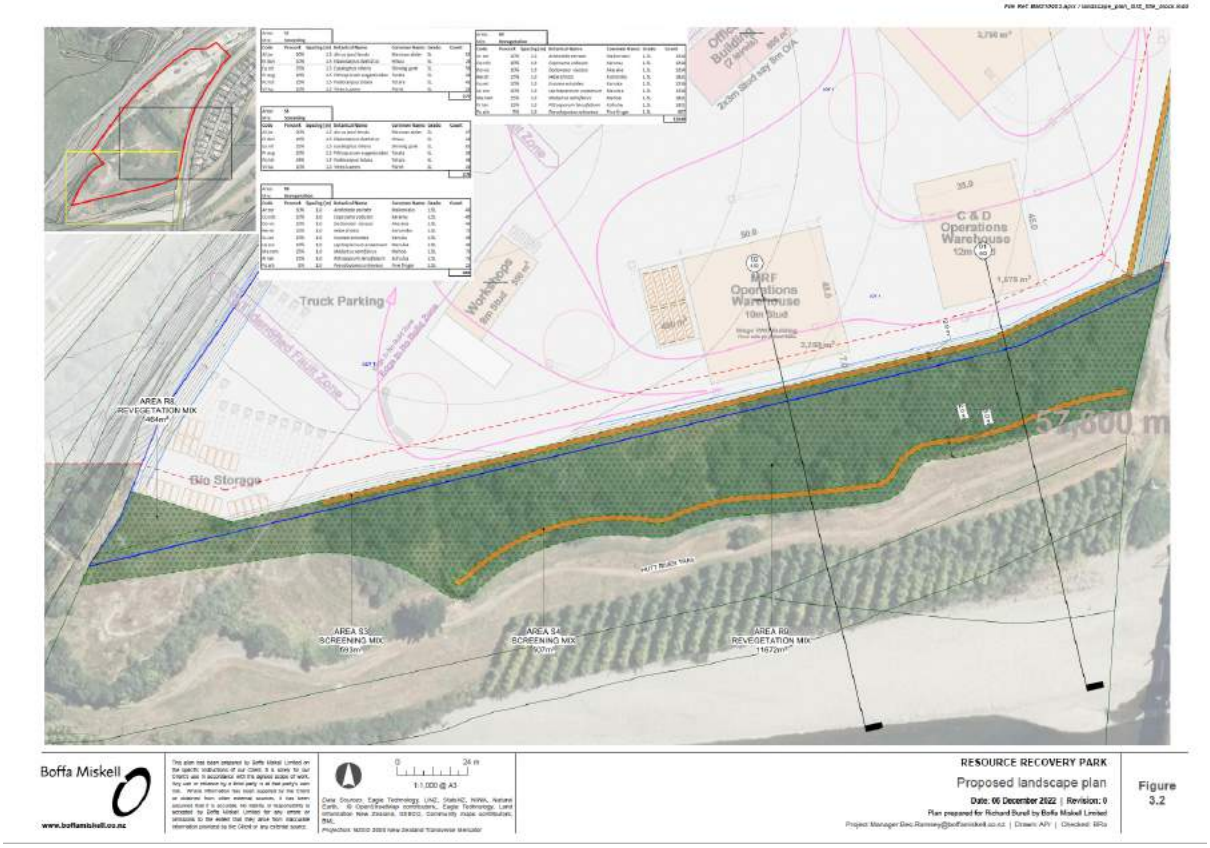


Figure 9: Planting Plan. Source: Boffa Miskell

4.7 Odour and Pest Management

A contractor will be engaged to implement pest management on site. Pest management on the wider site, including riparian margins, will be undertaken under the conditions of the fill consent. Odour is minimized by the transfer station being located within a building. Water can be used to suppress odour and an odour cannon will be used if required.

4.8 Site Access and Infrastructure

The road to access the resource recovery park and upgrade to Benmore Crescent have been designed as part of the land use consent for services and roads to be processed concurrently with this consent (refer to section 3.4 of this report). Plans for the road are attached in Appendix 10 and access to the site is discussed in the traffic assessment report also attached in Appendix 10. The road terminates in a cul-de-sac to allow traffic that does not want to enter the resource recovery park to safely turn around. This avoids traffic utilizing the resource recovery park to turn around and ensures safe maneuvering when the resource recovery park gates are closed.

In addition to the new access road, an upgrade to Benmore Crescent is also proposed. This is required to safely facilitate the number of vehicle movements that will be generated. Details of upgrades are included in the traffic assessment report, along with rationale for the upgrades.

Wastewater infrastructure will be extended to the site, as will water supply. Details for this infrastructure, which are included within the concurrent land use consent, are discussed in the Water

Management Report in Appendix 9. The proposed stormwater management will be private and will operate as set out in the Water Management Report.

4.9 Signs

There will be a sign at the entry of the site to state the name of the facility, hours of operation, and any health and safety matters persons entering the site should be aware of. Within the site, there will be directional and health and safety signage. The design of signs may be approved as a condition of consent and all signs will comply with permitted activity criteria (set out in Appendix 3). No signs will be placed on the façade of any building where they will be visible from the Hutt River Trail or Mary Huse Grove.

4.10 Land Disturbance

Minor land disturbance is required for some leveling and building foundations. This work will be undertaken with erosion and sediment controls in place until the site is stabilized. An accidental discovery protocol will also be in place for the duration of the works.

4.11 Management Plans

The site will operate in accordance with several management plans that may be consolidated into one environmental management plan, including the following:

- Hazards Management Plan
- Traffic Management Plan
- Noise Management Plan
- Water Management Plan
- Spill Response and Emergency Management Plan
- Health and Safety Plan
- Sustainability Plan (including complaints management).

4.12 **Hazardous Substances**

Some hazardous substances will be stored and used on-site. The quantity and types of substances are not finalized. Should consent be required for a hazardous facility, this will be sought separately once quantities are confirmed.

5.0 Consent Requirements

Note: Our assessment of consent requirements is based on the plans and information provided to us. In the event of inconsistency between the plans and information provided below, the plans take precedence, including in infringements identified, noting Council can amend or add reasons for consent and infringements should consent be granted.

We have taken care to identify all reasons for consent. However, our assessment relates to the proposal in its entirety (as shown on the plans and appended information) and is therefore considered wide enough to cover any additional reasons for consent that Council may identify.

5.1 City of Lower Hutt District Plan 1995

RESTRICTED DISCRETIONARY ACTIVITIES

- 8B2.2(c) Cafes and restaurants: A repair café forms part of the resource recovery park.
- 14A.5.1(c) Any activity that exceeds the high trip generator thresholds specified in Appendix Transport 2.
- 14H2.1(a) All structures and budlings on any site where the whole site or a portion of the site falls within the Wellington Fault Special Study Area.
- 14I 2.2(a) Earthworks that do not comply with permitted activity conditions (over 50m^3 of earthworks are necessary).

DISCRETIONARY ACTIVITIES

- 8B.2.3(a) Buildings that do not comply with the permitted standards (8B.2.1.1(c) Maximum Height and 8B.2.1.1(e) Site Coverage)
- 8B.2.3(e) Transfer stations.

NON-COMPLYING ACTIVITIES

- 8B.2.4(a) Any other retailing activity: second-hand goods store forms part of the proposed resource recovery park.
- 8B.2.4(c) Any industrial activity: Resource recovery (recycling) is part of the proposed resource recovery park as does a mechanical workshop (for the use of Waste Management vehicles only).

A full assessment of compliance with plan provisions is contained in Appendix 1.

6.0 Assessment of Environmental Effects

6.1 Receiving Environment

The receiving environment is as set out in Section 2.12 of this report and as described in section 2. As set out in that section, the bulk earthworks consent (Appendix 7) is unimplemented, but is likely to be implemented, as it is a pre cursor to development. The bulk earthworks consent forms part of the receiving environment.

6.2 Permitted Baseline

In the General Rural Zone, activities that are not restricted discretionary, discretionary, or non-complying and comply with stated conditions, are permitted. There is potential for activities that do not have a rural character or relate to rural production to establish in the Rural Zone as a permitted activity. The zone rules do not anticipate solely rural production activities.

The building standards allow a building height of up to 8m with site coverage of 1,000m^2. A 10m yard setback is required by the conditions and various height in relation to boundary rules apply, depending on the orientation of the boundary the recession plane is measured from (permitted activity criteria are set out in full in Appendix 3 of this report).

As a permitted activity, a 1,000m^2 building could establish that is 8m high. Such a building could be any colour and would not require any screen planting. The outline of such a building is shown in Figure 10 below, as could be seen from Mary Huse Grove.

Figure 10: Potential Permitted Building from Mary Huse Grove (Boffa Miskell)

Traffic movements from activities with a floor area less than 5,000m^2 do not require consent as a high trip generating activity. A truck depot or similar activity could establish on site with a relatively high number of traffic movements.

The nature of activities that could establish in the zone, permitted activity conditions and the threshold for high trip generating activities may form part of the permitted baseline to assess effects of the proposed resource recovery park.

6.3 Positive Effects

The resource recovery park will assist to minimise waste and to manage waste in a fit for purpose for facility that incorporates sustainable features. This provides a significant asset to Hutt City and the wider Wellington Region. The resource recovery park will continue to provide employment and associated economic benefits. The site is larger than the current site from which Waste Management currently operates. The larger site allows for expansion when compared to the current operation and may result in further employment.

As set out in the background section of this report (Section 3), business land in Hutt City is in short supply. Locating the resource recovery park at Manor Park does not consume what limited supply of business land exists. It also effectively increases the supply of business land as postured by the Hutt City Growth Strategy.

6.4 Traffic Effects

An assessment of traffic effects has been undertaken by Stantec and a Traffic Assessment Report is attached in Appendix 10. The adjacent road environment is shown below duplicated from the report to provide context for the assessment that is summarised below.

Figure 9: The adjacent road network environment in context of the site. Source: Prover

Upgrades are proposed to the intersection of Benmore Crescent with Manor Park Road and to the rail level crossing. Full details of these upgrades are discussed in the servicing land use consent, to be processed concurrently with this application. Plans are attached in Appendix 10 for reference. One vehicle accident has been identified in vicinity of the site; however, the traffic assessment notes that the crash record does not indicate any safety issues and notes the upgrades that are proposed.

The proposal infringes the high trip generation threshold due to the gross floor area proposed being over 5,000m^2. The traffic assessment report concludes that traffic generated from the proposal can be accommodated by the road network, with the upgrades proposed. Sustainable transport will be promoted by the pedestrian connection between the site and Manor Park Rail Station as well as access to the Hutt River Trail.

Within the site, parking and manoeuvring has been designed to be sufficient for the size and number of vehicles. Traffic routes are shown within the plan set attached in Appendix 8. The layout of the site has been designed to separate out public and restricted areas of the site and ensure efficient traffic flow. The assessment concludes that the site will fully accommodate parking demand.

With reference to the traffic assessment, traffic effects of the proposal are less than minor, subject to conditions including the following:

- *The facility must not operate until road upgrades have been completed.*

- *A traffic management plan must be prepared to guide construction and operation of the resource recovery park.*
- *Directional signage or on-ground signage must be implemented prior to operation of the facility.*

6.5 Acoustic Effects

Tonkin & Taylor has undertaken an assessment of acoustic effects and a report that sets out this assessment is attached in Appendix 11. In summary:

- The level of noise generated will comply with permitted activity criteria at the nearest sensitive receivers (these are 27 Mary Huse Grove, 29 Mary Huse Grove, 31 Mary Huse Grove, 1397 High Street, and 1404 High Street). Noise levels will be similar to the existing noise environment during the day and is considered reasonable.
- There are no vibration limits in the District Plan and standard practice is to use the vibration guideline levels in the German Vibration Standard DIN 4150-3:1999. Vibration is a concern only during construction. It is unlikely that vibration will be perceptible during construction.

With reference to the appended acoustic assessment, the effects of noise and vibration from both construction and operation of the resource recovery park are anticipated to be less than minor. A condition of consent that states required noise limits is suggested.

6.6 Landscape, Character, and Visual Effects

Boffa Miskell has undertaken an assessment of landscape effects and a report setting out this assessment in attached in Appendix 4. On-site mitigation to minimize visual amenity and character effects includes planting on the site, ensuring a recessive building colour, and dispersing buildings on the site. This, in turn, avoids a continuous building mass.

Offsite mitigation is also proposed and is the planting of land owned by Greater Wellington Regional Council adjacent to the site, that is part of the River Walkway. The location of the proposed off-site planting is shown in Figure 9. This offsite mitigation benefits the adjacent land, used as part of the river walkway, increases biodiversity, and will offer amenity to users of the recreation land.

Regarding landscape, character and visual effects, the visual assessment concludes:

- The site may be visible from Mary Huse Grove, Silverstream and the Hutt River Trail. A small portion of the site may also be visible from State Highway 2. From all points but the State Highway, the site will be seen against a backdrop of the wider area and hills behind.
- The natural character of Dry Creek, which is currently assessed as low to moderate, will not change because of the proposal, as a 10m riparian margin will be maintained.
- The proposed development is a small part of a wider landscape and effects at the wider landscape scale are low. Local landscape effects may be low to moderate due to the scale of the buildings proposed.
- Visual effects are mixed from low to moderate. From the Hutt River Trail, the site will be intermittently visible for approximately 500m of the trail, on either side of the river. Planting and building colour have been designed to minimise effects for users of the Trail. The appended landscape assessment notes that the planting is in keeping with the Hutt City Council River

Environment Strategy and will reduce effects as experienced from the Trail. From the residential area at Mary Huse Grove, visual effects range from low to moderate.

- From public places views are mixed, but planting has been designed to integrate the facility into the wider landscape.
- Effects decrease after the five-year period for plant growth.

Plan context is important when considering landscape, character, and visual effects because the site and zoning is unique. The subject site is not a typical rural site, as discussed in Section 2.2 of this report. It does not have the character or amenity that a General Rural Zoned site would have, as it is isolated from other rural land and its use for rural production is limited by its size and location. This is the context that it is viewed within, as would be the case for any small pocket of land zoned Rural, surrounded by Urban Zones on one side and separated from other Rural Zones by a major piece of infrastructure. The zoning pattern means that the site cannot have a character typically associated with rural areas. Those viewing the site as part of a wider landscape are unlikely to expect either the character or amenity one may anticipate of other rurally zoned sites.

The amenity of the wider, surrounding area including the residential area at Mary Huse Grove has been modified by the Rail Line Buffer Area. The rail line appears to sit approximately 2m higher than land it adjoins. The rail corridor is a significant piece of infrastructure and Issue 13A 2.2 of the District Plan acknowledges effects that such infrastructure can have. It states, '*the construction, operation, and maintenance of the transport network can have adverse effects on the surrounding environment, including noise, vibration and visual effects*.'

The District Plan defines a State Highway and Railway Corridor Buffer of 40m wide. Activities in the corridor sensitive to noise, such as residential activities, must incorporate additional noise mitigation. The presence of the corridor overlay and accompanying standard indicates an acknowledgement that effects cannot be internalized within the site occupied by the rail line and State highway. As a result, the potential amenity of these areas is lower than sites not within the corridor.

The context of the Plan and site is also important to assess effects on the Hutt River Trail and persons using that trail. The Hutt River Trail is within the esplanade reserve for the river. There are no specific restrictions on land uses that can be established on land that is next to esplanade reserves or the trail, or requirements for mitigation or any screening of activities, over and above zone provisions. Indeed, the trail passes a mix of activities, including those on General Business Zoned land. Parts of the trail are next to the State Highway. The Plan does not seek to specifically manage visual effects of activities next to the Hutt River Trail and land adjacent to the trail does not have any one zone, indicating that there is no specific planned character for sites that are next to the trail.

Five hundred metres of the trail extends past the site (approximately). It is highly unlikely that users of the trail will experience just this portion of the trail in isolation unless they were purposefully wanting to do so. This is due to the location of exit and entrance points to the Trail. There is an entrance from Mary Huse Grove. For those walking from this point passed the site; however, the next entrance point is at Owen Street which is approximately 3.4km away (that is on the same side of the river). Even those users that walk a portion of the path and then turn around and come back are unlikely to experience just the portion of the path that goes passed the site in isolation. It is understood that currently some

users of the pathway may walk in a loop, from Mary Huse Grove and then through the wider site and back to Mary Huse Grove. Access through the site will not be available during works or once the site is operational, noting it is private property and no easements for pedestrian access exist. A portion of the trail is next to the State Highway, shown below.

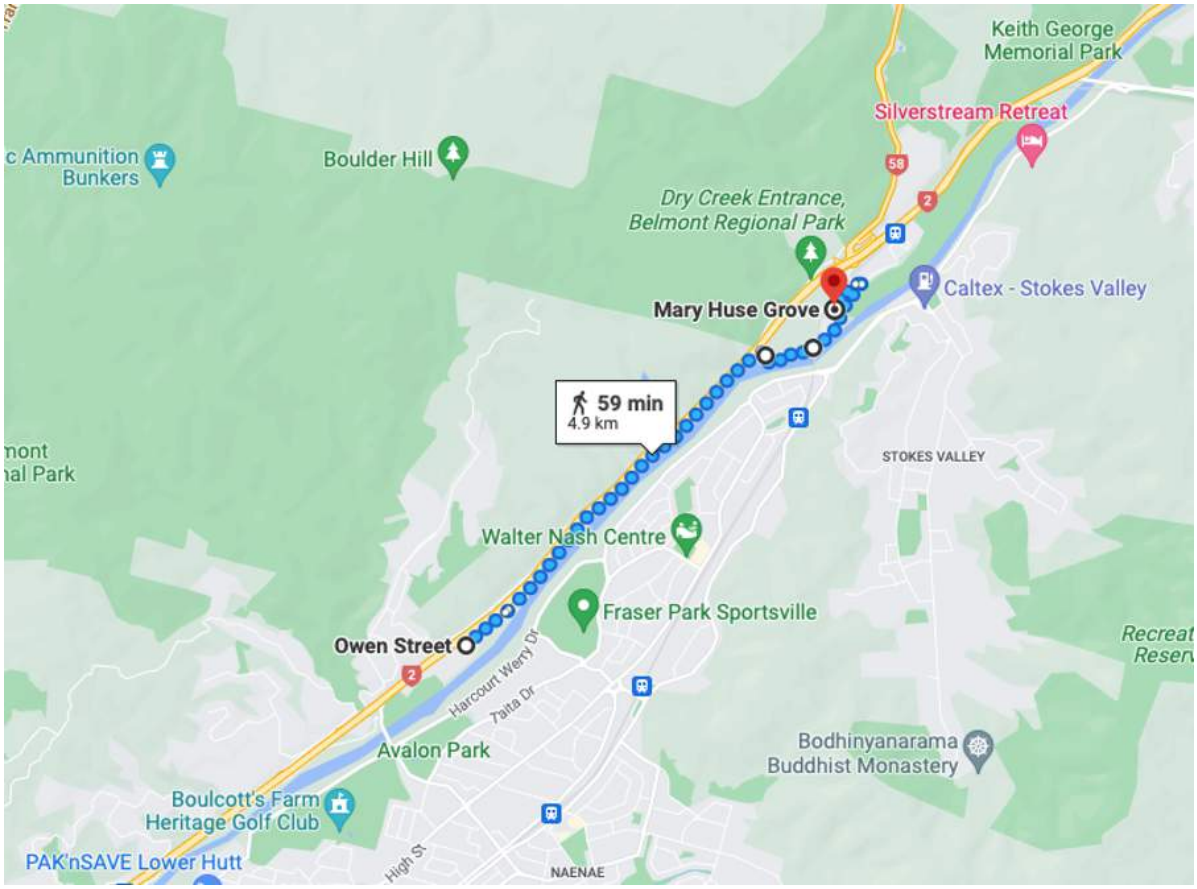


Figure 10: The portion of the Hutt Valley River Trail and distance between the two available exit points. Source: Google Maps 2022

Planting is proposed and is consistent with the vision for planting along the Trail. The buildings proposed are also recessive in colour.

The permitted baseline should also be considered when considering landscape, character, and visual effects. The zone does allow for a range of activities that meet permitted activity criteria. Activities could be established as of right that do not have a typical rural character or relate to rural production. As set out in **Section 5** of this report, as a permitted activity, a building of 1,000m^2, of any colour and with no screening could be established on the site, with a height of up to 8m. Some trail users or persons viewing the site from other viewpoints could find this to be dominant.

Whilst visual effects and local landscape effects from some isolated viewpoints are assessed as moderate for a temporary period until plants are well established, for the reasons set out above and in the context of the planning framework, we consider landscape, character, and visual effects from the proposal are minor. This is subject to fair and reasonable conditions to control these effects.

Suggested conditions are:

- All buildings must have a recessive colour palette (reflectivity value of 20% or less)
- Before construction, a final planting and maintenance plan, in general accordance with the Boffa Miskell planting plan, must be approved.
- Planting identified on the landscape plan must be planted within the first planting season following construction of the proposed buildings and maintained thereafter.

6.7 Amenity Effects

As set out above, amenity values of the receiving environment are not high, due to the extent of modification that has taken place due to the State Highway and Rail Line. The proposal has been designed to reduce adverse amenity effects generated from the proposed buildings and activity. This is achieved by having most of the activities indoors, lighting being directed away from the site boundaries, the proposed planting and pest management, and controls of hours of operation for all but low-impact activities. The effects of the resource recovery park are consistent with immediately adjacent uses and will not affect the amenity of the State Highway or Rail Lane, noting the conclusions of the traffic assessment that the effect on the infrastructure network will be less than minor. Effects on amenity of the river pathway are set out in Section 7 of this report.

From other surrounding areas amenity effects, will be less than minor, for the following reasons:

- Nuisance effects are internalised within the site, including dust and odour.
- Vibration is not expected to be perceptible.
- Light will be directed within the site.
- Signs will comply with the permitted activity criteria, and
- Noise will comply with permitted activity criteria at residential areas at High Street and Mary Huse Grove.

Hours of operation, control of light, odour, dust, pest control, noise levels, and implementation of proposed planting are suggested conditions of consent.

6.8 Natural Hazard Risk and Effects

6.8.1 Flooding

The site is subject to two potential flood hazards: flooding from the Hutt River and from Dry Creek.

<u>Hutt River</u>

The site is within the secondary river corridor, as shown in Figure 1 of this report. Permitted activity standard (q) that regulates development within the Secondary River requires buildings to be above 28.0 msl. The standard is based on an older flood model published by Greater Wellington Regional Council. During previous conversations about planning for the subject site, Greater Wellington Regional Council confirmed the modelling is outdated[7]. A site-specific flood assessment has been undertaken for the site by River Edge Consulting (Appendix 6) and confirms the extent of inundation differs from that shown

[7] Flood Assessment Report prepared by River Edge Consulting, Appendix 15 (p.1)

on Greater Wellington Regional Council maps. The site is not impacted by flooding from the Hutt River to the extent shown on the Greater Wellington Regional Council model.

The bulk earthworks authorized by consent RM220258result in a finished level for the portion of the site Waste Management will occupy ranging from RL25[8]. The flood assessment concludes that following these works the site will not be subject to inundation from the Hutt River during a 1 in 440-year event. The assessment recommends freeboard of 0.9m for all buildings within the Hutt River Corridor and all buildings within this part of the site have been designed to achieve this floor level.

Given the floor level design, and the location of buildings outside the area of inundation from the Hutt River during a 1 in 440-year event, risk from flooding is low.

Dry Creek

Flooding from Dry Creek that flows through the site has also been modelled and is shown in Figure 6, of this report. The figure shows that all proposed buildings are clear of the flood hazard and egress from the site is not impacted.

Suggested conditions of consent are the following:

- All buildings must be above 28 asl, and
- Activity to proceed in accordance with the plans.

6.8.2 Stability and Geotechnical Effects

A portion of the site is within the Wellington Faultline Study Zone, shown on Hutt City District Plan maps (Figure 1). Any building on a site where a portion of that site is within the Wellington Fault Special Study Area is a restricted discretionary activity under Rule 14H.2.1. The single matter of discretion relevant to Rule 14H.2.1 is:

Safe Separation Distance of Structures and Buildings from the Wellington Fault:
For all structures and buildings, an engineering report will be required to confirm that the Wellington Fault is not within 20.0m of any proposed structure or building, or that the necessary engineering precautions have been taken.

A site specific Faultline Assessment has been undertaken and is attached in Appendix 5. The assessment has determined a 'no build' zone 20m either side of the assessed position of the Faultline. This no build area is shown on the proposed plans and all buildings in this case are clear of this zone. Activities within the no build area are limited to the following that are not sensitive to seismic risk:

- Vehicle parking.
- Drop off area for the secondhand goods store, and
- Bin storage.

[8] Approved plans showing finished ground levels authorized by consent RM220258 attached in Appendix 6.

It is noted that a canopy is proposed over the drop-off area and defined as a building. It is not; however, a structure that will be occupied and is open. It is noted that accessory buildings, not for working purposes, do not require consent in the Wellington Faultline study area.[9]

Conditions of consent are suggested to limit activities within the fault zone to those shown on Site Plans and engineering plans and to require specific geotechnical design and supervision of future buildings on the site.

6.8.3 Stability

The stability of the site has been considered as part of the assessment for the bulk earthworks consent at conceptual level and all earthworks to implement that consent will be supervised by a suitably qualified person. As set out above, detailed geotechnical design will be undertaken to support the building consent applications for the buildings proposed as part of this application. Building construction will be supervised as appropriate to ensure land stability, a suggested condition of consent.

6.8.4 Hazard Management Policy

The site will operate in accordance with a hazard management policy. This policy will set out steps to be taken to minimize the impact of natural hazards and immediate steps to be following in the event of a natural hazard event, including:

- Floods.
- Tsunamis.
- Earthquakes, and
- Extreme weather events.

The preparation of a hazard management policy is a suggested condition of consent.

6.8.5 Environmental Risk

A dangerous goods store is required to support activities on site (e.g., workshop). All hazardous substances will be stored and managed as per relevant regulations. Based on initial information, consent is not expected to be required under the hazardous facility rules. If required, consents will be sought once details of the goods required on-site have been determined. As set out below, the environmental risks from trade waste generated from operation of the resource recovery park will be largely avoided by this waste being transported off site for treatment or via trade waste.

6.9 Effects on the Natural Environment

A small amount of land disturbance is proposed to form building platforms and the internal parking area and access roads. During earthworks, erosion and sediment controls will be in place, as will an accidental discovery protocol. The provision of an erosion and sediment control plan and the protocol are suggested conditions of consent. All controls will be in place for the duration of works and monitored as appropriate.

[9] Rule 14H2.1(a) Hutt City District Plan.

Following construction, effects on the natural environment will be no more than minor, for the following reasons:

- All activities, apart from parking and bin storage, are undertaken within buildings or covered. This minimises dust and ensures that risk to the stormwater network is largely avoided.
- Trade activity areas are separated and contaminants from draining and washdown of these areas, including the truck wash and bin wash, will be stored in underground tanks, and removed off-site for treatment or discharged to trade waste (sanitary sewer).
- Devices will be in place to treat stormwater generated for site.
- The workshop will operate as a dry workshop avoiding discharges.
- Hazardous goods will be stored appropriately and bunded as required.
- The site will be operated in accordance with an environmental management plan.
- EV chargers are incorporated into the development.
- Sustainable transport modes are provided for within the development.
- The site is on a platform created largely from filling the site. Aside from some strengthening works for building foundations and pavement, no cuts are proposed. Given this, groundwater is not anticipated to be encountered during site works or adversely affected by the proposal.

6.10 Cultural Effects

It is appropriate only for Mana Whenua to determine effects on cultural values. Taranaki Whanui and Ngati Toa have both been consulted. As set out further in Section 7.1, consultation with both is ongoing. Taranaki Whanui have provided verbal approval in principle and have not identified any concerns. Waste Management offers the opportunity for Mana Whenua to conduct a karakia or cultural blessing, should they wish to do so. It is noted that the Hutt River is significant to Mana Whenua as set out in Section 2.10 of this report. Effects on the Hutt River relevant to this application are discussed in the natural environment effects section, above. Waste Management further anticipates Hutt City Council will contact Iwi during processing of this consent.

6.11 Reverse Sensitivity

The site is not sensitive to any adjacent land uses that are established. It is compatible with effects generated from both the State Highway and railway line. Reverse sensitivity effects are therefore less than minor.

6.12 Cumulative Effects

The site is currently vacant. There are no existing activities on-site that would generate cumulative effects in combination with the effects of the proposed resource recovery park within the wider environment, including the Hutt River Trail, State Highway 2, or Rail Line Buffer Area. Cumulative effects to those properties at Mary Huse Grove closest to the site are set out in Section 7.3 of this report. From Mary Huse Grove itself, the street is sufficiently separated from the proposed site and the effects of the resource recovery park will result in cumulative effects that are less than minor, at most.

6.13 Precedent Effects

As a non-complying activity, it is appropriate to consider precedent effects. The subject site has unique characteristics. It is surrounded by urban uses but zoned Rural, in between two major pieces of infrastructure and subject to natural hazards. The proposal can utilise a site with these constraints. As set out in Section 3.1 of this report, the Hutt City Growth Strategy does outline a requirement for better waste management for the future. No other site with of a comparable size with the characteristics of the site could be found reviewing cadastral maps. Other Rural Zoned land parcels do not have the distinct characteristics that distinguish the site. For these reasons, the application is not likely to set a precedent for the operation of industrial activities in the Rural Zone. A resource recovery park is also distinct from other industrial activities, as it does not involve the manufacturing or processing of goods but rather the management of waste. Indeed, the activity is unique, and this is reflected by the fact that Waste Management has been looking for a suitable site for over 15 years.

6.14 Summary: Adverse Effects

Overall, effects of the proposal are no more than minor.

7.0 Consultation and Notification

7.1 Consultation

Consultation has been undertaken with Ngati Toa and Taranaki Whanui. This included a meeting on site. Consultation has also been undertaken with Kiwi Rail and background to this is set out in the attached traffic assessment reports. Consultation is ongoing with all groups.

7.2 Public Notification

Section 95A of the RMA sets out steps to decide if an application must be publicly notified.

Step 1 – Mandatory Public Notification

- Under Section 95A(3)(a), the application has not requested public notification of the application.
- Under Section 95A(3)(b), public notification is not required under Section 95C; and
- Under Section 95A(3)(c), the application is not made jointly with an application to exchange recreation reserve land.

The application is therefore not subject to mandatory public notification under Section 95A(2).

Step 2 – Public Notification Precluded in Certain Circumstances

- Under Section 95A(5)(a), the application is not subject to a rule or national environmental standard that precludes public notification; and
- The application is not for an activity listed in Section 95A(5)(b).

The application is therefore not precluded from public notification under Section 95A(4).

Step 3 – Public Notification Required in Certain Circumstances

- Under Section 95A(8)(a), the application is not subject to a rule or national environmental standard that requires public notification; and

- Under Section 95A(8)(b), as summarized in Section 5 of this report, the activity will not have adverse effects on the environment that are more than minor.

Public notification of the application is therefore not required under Section 95A(7).

Step 4 – Special Circumstances

No special circumstances have been identified to require public notification of the application pursuant to Section 95A(9). The activity proposed is not unusual. It is a common activity to service urban areas. Notification is not anticipated to lead to information, above that provided that would benefit the decision maker.

Public Notification: Summary

Public notification is therefore not required under Section 95A.

7.3 Limited Notification

Section 95B of the RMA is limited notification of consent applications. As with s95A, s95B prescribes steps to be followed to determine if limited notification is required.

Step 1 – Certain Affected Groups and Persons

- Under Section 95B(2)(a), there are no protected customary rights groups (Section 95F) relevant to the area.
- Under Section 95B(2)(b), there are no protected customary marine title groups (Section 95G) relevant to the area.
- Under Section 95B(3)(a), the proposed activity is not located on land that is the subject of a statutory acknowledgement as it is owned by Ngati Toa. It is noted that land adjacent to the Hutt River is treated in the same manner as land that is subject to a statutory acknowledgement. In this regard, approval in principle has been provided by Taranaki Whanui verbally. Consultation is ongoing with Ngati Toa. It is noted that the land is owned by Ngati Toa.
- Under Section 95B(3)(b), there are no identified affected persons under Section 95E.

The application is therefore not subject to limited notification under Section 95B(4).

Step 2 – Limited Notification Precluded

- Under Section 95B(6)(a), the application is not subject to a rule or national environmental standard that precludes limited notification; and
- The application is not for an activity listed in Section 95B(6)(b).

The application is therefore not precluded from limited notification under Section 95B(5).

Step 3 – Certain Other Affected Persons

- The application is not for an activity listed in Section 95B(7); and
- Under Section 95B(8),no persons are affected for the following reasons:
    - The rail line is not a sensitive activity. The proposed use will not give rise to reverse sensitivity effects. All buildings are well set back from the rail corridor and maintenance of those buildings will not result in a safety risk to the tracks. It is noted that Kiwi Rail has been consulted about the rail–level crossing and this is as outlined in the land use consent for servicing (the application to be considered concurrently with this application).

- The State Highway is not a sensitive activity, and the effects of the proposal are compatible with those of the State Highway. This will not give rise to reverse sensitivity. Regarding traffic effects, the impact of these on the State Highway is considered acceptable. It is noted that a fencing agreement is registered on the Record of Title. This agreement does not impact on the area of the site Waste Management proposes to use.
- Effects on users of the Hutt River Trail are considered in the public notification section above, as the Trail is a public space area.

Overall, no person is adversely affected. Limited notification of the application is therefore not required under Section 95B(9).

Step 4 – Special Circumstances

No special circumstances have been identified to require limited notification of the application pursuant to Section 95B(10). As set out above, whilst the site has unique characteristics the activity is not particularly unusual. Limited notification to any person is not likely to provide additional information that would be of benefit to the decision maker.

Limited Notification: Summary

Limited notification is not required under Section 95B.

7.4 Summary: Notification

Based on the assessment above, there is no reason as to why this application should be subject to public or limited notification. As such, it is considered that this application can be processed without notification.

8.0 Statutory Assessment

8.1 Assessment Required

Section 104 of the RMA states the matters to be assessed:

s104 Consideration of applications

(1) When considering an application for a resource consent and any submissions received, the consent authority must, subject to Part 2, have regard to–

(a) any actual and potential effects on the environment of allowing the activity; and

(b) any relevant provisions of—

(i) a national environmental standard:

(ii) other regulations:

(iii) a national policy statement:

(iv) a New Zealand coastal policy statement:

(v) a regional policy statement or proposed regional policy statement:

(vi) a plan or proposed plan; and

(c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.

This section considers each of these matters where relevant. The status of the activity is non-complying. As such the test set out in s104D applies:

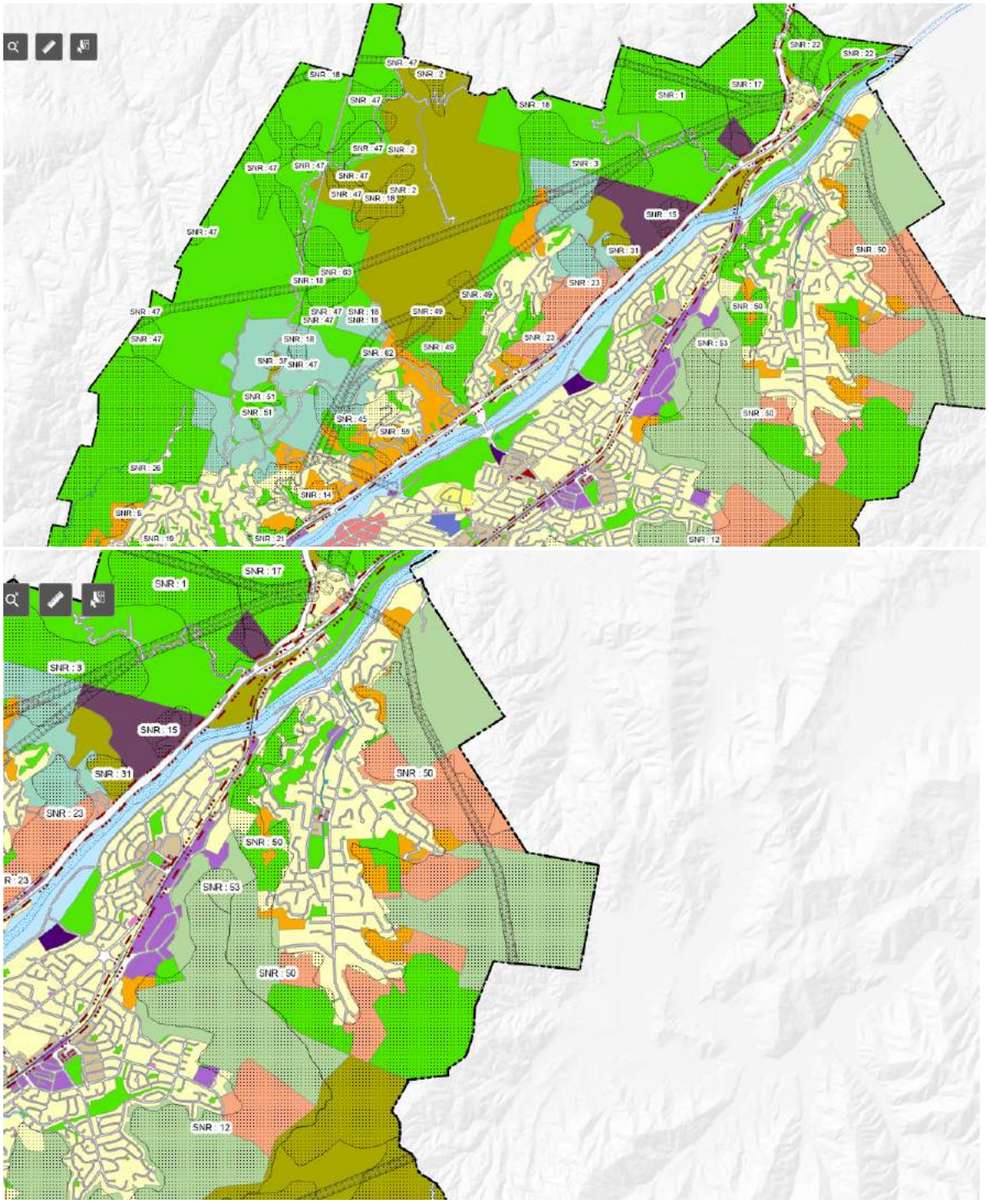
s104D Particular restrictions for non-complying activities
(1) Despite any decision made for the purpose of notification in relation to adverse effects, a consent authority may grant a resource consent for a non-complying activity only if it is satisfied that either—
(a) the adverse effects of the activity on the environment (other than any effect to which section 104(3)(a)(ii) applies) will be minor; or
(b) the application is for an activity that will not be contrary to the objectives and policies of—
(i) the relevant plan, if there is a plan but no proposed plan in respect of the activity; or
(ii) the relevant proposed plan, if there is a proposed plan but no relevant plan in respect of the activity; or
(iii) both the relevant plan and the relevant proposed plan, if there is both a plan and a proposed plan in respect of the activity.

8.2 Plan Context

The site is zoned Rural. The closest activity to what is proposed is a waste transfer station. A waste transfer station is not permitted within any zone, as it is either discretionary or non-complying. This means that in a policy context the plan does not prefer any one zone over another for this type of activity.

The site is well suited to a resource recovery park because it is large, well separated from neighbours, and bound by land uses that are not sensitive (the rail line, river, and motorway). As set out in Section 3 of this report, the zoning of the site and surrounding land is at odds with the objectives and policies for the General Rural Zone. A review of zoning maps shows that no other Rural Zoned sites in the district are isolated in the manner of this site. All other Rural Zoned sites adjoin Rural-Residential Zoned sites or other General Rural Zone parcels or Conservation Zones.

The isolation of the site means that in the context of the plan it does not, and cannot, function as part of the wider Rural Zone or area. Due to this, development of the site does not impact on the wider Rural area and the character that it has. This is further set out below with reference to relevant objectives and policies. Maps showing the zoning pattern are included below, for reference.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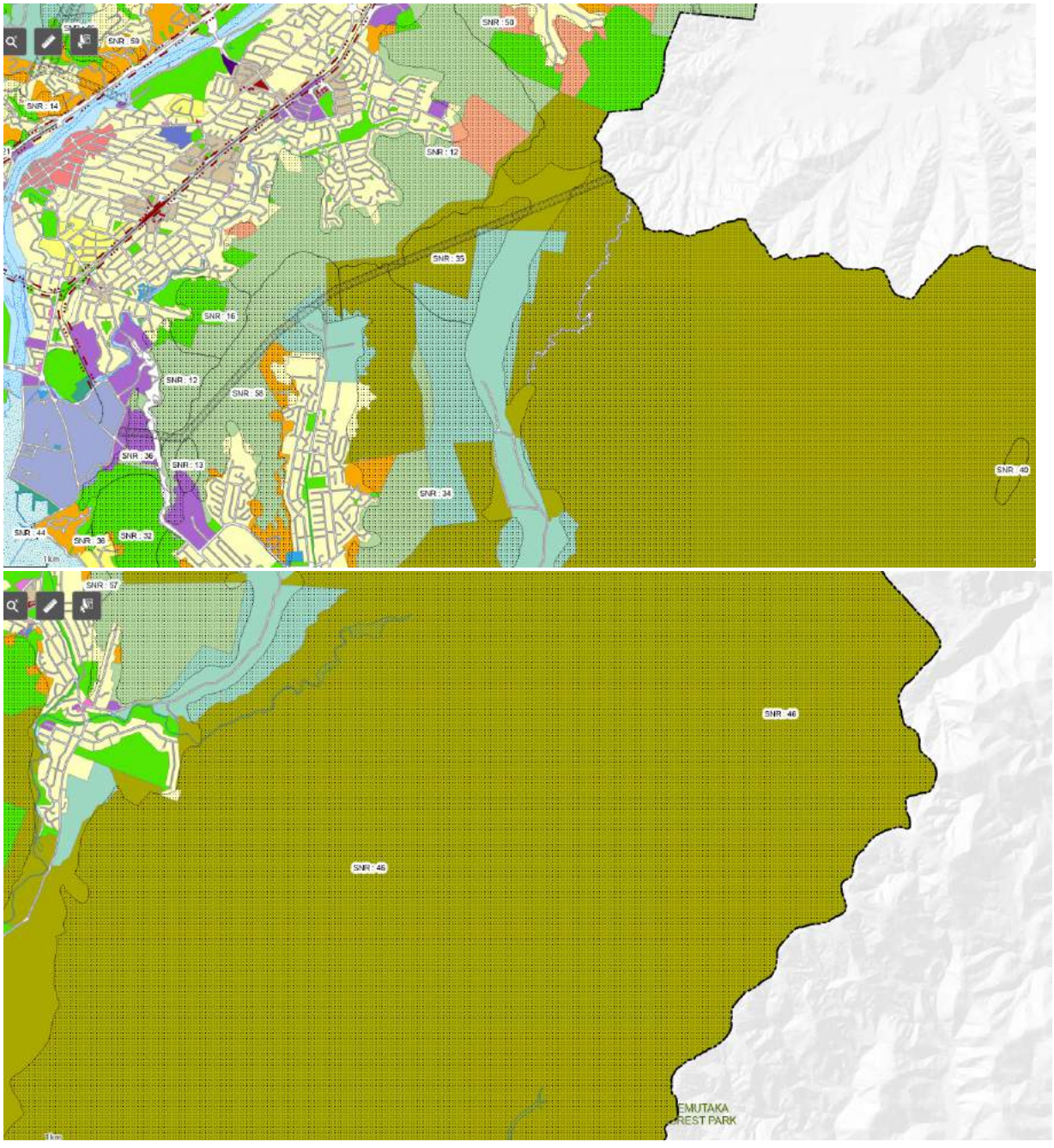
SNR : 12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SNR : 32
SNR : 57
SNR : 46
SNR : 46
EMUTAKA
REST PARK

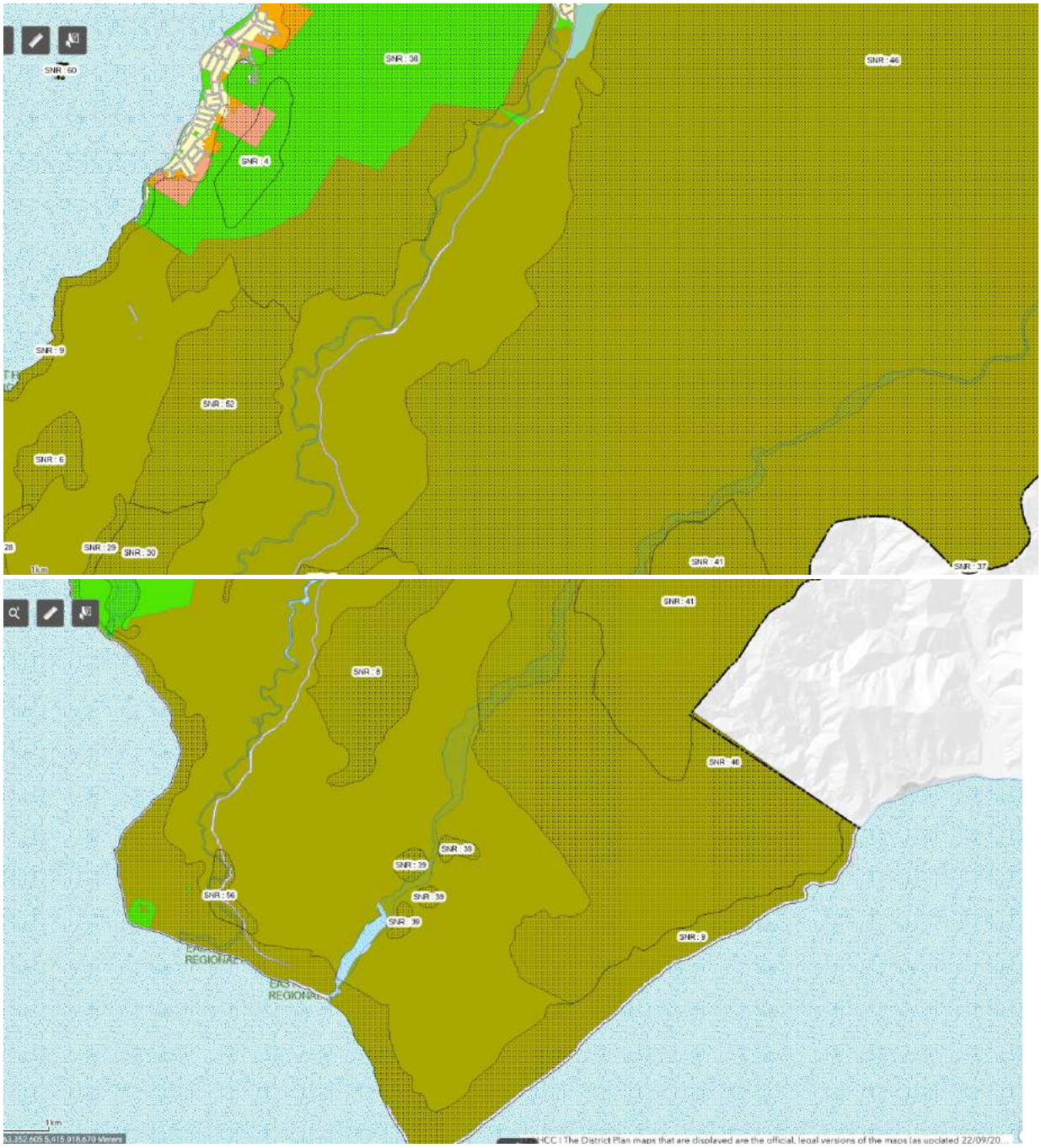


Figure 12 to 16: Location of Rural Zoned Areas within the Hutt City Territorial Area. Rural Zoned area shown in dark green. Source: HCC GIS Maps

The Growth Strategy gives some clues as to why the zone is zoned Rural, referencing the natural hazard constraints that the site has that at a high level without mitigation could make it less suitable for urban uses. The proposal has addressed these constraints and the use proposed is considered appropriate. Notwithstanding the above, the site is zoned Rural, and the assessment below includes a full assessment against objectives and policies for the General Rural Zone.

8.3 Actual and Potential Effects on the Environment

Actual and potential effects on the environment are assessed in the Assessment of Environmental Effects in Section 6 of this report. These are no more than minor.

8.4 National Instruments

8.4.1 National Policy Statement for Highly Productive Land 2022 (NPSHPL)

The NPSHPL requires regional councils to map areas of highly productive land. Whilst there are exemptions and qualifying matters in a basic sense highly productive land is any land that is zoned for rural production and has LUC Class 1 – 3 soils and that is not shown as land indicated to be urban in the future. Prior to the maps being completed and for the purpose of s104 assessments, any land that is zoned Rural and has high-class soils is considered highly productive land.[10] The NPS directs Council to avoid the establishment of activities that compromise the use of highly productive land.

In this case, the site is zoned Rural; however, consent has been granted to fill the site and soils on the site are already understood to be modified. Therefore, it does not meet the high-class soil test to be considered highly productive land. In addition, it is discussed in the Hutt City Growth Management Plan as being likely to be used for urban use in the future. The activity is therefore not contrary to the NPSHPL.

8.4.2 National Policy Statement for Freshwater Management 2020 (NPSFM)

The site is in proximity to two freshwater bodies: Dry Creek and the Hutt River. Dry Creek is currently partly invaded by weeds and pests and has been partly modified by historic activities. [11] However, as part of the granted application to undertake bulk earthworks; however, weed and pest control is to be undertaken, along with planting.

The proposal to establish a resource recovery park includes the following measures to reduce and mitigate effects on freshwater quality:

- Undertaking all activities except for parking and bin storage indoors.
- Water re-use.
- Removal of contaminants off-site or via discharge to trade waste if this is not possible.
- Stormwater treatment.
- Stormwater detention, and
- Planting.

This is a land use application and, as such, assessment of the proposal against the NPSFM should concentrate of the appropriateness of the effects the land use may have on freshwater bodies. The fundamental concept of the NPSFM is Te Mana o te Wai – refers to the fundamental importance of water and recognises the interrelationship between protecting the health of freshwater and health and well-being of the wider environment. The NPS states 'Te Mana o te Wai is about restoring the balance between the water, the wider environment and the community'[12].

The proposal, considering the measures set out above, is not inconsistent with the objectives and policies for the National Policy Statement for Freshwater 2022 including the fundamental concept of Te Mana o te Wai for the following reasons:

[10] MfE guidance – NPS Highly Productive Land 2022
[11] Tonkin and Taylor Land Use Consent Application for Fill
[12] NPSFM Section 1.3

- It is understood that Taranaki Whanui and Ngati Toa are Mana Whenua. Ngati Toa and Taranaki Whanui have both been consulted during development of the project and their input sought. They will be provided with a copy of the application upon lodgement, and it is expected that Council will consult with them in the processing of this application. Ngati Toa are also the registered landowner.
- The site is at the lower end of the catchment, bordering the Hutt River, and Dry Creek. Stormwater retention and treatment has been designed in an integrated manner.
- The proposal does not threaten any significant habitats or the extent of wetlands or rivers, nor does it have any impact on water allocation.
- The treatment of stormwater and management proposed, as well as separation of contaminated water from site and removal of contaminants off-site, is consistent with maintaining and improving water quality.

8.4.3 National Policy Statement for Urban Development 2020 (NPSUD)

The land is rural and the NPSUD is not directly applicable. The proposal, however, does contribute to meeting the purpose of the NPSUD. The Ministry for the Environment (MfE) states that the NPS-UD 2020 'recognises the national significance of:

- having well-functioning urban environments that enable all people and communities to provide for their social, economic, and cultural well-being, and for their health and safety, now and into the future
- providing sufficient development capacity to meet the different needs of people and communities[13].'

The proposal contributes to the well-functioning urban environments by providing a facility that is essential to reducing and managing waste generation from the Wellington urban area. The activity requires a large area of land to function adequately. The subject site avoids consuming large amounts of industrial land and means this capacity is available to other industrial activities that support the growth and operation of Wellington's urban areas.

8.5 Wellington Regional Policy Statement 2013

The proposal will not be inconsistent with the Wellington Regional Policy Statement for the following reasons:

- The proposal assists in business land capacity through its location and supports the sustainable growth of residential areas by providing a necessary service.
- Air quality is maintained by the activities being conducted within buildings.
- The resource recovery park will minimise waste in the region.
- The quality of freshwater is maintained by the stormwater management proposed as well as stormwater quality treatment. Risk to freshwater is minimised, as all trade waste will be removed from site for treatment.
- Vegetation that can be retained on-site has been incorporated into screening of the proposed activity.

[13] https://environment.govt.nz/acts-and-regulations/national-policy-statements/national-policy-statement-urban-development/

- No historic heritage will be impacted by the proposal and measures are in place to address any accidental find.
- The site does not contain any significant indigenous biodiversity.
- The site is not within any outstanding natural landscape and does not contain any outstanding natural features. It is not within a special amenity landscape.
- Natural hazard risk has been reduced through the design of the proposal, including layout and site levels.
- The site is not highly productive, and
- The applicant has engaged with Tangata Whenua, as set out throughout this document.

8.6 Operative District Plan

8.6.1 Consideration of Objectives and Policies

General Rural Zone

Objective 1.1.1 To maintain and enhance the open character and amenity values that are prevalent in rural areas.

Policy:

(a) To allow for those activities which are appropriate in rural areas, and which maintain and enhance the open character and amenity values of rural areas together with the intrinsic values of ecosystems.

(b) To ensure that sites are of a size that the open space character and amenity values of rural areas are maintained and enhanced.

(c) The preservation of the natural character of wetlands, lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development.

The explanation statement for Objective 1.1.1 and the policies that seek to achieve it states:
The rural areas have qualities that are different from urban and rural residential areas. There are a range of factors which contribute to the open space character and amenity values of the rural area. This includes the nature of the activities, the large sites on which they take place and the very low intensity of buildings.

As set out in Section 2 of this report, the site's character has been modified by surrounding urban activities. The site is bound by the railway, and State Highway 2. The site does not have a typical rural character. The zoning of the site is unique in that no other isolated parcels of land are zoned Rural. As shown below, the surrounding area is zoned Residential, Avalon Business, or Recreation. It is therefore an isolated piece of land surrounded by areas that have a different planned character.

Whilst the activity proposes more built development than would be expected in the Rural Zone, as the site is isolated and not part of a wider rural environment, it does not conflict with maintaining and enhancing the open character and amenity values of rural areas. The site is not part of a rural area, so the amenity of rural areas of the city are not impacted by the proposal.

The site does not have a high degree of natural character due to past land modification and filling and as set out in the Landscape Assessment Report. The proposed planting on the Greater Wellington Regional Council land that forms part of this proposal will contribute to natural character. Planting along

Dry Creek due to the bulk earthworks consent will continue to contribute to the natural character of the site, and this planting will not be impacted by the proposal.

1.1.3 Slope Stability and Soil Conservation
Objective: To ensure that adverse effects arising from activities are appropriately managed to ensure slope stability and soil conservation.
Policy:

(a) To manage the use and land characterized by steep topography and poor soils so to ensure slope stability and soil conservation.

The site is not steep. It is to be subject to bulk earthworks and the use is suitable for the underlying soils. Geotechnical input during construction and detailed design will ensure the stability of the site.

1.2.1 Minimum Requirements for Sites and Buildings
Objective: To recognize those elements within the site that determine the character, amenity values and adverse effects of flood hazards of rural areas and manage them appropriately.
Policy:

(a) To ensure the character and amenity values of rural areas are maintained and enhanced through minimum site area conditions for dwellings.
(b) To require minimum set back requirements and maximum site coverage for all buildings.
(c) To establish appropriate minimum conditions for the size and shape of sites.
(d) To manage the siting of all buildings and structures to mitigate the effects of a flood hazard on development.
(e) To discourage siting of buildings in the primary and secondary river corridors.
(f) To ensure that buildings and structures in the Primary or Secondary River Corridor of the Hutt River have no more than minor adverse effects on flood protection structures.
(g) To mitigate the effects of flood hazards on buildings and structures in the primary and secondary river corridors by managing their location, size, and scale.

The proposal utilizes a portion of the overall site. Whilst the site coverage for the zone is not met, the ratio of buildings to open space is appropriate for the character of the area the site is a part of; noting that the objective refers specifically to the character of the site itself.

A portion of the site where buildings are proposed is within the secondary river corridor. As discussed in Section 6 of this report the site will not be subject to inundation in a 1 in 440-year event. With reference to the appended flood assessment report, no proposed buildings are in an area that is subject to flooding. The proposal does not impact on any flood protection structure.

<u>Transport</u>
Objective 14A.3.1
A safe, efficient, resilient, and well-connected transport network that is integrated with land use patterns, meets local, regional, and national transport needs, facilitates, and enables urban growth and economic development, and provides for all modes of transport.

Objective 14A.3.4

Adverse effects on the safety and efficiency of the transport network from land use and development that generate high volumes of traffic are managed

Objective 14A.3.5
Adverse effects on the safety and efficiency of the transport network from on-site transport facilities (vehicle access, parking, manoeuvring, and loading facilities) are managed.

Policy 14A 4.5
Any activity that is a High Trip Generator must be assessed on a case-by-case basis. Adverse effects of High Trip Generators on the safety and efficiency of the transport network should be managed through the design and location of the land use, subdivision, or development.

Policy 14A 4.6
Vehicle access, parking, manoeuvring, and loading facilities should be designed to standards that ensure they do not compromise the safety and efficiency of the transport network.

Policy 14A.4.7
The transport network, land use, subdivision and development should provide for all transport modes.

Policy 14A 4.2
Land use, subdivision and development should not cause significant adverse effects on the connectivity, accessibility, and safety of the transport network, and, where appropriate, should:

- *seek to improve connectivity within and between communities; and*
- *enable walking, cycling and access to public transport.*

Comment:
The proposal is consistent with these objectives and policies for the following reasons:

- All modes are provided for, including walking and cycling. Electric vehicle charging is provided.
- With reference to the traffic assessment, the road network will be able to cater for the number of vehicles proposed, subject to the upgrades proposed.
- No issues have been identified regarding traffic safety which are not addressed by the proposed upgrades.
- Internal circulation and parking provision is sufficient.

Natural Hazards
14H 1.1.1 Objective:
To avoid or reduce the risk to people and their property from natural hazards associated with seismic action, landslides, flooding, and coastal hazards.
Policy:

(a) That the area at risk from fault rupture causing permanent ground deformation along the Wellington Fault be managed by the Wellington Fault Special Study Area to address the effects of subdivision and development on the safety of people and their property.
(b) That suitable engineering and emergency management measures be adopted to safeguard people and their property from liquefaction, ground shaking and tsunami hazards.

(c) *That where areas susceptible to landslide have been identified, appropriate conditions of compliance will be provided to mitigate the adverse effects of subdivision and development on the vulnerability of people and their property.*

(d) *That suitable engineering, emergency management and land use control measures be adopted to reduce the vulnerability of people and their property to flood hazards.*

(e) *That suitable engineering, emergency management and land use control measures be adopted to reduce vulnerability of development along the coast.*

Comment:

As set out in Section 6.8.1 of this report, the layout of the site has been designed so that buildings avoid the fault line hazard area and no-build area. The flood hazards are reduced through site levels and proposed floor levels of the buildings.

Earthworks

14I 1.4 Objective:

To ensure earthworks in the Primary or Secondary River Corridor of the Hutt River do not affect adversely flood protection structures.

Policy

To ensure that earthworks in the Primary or Secondary River Corridor have no more than minor adverse effects on flood protection structures.

Comment:

Due to the bulk earthworks, the level of the site is outside the 1 in 440-year flood plain. The earthworks proposed as part of this application are for building foundations and leveling only. This is minor and will not affect any flood protection structure.

8.6.2 Conclusion: s104D (RMA)

The proposal satisfies both parts of the 'gateway' test. As set out in Section 6 of this report, effects of the proposal are no more than minor. This report concludes that the proposal is not inconsistent with the relevant objectives and policies of the planning framework.

8.7 Other Matters

Section 104(1)(c) requires a consent authority to have regard to any other matter it considers relevant and necessary to determine an application for a resource consent. In this case, the activity is non-complying, and the integrity of the plan may be considered as an 'other' matter as may Iwi Environmental Management Plans.

8.7.1 Integrity of the City of Hutt District Plan

As set out above, the site is distinct from other rural sites and for this reason the proposal is unlikely to compromise the integrity of the Plan.

8.7.2 He Kākano - An Introduction to the Ngati Toa Iwi Environmental Management Plan

He Kākano sets the context for a future Iwi Environmental Management Plan for Ngati Toa. The objective of Ngati Toa that enables environmental leadership is *Te Ao Turoa: Nurturing a resilient environment to sustain future generations.*

The document states, "our plan for the future is built on the footprints of the past" and this means;

- Reconnecting with the ancestral landscape – the original activities, traditions, tikanga, values associated with places.
- Confronting errors of the past – addressing harmful historical activities that have compromised te taiao.
- Planning for the future to enable the reconnect with the ancestral landscape and confront challenges such as climate change.[14]

The document also describes what an Iwi Environmental Plan is and questions and issues the Plan will seek to address.

As set out above, Ngati Toa is the registered landowner and consultation with them has been ongoing. Elements are incorporated into the development to lessen the environmental footprint of the activity, both through the mitigation measures proposed and through the features of the site; EV Chargers, facilities that encourage waste reduction, solar panels, and water management.

8.8 Part II RMA

The planning instruments referred to above are generally comprehensive in the way that they give effect to Part II matters under the RMA, although the Lower Hutt District Plan is dated, particularly as it does not directly envisage resource recovery parks. Section 8B.2.3.1 of the District Plan also states that Part II matters will be specifically considered in the assessment of applications. For this reason, an assessment against Part II of the RMA is set out below.

8.8.1 Section 5

Regarding s5, the proposal provides an essential waste management facility to meet the need of the community to provide for social and economic wellbeing and health and safety. The project effectively sustains the urban land resource and contributes to sustainability in a wider sense by facilitating waste reduction and implementation of the waste management hierarchy. The proposal does not impact on safeguarding the life-supporting capacity of air, water, soil, or ecosystems. It has incorporated several measures, these of which have been discussed throughout this report; to avoid, remedy, or mitigate adverse effects. Overall, the proposal is consistent with the purpose of the RMA that is to promote the sustainable management of natural and physical resources.

8.8.2 Section 6

Under s6, the proposal recognises and provides for relevant matters of national importance. Specifically:

[14] He Kākano, Page 3 as accessed on 25 January 2023, https://static1.squarespace.com/static/61a403b442b8840d9ed2143a/t/61e6755137970d62dea7aaba/1642493343646/He+Kakano.pdf

- Planting proposed maintains natural character of the area in general, taking into account the context of the site. The proposal is not an inappropriate use or development (s6(a)).
- Public access to the Hutt River is maintained and not impacted by the proposal (s6(d)).
- Ngati Toa and Taranaki Whanui have been consulted during the preparation of the proposal. The site is ancestral land. No waahi tapu items are identified in relevant planning documents, nor have any been identified by Mana Whenua during consultation to date (s6(e)).
- The proposal has been designed to reduce the risk from natural hazards and the remaining risk is not significant. Specifically, management of natural hazards is achieved by locating all buildings above the 1 in 440-year flood level and avoiding any building within the identified no-build area associated with the Wellington Faultline (s6(h)).

8.8.3 Section 7

Under s7, the proposal has regard to other matters. Specifically:

- The proposal includes measures to reduce and mitigates effects on the environment and this has regard to kaitaikitanga, the ethic of stewardship, and the maintenance and enhancement of the quality of the environment (s7(a), 7(aa), and 7(f))
- The site utilises a piece of land that would be unsuitable for many other purposes efficiently (s7(b)).
- Urban land is a natural and physical resource that is finite in Wellington, due to topographical constraints. The proposal has regard to the finite nature of industrial land by locating on what is effectively a greenfield site (s7(g)).
- Due to separation distances from sensitive activities and mitigation incorporated into the proposal, amenity values are maintained (s7(c)).

8.8.4 Section 8

The proposal takes into account the principles of the Treaty of Waitangi. As discussed throughout this report, the consultation has been undertaken with both Taranaki Whanui and Ngati Toa. . No concerns have been identified by Ngati Toa to date, with further comment expected during the processing of this consent. Through consultation, the proposal has taken into account the principles of the Treaty of Waitangi.

9.0 Conclusion

Waste Management NZ propose a modern, fit-for-purpose resource recovery park to be accessed from Benmore Crescent, Manor Park, referred to as Te Rangihaetea. Waste Management has been looking for a site to establish a resource recovery park for over 15 years. The subject site is well suited for the proposal, as it is a large vacant site that is close to the urban area and avoids the consumption of existing urban-zoned land. The proposal incorporates several environmental initiatives.

The site is too small to be used for rural production purposes and has been modified over successive years. It is not overly suitable for residential use, given the land sits over the Main Wellington Faultline, is within the buffer corridor for both the Rail Line and State Highway, and is in proximity to the Hutt River Secondary River Corridor. The resource recovery park, however, can be designed to avoid the no-build line and reduces risk by proposing non-habitable activities. By reducing the effects of natural

hazards, the proposal can efficiently use a piece of land that is central to the urban area of Wellington and may otherwise remain underutilised. Urban land is an important resource that is coming under increasing pressure and is decreasing in supply, as recognised by national policy and direction. It also utilises the site in a way generally consistent with the Hutt City Growth Strategy.

The proposed resource recovery park will not only manage waste but will actively contribute to reducing waste in the area it serves. It includes activities such as the repair shed and second-hand goods store that encourage re-use and upcycling. Material recovery is also proposed. The facility will directly contribute to achieving objectives of the Waste Minimisation Act 2008 and reduce overall effects associated with waste generation in the Wellington Region.

The proposal has been carefully designed to reduce and mitigate effects. Several mitigation measures are included in the proposal: including comprehensive water re-use, removal of any trade waste off-site for treatment, stormwater treatment and retention, and planting. Hours of operation control amenity effects that, due to the location of the site and design of the proposal, are minor. The buildings will be visible from some viewpoints. To reduce visual effects planting and use of recessive colours are proposed. The roads that will serve the park have been designed by an appropriately qualified expert who has determined that traffic effects are acceptable. As stated above, natural hazards are well managed through the proposal's design. Overall effects are no more than minor.

The proposal maintains consistency with the objectives and policies of the planning framework, including national policy direction. It does not compromise highly productive land, will ensure the capacity of land available for urban activities and manages effects on freshwater. Mana Whenua have been consulted during the development of the proposal and consultation is ongoing. Environmental effects have been managed as set out above and risk from natural hazards is reduced. The proposal provides a facility that will meet the needs of both current and future generations

The proposal adequately gives effect to matters of national significance and takes into account matters of importance, stated in Part II of the RMA. The proposal has considered the principles of Te Tiriti o Waitangi and achieves the sustainable management of resources both by the nature of the activity proposed and through management of effects on site.

Overall, the proposal satisfies both parts of the s104D test and consent is warranted subject to appropriate conditions.

10.0 Limitations

We draw your attention to the following notes and limitations on our liability:

- This report has been prepared based on information supplied by our client; Waste Management (NZ) Ltd, and their expert advisors.
- In the event of any inconsistency between the plans submitted as part of this application and this report, the plans take precedence including calculations and dimensions provided.

- This report and application are based on planning provisions dated at the time of writing. Planning provisions may change over time. If there is delay in lodging this application, part of the application may become inaccurate.
- We have taken care to identify all reasons for consent. Our assessment is based on the appended plans and information and is therefore sufficient to address any reasons for consent that may not have been identified or that have arisen because of any delay between the completion of this report and it being lodged.
- This report has been prepared for Waste Management (NZ) Ltd our client, and their advisors for the purpose of applying for resource consent. We do not accept liability for use of this report for any other purpose or by any other party.

Appendix 1: Schedule 4 Assessment

WASTE MANAGEMENT (NZ) LTD – SCHEDULE 4 ASSESSMENT

SCHEDULE CLAUSE	REQUIREMENT	LOCATION IN AEE REPORT
(2) Information required in all applications	**(1)** An application for a resource consent for an activity (the activity) must include the following: (a) a description of the activity:	Sections 1.1 and 1.2, p. 7 Section 4 (Sections 4.1 to 4.3), p. 17 to 22
	(b) a description of the site at which the activity is to occur:	Section 2 (Sections 2.1 to 2.4), p. 8 to 14
	(c) the full name and address of each owner or occupier of the site:	Table 1, Section 1.1, p. 6
	(d) a description of any other activities that are part of the proposal to which the application relates:	Table 1, Section 1.1, p. 8
	(e) a description of any other resource consents required for the proposal to which the application relates:	Table 1, Section 1.1, p. 8
	(f) an assessment of the activity against the matters set out in Part 2:	Section 8.9, p. 44 to 45
	(g) an assessment of the activity against any relevant provisions of a document referred to in section 104(1)(b).	Section 8.4 (Sections 8.4.1 to 8.4.3), p. 38 to 39 Section 8.5, p. 39 to 40 Section 8.6, p. 40 to 43
	(2) The assessment under subclause (1)(g) must include an assessment of the activity against— (a) any relevant objectives, policies, or rules in a document; and	Section 8.6, p. 40 to 43
	(b) any relevant requirements, conditions, or permissions in any rules in a document; and	Section 5, p. 22
	(c) any other relevant requirements in a document (for example, in a national environmental standard or other regulations).	Section 8.4 (Sections 8.4.1 to 8.4.3), p. 38 to 39
	(3) An application must also include an assessment of the activity's effects on the environment that— (a) includes the information required by clause 6; and (b) addresses the matters specified in clause 7; and (c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.	Section 6 (6.1 to 6.14), p. 22 to 31

SCHEDULE CLAUSE	REQUIREMENT	LOCATION IN AEE REPORT
(6) Information required in assessment of environmental effects	**(1)** An assessment of the activity's effects on the environment must include the following information: (a) if it is likely that the activity will result in any significant adverse effect on the environment, a description of any possible alternative locations or methods for undertaking the activity: (b) an assessment of the actual or potential effect on the environment of the activity: (c) if the activity includes the use of hazardous installations, an assessment of any risks to the environment that are likely to arise from such use: (d) if the activity includes the discharge of any contaminant, a description of— (i) the nature of the discharge and the sensitivity of the receiving environment to adverse effects; and (ii) any possible alternative methods of discharge, including discharge into any other receiving environment: (e) a description of the mitigation measures (including safeguards and contingency plans where relevant) to be undertaken to help prevent or reduce the actual or potential effect: (f) identification of the persons affected by the activity, any consultation undertaken, and any response to the views of any person consulted: (g) if the scale and significance of the activity's effects are such that monitoring is required, a description of how and by whom the effects will be monitored if the activity is approved: (h) if the activity will, or is likely to, have adverse effects that are more than minor on the exercise of a protected customary right, a description of possible alternative locations or methods for the exercise of the activity (unless written approval for the activity is given by the protected customary rights group).	Section 6 (6.1 to 6.14), p. 22 to 31 Section 7 (7.1 to 7.4), p. 31 to 34 Section 8.3, p. 37 to 38

SCHEDULE CLAUSE	REQUIREMENT	LOCATION IN AEE REPORT
	(2) A requirement to include information in the assessment of environmental effects is subject to the provisions of any policy statement or plan.	
	(3) To avoid doubt, subclause (1)(f) obliges an applicant to report as to the persons identified as being affected by the proposal, but does not— (a) oblige the applicant to consult any person; or (b) create any ground for expecting that the applicant will consult any person.	
(7) Matters that must be addressed by assessment of environmental effects	**(1)** An assessment of the activity's effects on the environment must address the following matters: (a) any effect on those in the neighbourhood and, where relevant, the wider community, including any social, economic, or cultural effects: (b) any physical effect on the locality, including any landscape and visual effects: (c) any effect on ecosystems, including effects on plants or animals and any physical disturbance of habitats in the vicinity: (d) any effect on natural and physical resources having aesthetic, recreational, scientific, historical, spiritual, or cultural value, or other special value, for present or future generations: (e) any discharge of contaminants into the environment, including any unreasonable emission of noise, and options for the treatment and disposal of contaminants: (f) any risk to the neighbourhood, the wider community, or the environment through natural hazards or hazardous installations.	Section 6 (6.1 to 6.14), p. 22 to 31 Section 7 (7.1 to 7.4), p. 31 to 34 Section 8.3, p. 37 to 38
	(2) The requirement to address a matter in the assessment of environmental effects is subject to the provisions of any policy statement or plan.	

Appendix 1: A list of the relevant Schedule 4 information requirements under the Resource Management Act 1991 (RMA) in relation to the Lower Hutt Council District Plan and their location within the AEE report.

Appendix 2: Record of Title Documentation

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Guaranteed Search Copy issued under Section 60 of the Land Transfer Act 2017

R.W. Muir
Registrar-General of Land

Identifier **738223**

Part-Cancelled

Land Registration District **Wellington**

Date Issued 14 April 2016

Prior References
737900

Estate	Fee Simple
Area	13.5192 hectares more or less
Legal Description	Section 1, 6 Survey Office Plan 493901
Registered Owners	

Te Runanga O Toa Rangatira Incorporated

Interests

Subject to Part IVA Conservation Act 1987

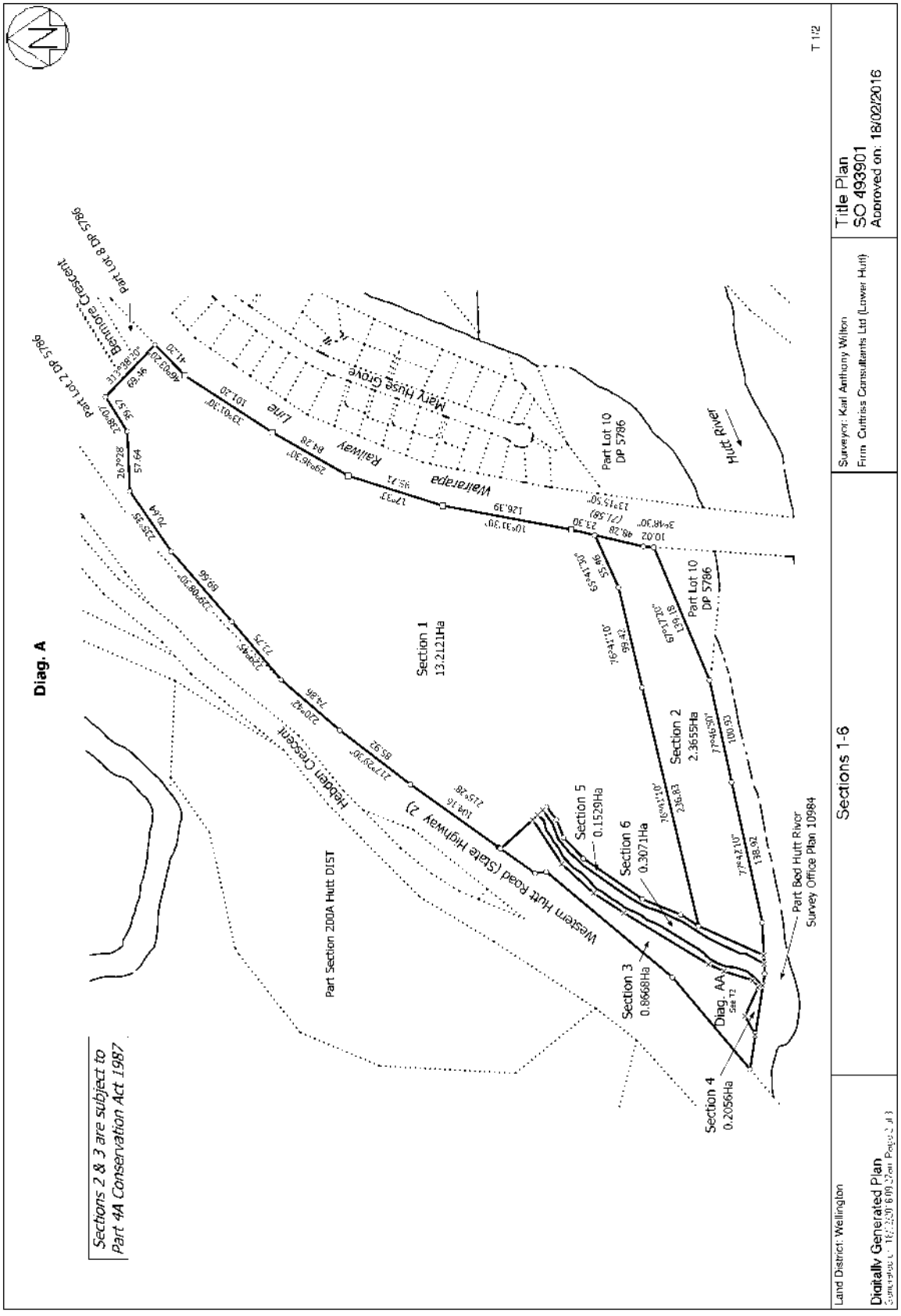
Subject to Section 11 Crown Minerals Act 1991

B645270.1 Gazette Notice (1997/1066) declaring that portion of State Highway 2 adjoining hereto to be a Limited Access Road - 8.1.1998 at 1.52 pm

11032732.1 Gazette Notice (2018- In 656) declaring Section 6 SO 493901 to be set apart for Local Purpose Reserve(Soil conservation and river control purposes) and shall remain vested in Her Majesty the Queen - 16.2.2018 at 11:49 am (CIR 826818 issued)

Fencing Covenant in Transfer 11676592.2 - 5.3.2020 at 2:08 pm

11676592.3 Encumbrance to New Zealand Transport Agency - 5.3.2020 at 2:08 pm


Title Plan
SO 493901
Approved on 18/02/2016
Surveyor: Karl Anthony Wilton
Firm: Cuttriss Consultants Ltd (Lower Hutt)
Land District: Wellington
Digitally Generated Plan
Sections 1-6
T 1:2
Diag. A
Sections 2 & 3 are subject to Part 4A Conservation Act 1987
Section 1
13.2121Ha
Section 2
2.3655Ha
Section 3
0.8668Ha
Section 4
0.2056Ha
Section 5
0.1529Ha
Section 6
0.3071Ha
Diag. AA
Part Section 200A Hutt DIST
Part Bed Hutt River
Survey Office Plan 10984
Part Lot 10
DP 5786
Part Lot 2 DP 5786
Part Lot 8 DP 5786
Hebden Crescent
Western Hutt Road (State Highway 2)
Waiwhetu Stream
Railway Line
Mary Huse Grove
Hutt River
Benmore Crescent

View Instrument Details

Instrument No	11032732.1
Status	Registered
Date & Time Lodged	16 February 2018 11:49
Lodged By	Douglas, Bruce Robert
Instrument Type	Gazette Notice/Order in Council/Proclamation

Affected Computer Registers	Land District
738223	Wellington

Annexure Schedule: Contains 1 Page.

Signature

Signed by Joanna Dorothy Cassidy as Crown or Territorial Authority Representative on 16/02/2018 10:50 AM

*** **End of Report** ***

NEW ZEALAND GAZETTE

Land Set Apart for Local Purpose Reserve (Soil Conservation and River Control Purposes)—State Highway 2, Manor Park, Hutt City

Pursuant to section 52(1)(d) of the Public Works Act 1981, and to a delegation from the Minister for Land Information Kavya Shrivastava, Land Information New Zealand, declares the land described in the Schedule to this notice to be set apart for local purpose reserve (soil conservation and river control purpose), subject to section 23 of the Reserves Act 1977 and shall remain vested in the Crown on the date of publication hereof in the *New Zealand Gazette*.

Wellington Land District—Hutt City

Schedule

Land Set Apart for Local Purpose Reserve

Area m^2	Description
3071	Part Section 1 SO 36533, shown as Section 6 SO 493901, subject to Certificate 9861836.1 (Part Computer Freehold Register 738223).

Dated at Wellington this 9th day of February 2018.

KAVYA SHRIVASTAVA, for the Minister for Land Information.

(LINZ CPC/2012/16665)

2018-ln656

12-02-2018 11:54

View Instrument Details

Instrument Type	Transfer
Instrument No	11676592.2
Status	Registered
Date & Time Lodged	05 March 2020 14:08
Lodged By	Bevan, Sophie Mia Tui

Affected Records of Title	**Land District**
738223	Wellington

Transferors

Her Majesty the Queen

Transferees

Te Runanga O Toa Rangatira Incorporated

Clauses, Conditions or Intent

The transferee shall be bound by a fencing covenant as defined in Section 2 of the Fencing Act 1978 in favour of the transferor
738223 is being transferred pursuant to Section 42 of the Public Works Act 1981 subject to:
1. Part IVA of the Conservation Act 1987 2. Section 11 of the Crown Minerals Act 1991

Transferor Certifications

I certify that I have the authority to act for the Transferor and that the party has the legal capacity to authorise me to lodge this instrument ☑

I certify that I have taken reasonable steps to confirm the identity of the person who gave me authority to lodge this instrument ☑

I certify that any statutory provisions specified by the Registrar for this class of instrument have been complied with or do not apply ☑

I certify that I hold evidence showing the truth of the certifications I have given and will retain that evidence for the prescribed period ☑

Signature

Signed by Carolyn Anne Faulknor as Transferor Representative on 05/03/2020 09:22 AM

Transferee Certifications

I certify that I have the authority to act for the Transferee and that the party has the legal capacity to authorise me to lodge this instrument ☑

I certify that I have taken reasonable steps to confirm the identity of the person who gave me authority to lodge this instrument ☑

I certify that any statutory provisions specified by the Registrar for this class of instrument have been complied with or do not apply ☑

I certify that I hold evidence showing the truth of the certifications I have given and will retain that evidence for the prescribed period ☑

Signature

Signed by William David Bevan as Transferee Representative on 04/03/2020 01:44 PM

View Instrument Details

***** End of Report *****

View Instrument Details

Instrument No	11676592.3
Status	Registered
Date & Time Lodged	05 March 2020 14:08
Lodged By	Bevan, Sophie Mia Tui
Instrument Type	Encumbrance

Affected Records of Title	Land District
738223	Wellington

Annexure Schedule Contains 7 Pages.

Encumbrancer Certifications

I certify that I have the authority to act for the Encumbrancer and that the party has the legal capacity to authorise me to lodge this instrument ☑

I certify that I have taken reasonable steps to confirm the identity of the person who gave me authority to lodge this instrument ☑

I certify that any statutory provisions specified by the Registrar for this class of instrument have been complied with or do not apply ☑

I certify that I hold evidence showing the truth of the certifications I have given and will retain that evidence for the prescribed period ☑

Signature

Signed by William David Bevan as Encumbrancer Representative on 04/03/2020 01:44 PM

Encumbrancee Certifications

I certify that I have the authority to act for the Encumbrancee and that the party has the legal capacity to authorise me to lodge this instrument ☑

I certify that I have taken reasonable steps to confirm the identity of the person who gave me authority to lodge this instrument ☑

I certify that any statutory provisions specified by the Registrar for this class of instrument have been complied with or do not apply ☑

I certify that I hold evidence showing the truth of the certifications I have given and will retain that evidence for the prescribed period ☑

Signature

Signed by Carolyn Anne Faulknor as Encumbrancee Representative on 05/03/2020 09:22 AM

***** End of Report *****

Form 18

Encumbrance Instrument

(Section 100 Land Transfer Act 2017)

Land registration district

Wellington

Record of Title (unique identifier)	**All/part**	**Area/Description of part**
738223	All	

Encumbrancer *Surname(s) must be underlined*

TE RUNANGA O TOA RANGATIRA INCORPORATED

Encumbrancee

NEW ZEALAND TRANSPORT AGENCY

Estate or interest to be encumbered *Insert e.g. Fee simple; Leasehold in Lease No. etc.*

Fee simple

Encumbrance Memorandum Number

Not applicable

Nature of security *State whether sum of money, annuity or rentcharge and amount*

Rent charge of **TEN DOLLARS ($10.00)** per annum, and such other sums of money as are payable by the Encumbrancer to the Encumbrancee pursuant to this Encumbrance Instrument.

Encumbrance *Delete words in [ ], as appropriate*

The **Encumbrancer encumbers for the benefit of the Encumbrancee** the land in the above record(s) of title with the above sum of money, annuity or rentcharge, to be raised and paid in accordance with the terms set out in the Annexure Schedule **and** so as to incorporate in this Encumbrance the terms and other provisions set out in the Annexure Schedule for the better securing to the Encumbrancee the payment(s) secured by this Encumbrance, and compliance by the Encumbrancer with the terms of this encumbrance.

Continue in additional Annexure Schedule, if required

Terms

1 Length of term **999 years**

2 Payment date(s) **See below**

3 Rate(s) of interest **Nil**

4 Event(s) in which the sum, annuity or rentcharge becomes payable **See below**

5 Event(s) in which the sum, annuity, or rentcharge ceases to be payable **See below**

Covenants and conditions *Continue in Annexure Schedule(s), if required*

Payment date(s) and event(s) in which the sum, annuity, or rentcharge becomes payable:

(a) In respect of the rent charge, 1 January in each year; and

(b) In respect of other sums of money, ten working days after written demand is made by the Encumbrancee to the Encumbrancer.

Continued on the attached annexure schedule.

Modification of statutory provisions *Continue in Annexure Schedule(s), if required*

Sections 23, 203-205, 289-290 and 301-302 of the Property Law Act 2007 and Section 12 of the Contracts and Commercial Law Act 2017 shall apply to this Encumbrance Instrument but otherwise (and without prejudice to the Encumbrancee's rights of action at common law as a rent-chargee) the Encumbrancee shall not be entitled to any of the powers and remedies given to encumbrancees by the Land Transfer Act 2017 and the Encumbrancee and its successors and assigns shall not be entitled to any of the powers and remedies given to mortgagees under the Land Transfer Act 2017 or the Property Law Act 2007.

Continue in additional Annexure Schedule, if required

BACKGROUND

A **TE RUNANGA O TOA RANGATIRA INCORPORATED** (together with their successors, assignees, tenants, lessees and persons under its control) (***Encumbrancer***) are registered as proprietor of an estate in fee simple in all that parcel of land described on the front page of this Encumbrance Instrument (***Land***).

B The Land is in the vicinity of State Highway 2 (***State Highway***).

C Under sections 61(1) and 80(1) of the Government Roading Powers Act 1989, the Encumbrancee has sole powers of control for all purposes of all State highways and motorways.

D For valuable consideration the Encumbrancer has agreed to encumber the Land for the benefit of the Encumbrancee with the security specified on this front page of this Encumbrance Instrument, and to covenant with the Encumbrancee to secure compliance by the Encumbrancer with the agreements set out in this Encumbrance Instrument.

OPERATIVE PROVISIONS

1 If, on the due date for payment of the rent charge imposed under this Encumbrance Instrument, the Encumbrancer has fully complied with all of the obligations imposed pursuant to this Encumbrance Instrument, then the rent charge payable on that day shall not be required to be paid by the Encumbrancer.

2 The Encumbrancer acknowledges that the covenants in this Encumbrance Instrument are of a permanent nature, and the Encumbrancer shall not be entitled to a discharge of the Encumbrance Instrument during the term, whether by payment of the total security or otherwise.

3 The Encumbrancer covenants with the Encumbrancee that the Encumbrancer will ensure that:

3.1 (a) any new buildings or alterations to existing buildings containing noise sensitive activities, in or partly within 40 metres from the State Highway edgeline must be designed, constructed and maintained to achieve road-traffic vibration levels complying with class C of NS 8176E:2005;

(b) any new buildings or alterations to existing buildings containing noise sensitive activities, in or partly within 100 metres from the State Highway edgeline must be designed, constructed and maintained to achieve the indoor design noise levels from road-traffic set out in the table contained in the Schedule to this Encumbrance Instrument;

(c) if windows must be closed to achieve the design noise levels set out in the table contained in the Schedule to this Encumbrance Instrument, the building must be designed, constructed and maintained with a ventilation and cooling system. For habitable spaces a ventilation cooling system must achieve the following:

i. ventilation must be provided to meet clause G4 of the New Zealand Building Code. At the same time, the sound of the system must not exceed 30 dB LAeq(30s) when measured 1 m away from any grille or diffuser;

ii. the occupant must be able to control the ventilation rate in increments up to a high air flow setting that provides at least 6 air changes per hour. At the same time, the sound of the system must not exceed 35 dB LAeq(30s) when measured 1 m away from any grille or diffuser; and

Continue in additional Annexure Schedule, if required

iii. the system must provide cooling that is controllable by the occupant and can maintain the temperature at no greater than 25°C. At the same time, the sound of the system must not exceed 35 dB LAeq(30s) when measured 1 m away from any grille or diffuser;

(d) a design report prepared by a suitably qualified and experienced acoustics specialist must be submitted to the Encumbrancee demonstrating noise and vibration compliance prior to the construction or alteration of any building containing a noise sensitive activity in or partly in the State Highway buffer area or effects area. The design must take into account the future permitted use of the state highway; for existing roads this is achieved by the addition of 3 dB to existing measured or predicted noise levels.

3.2 all lighting on the Land must be designed, installed and maintained so that it is shielded from or directed away from the State Highway, to ensure that artificial lighting does not result in illumination or glare on transport corridors which may dazzle or distract transport corridor users; and

3.3 any signage on the Land that faces or is directed at traffic on the State Highway, or is otherwise visible to traffic on the State Highway, requires prior written approval of the Encumbrancee. This is to ensure that inappropriate signage along the State Highway does not distract transport corridor users.

4 The Encumbrancer acknowledges and accepts that the Land is capable of being adversely affected by effects (including without limitation noise, vibration, dust, emissions, visual, landscape or amenity effects) (***Effects***) arising from the construction, operation, upgrading and maintenance of the State Highway (**State Highway *Activities***), whether such Effects arise during or after such State Highway Activities, and accordingly the Encumbrancer, in consideration of having received valuable consideration, agrees:

4.1 not to object to, hinder, or otherwise obstruct the grant, confirmation or alteration pursuant to the Resource Management Act 1991 (***RMA***) of any authorisations under the RMA which in any way relate to the State Highway Activities and to sign written approvals in relation to any such authorisation if requested to by the Encumbrancee;

4.2 not to do, permit to be done, or omit to do, any act, matter or thing where that act, matter, thing or omission is intended to restrict, or has the effect of restricting, the State Highway Activities in any way whatsoever, including taking any civil action and/or any enforcement proceedings pursuant to the RMA or any other statute or common law, whether for nuisance, damage to Land, negligence, or interference with Land or otherwise, but only where such act, matter or thing relates to any such Effects;

Continue in additional Annexure Schedule, if required

4.3 not to claim any compensation in relation to any such Effects arising from State Highway Activities;

4.4 not to fund, encourage or otherwise be involved in, any act, matter or thing that if carried out by the Encumbrancer itself would breach paragraphs 4.1 to 4.3 above;

4.5 to provide a copy of this Encumbrance to all tenants, lessees, and holders of unregistered interests in the Land (each a ***third party***) who acquire rights in the Land while the Encumbrancer is the registered proprietor of the Land:

(a) where the Encumbrancer grants the rights in the Land to that third party, prior to the Encumbrancer doing so; or

(b) in all other cases, as soon as practicable after the Encumbrancer becomes aware of that third party acquiring any rights in the Land.

5 This Encumbrance Instrument shall be binding on all transferees, tenants (to the extent permitted by law), lessees, mortgagees, chargeholders and their respective successors in title and assigns of any estate or interest in the Land.

6 Where this Encumbrance Instrument binds or benefits a party, it shall bind or benefit that party jointly and severally.

7 The Encumbrancer covenants with the Encumbrancee:

7.1 to pay all legal costs and disbursements in the preparation, execution, registration, enforcement and any ultimate release of this Encumbrance Instrument, in respect of any consents sought by the Encumbrancer from the Encumbrancee to the registration of any instrument, and in respect of the performance and observance by the Encumbrancer of this Encumbrance Instrument including legal costs on a solicitor/client basis; and

7.2 to otherwise indemnify the Encumbrancee against any claims, loss and expense of whatever kind incurred by the Encumbrancee as a consequence of the Encumbrancer failing to comply with this Encumbrance Instrument **provided always** that this clause 7.2 shall not apply during any period that the Encumbrancer is the Crown as defined in section 2(1) of the Public Finance Act 1989.

8 The Encumbrancer will only be liable for breaches actually committed by the Encumbrancer itself, and not by any successor or other party, unless those breaches arise wholly or partly due to a breach by the Encumbrancer of clause 4.5.

9 No delay or failure by the Encumbrancee to enforce performance of any of the covenants set out in this Encumbrance Instrument and no indulgence granted to the Encumbrancer by the Encumbrancee shall prejudice the rights of the Encumbrancee to enforce any of the covenants or provisions of the Encumbrance Instrument.

Continue in additional Annexure Schedule, if required

10 In this Encumbrance Instrument a reference to legislation or to a provision of legislation includes a modification or re-enactment of it, a legislative provision substituted for it, and a regulation or statutory instrument issued under it.

11 In this Encumbrance Instrument, ***working day*** means (a) in relation to any time period specified under the Property Law Act 2007, has the meaning given in that Act, or (b) in all other cases, means any day that is not a Saturday, Sunday, day between 23 December in one year to 10 January in the next year (both days inclusive) or statutory holiday in the area where the Land is located.

12 If at any time any part or provision of this Encumbrance Instrument is or becomes invalid, void, illegal or unenforceable in any respect whatsoever, then:

12.1 that part or provision shall be severed from this Encumbrance Instrument;

12.2 such invalidity and severing shall not in any way affect or impair the validity, legality and enforceability of any other part or provision of this Encumbrance Instrument; and

12.3 the parties shall enter into appropriate substitute instrument(s) to give full and proper effect to the agreements and understandings in this Encumbrance Instrument.

13 The Encumbrancer:

13.1 acknowledges that this Encumbrance Instrument:

(a) has been granted for valuable consideration received, in full compensation for the grant of this Encumbrance Instrument; and

(b) is intended to charge the Land and bind the Encumbrancer (and successors) to perform the Encumbrancer's obligations for the period of time set out in this Encumbrance Instrument; and

13.2 therefore covenants with the Encumbrancee:

(a) not to seek to discharge, surrender, lapse, vary, amend, withdraw or remove in any manner whatsoever this Encumbrance Instrument prior to the expiry of that period of time, whether by payment of the total security or otherwise;

(b) to preserve for the period of time set out in this Encumbrance Instrument the integrity of the agreements in this Encumbrance Instrument; and

(c) always to act in good faith and do all acts and things and enter into and execute all documents, instruments (including any replacement encumbrance) and/or easement or land covenant whenever reasonably required by the Encumbrancee and otherwise obtain any necessary consents all of which may be reasonably necessary and appropriate to give full force and effect to the intentions and understandings of the Encumbrancer and the Encumbrancee.

14 The Encumbrancee will, upon request by the Encumbrancer, discharge this Encumbrance Instrument from any part of the Land that is to be vested as road or reserve in the relevant local authority.

Continue in additional Annexure Schedule, if required

15 For the purposes of the Property Law Act 2007 and the Land Transfer Act 2017, the Encumbrancee consents to the following dealings affecting the Land:

(a) creation, variation or surrender of an easement or covenant (but not including any covenants contained in this Encumbrance Instrument);

(b) registration of a mortgage instrument, variation of a mortgage instrument or mortgage priority instrument where the priority of mortgages does not involve or concern this Encumbrance Instrument;

(c) registration of a lease, lease variation instrument or surrender of a lease; and

(d) any other instrument which is expressed as being subject to this Encumbrance Instrument or which ranks after this Encumbrance Instrument;

and the Encumbrancee's further consent to any such dealings shall not be required.

SCHEDULE
(Refer clause 3.1 (b))

BUILDING TYPE	**OCCUPANCY/ACTIVITY**	**MAXIMUM INDOOR DESIGN NOISE LEVEL $L_{Aeq(24h)}$**
Residential	Living spaces, sleeping spaces (including visitor accommodation and retirement accommodation)	40 dB
Education	Assembly halls	35 dB
	Conference rooms, drama studios	40 dB
	Lecture rooms and theatres, music studios	35 dB
	Libraries	45 dB
	Sleeping areas in educational facilities	40 dB
	Teaching areas	40 dB
Health	Overnight medical care, wards	40 dB
	Clinics, consulting rooms, theatres, nurses' stations	45 Db
Cultural buildings	Places of worship, marae	35 dB

Note: Excludes areas not deemed to be habitable spaces as defined by schedule 1 of the Building Regulations 1992

Extract from *N.Z. Gazette*, 8 May 1997, No. 45, p. 1066

Declaring State Highway to be Limited Access Road: State Highway No. 2, Silverstream to Petone

It is notified that Transit New Zealand, by resolution dated 3 March 1997, and pursuant to section 88 (1) of the Transit New Zealand Act 1989, hereby declares that part Lot 3, D.P. 7415 (at RP 946/13.27) and proceeding in a south-westerly direction, for a distance of approximately 14.27 kilometres, to the south-eastern boundary of part Lot 1, D.P. 790 (at RP 962/12.16) as more particularly shown in Plan LAR 9/2/11 and accompanying Schedule held in the office of the Regional State Highway Manager, Transit New Zealand, Wellington and there available for public inspection, to be a limited access road.

22D/509

86/72

Dated at Wellington this 29th day of April 1997.

M. K. LAUDER, State Highway Operations Manager, Transit New Zealand.

nz2849

Notice No. 2849

CT 40A/431	New Zealand Railways Corporation
CT 40A/431	New Zealand Railways Corporation
CT 40B/716	Robert Mason & Susan Violet Mason
CT 40B/848	Rakish Chand & Korocawiri Vakatovolea
CT 41A/669	Alan James McLuskie & Isobel Elizabeth McLuskie
CT 41B/358	Landcorp Investments Limited
CT 41D/467	COMMISSIONER OF CROWN LANDS
CT 41D/470	Wilfred Gregory Poole
CT 42B/157	New Zealand Railways Corporation
CT 42B/548	Catherine Lesley Sheppard, John Patrick Sheppard
CT 42B/549	John Anthony Gibb, Judith Lesley Gibb & Lindsay Montgomery Wilson

CT 36D/932	Manor Park Golf Club Inc.
CT 377/198	Maureen Mary Collins & Anthony Kenneth Lyte
CT 379/183	Mark Stephen Brown -Thomas
CT 37A/914	Alasdair Donald McVeth, Ann Louise Thompson, Gray Stratton Thompson, Bruce Charles Davidson
CT 37B/580	Christine Marise Ngawai Matangi
CT 37C/249	Mainfreight Transport Limited
CT 390/283	Craig Robert Lilley
CT 39C/696	Henry William Alfred Clinch
CT 39D/84	Jannine Carole Berridge & Kevin Wayne Sarney
CT 408/104	Roger James Robins & Beatrice June Robins
CT 40A/431	New Zealand Railways Corporation

CT 42B/671	The Wellington Diocesan Board of Trustees
CT 42D/910	Gregory Nigel Carden & Christine Ann Carden
CT 42D/911	Merlene Burnett
CT 435/90	Inge Junge
CT 437/275	David James Trotter & Lesley Winifred Shepherd
CT 44A/346	Casata Limited
CT 44A/346	Casata Limited
CT 44B/466	Manor Park Golf Club Inc.
CT 450/15	Kapiti Roadmakers & Contractors Limited
CT 451/25	COMMISSIONER OF CROWN LANDS
CT 451/25	COMMISSIONER OF CROWN LANDS

CT 11A/1319	Allan Robin Brown
CT 11B/1212	Phillip Henry Bothamley & Michelle Marie Bothamley
CT 11D/1333	Alpha Specialised Movers Limited
CT 11D/208	Jennifer Ann Benson & John David Benson
CT 12A/435	Alec George Day
CT 12C/1500	Allan Robin Brown
CT 12C/477	Marita Frances Dougherty & Wayne Dougherty
CT 13D/893	John Nixon & Karen Cecily Barclay
CT 14A/1408	Lynden Hodge, Shayne Patrick Hodge & Nigel Munro Moody
CT 14A/907	Govind Parbhu ,Savita Parbhu, Brian Kevin Beyer, David Bernard Robinson
CT 14B/465	Hutt City Council

CT 150/91	Hutt City Council
CT 177/192	Brenda Helen Van Maastricht
CT 177/192	Brenda Helen Van Maastricht
CT 186/97	Jean Juniot & Rachel Anne Juniot
CT 18A/103	Noeline Elizabeth McCarthy
CT 18D/324	Claire Michelle Page Hanify
CT 20D/1212	Fiona Gaye Norris
CT 20D/1353	Paul Joseph Persico
CT 20D/406	Hutt City Council
CT 20D/612	Alan Columban Devine
CT 21C/373	Hutt City Council

CT 21C/534	Michaela Frances Stevens & Bernard John Harnett
CT 21D/118	Alison Joy Milner & Wilfred John Milner
CT 22C/570	John Fairley Wadham & Charmaine Isobel Wadham
CT 22C/772	Hutt City Council
CT 22D/807	Hutt City Council
CT 249/189	Maureen Elsie Segessenmann
CT 24B/75	Neville Jordan & Diane Jordan
CT 25B/384	Hutt City Council
CT 27C/500	Hutt City Council
CT 285/253	Grant Segessenmann & Maureen Elsie Segessenmann
CT 28C/237	William Chun, Marie Chun & Jeffery Tong

Unit CT 31B/472 Stratum Title 31B/474	Rich Red Wine Company Limited
Unit CT 31B/472 Stratum Title 31B/474	Rich Red Wine Company Limited
Unit CT 31B/473 Stratum Title 31B/474	Morrow Equipment Company L.L.C.
Unit CT 31B/473 Stratum Title 31B/474	Morrow Equipment Company L.L.C.
Unit CT 43B/413 Stratum Title 43B/416	Peter Bernard Olsen & Elizabeth Frances Olsen
Unit CT 43B/414 Stratum Title 43B/416	Peter Bernard Olsen & Elizabeth Frances Olsen
Unit CT 43B/415 Stratum Title 43B/416	Peter Bernard Olsen & Elizabeth Frances Olsen

Unit CT 20C/48 Stratum Title 20C/50	Michael Stennett Hurle
Unit CT 20C/49 Stratum Title 20C/50	Anna Vasquez
Unit CT 20C/564 Stratum Title 20C/50	Diana East
Unit CT 20C/565 Stratum Title 20C/50	Teresa Joan Cheyne
Unit CT 20C/566 Stratum Title 20C/50	Derry Teck Chye Tan & Lisa Seet Leng Tan
Unit CT 20D/207 Stratum Title 20C/50	Penelope Jane Anstis & Ross Francis Anstis
Unit CT 22A/411 Stratum Title 20C/50	Julie Anne Margaret Yardley & William Leslie Gee & Margaret Ellen Gee
Unit CT 22A/412 Stratum Title 20C/50	Geoffrey Bernard O'Connor
Unit CT 22A/413 Stratum Title 20C/50	Katrina Maree Harding & Thomas James Harding
Unit CT 22A/414 Stratum Title 20C/50	Stuart Ernest Hewer & George Angus Heyer
Unit CT 22A/415 Stratum Title 20C/50	Leon James Ure & Linda Sheena Ure

CT D3/854	Ronald Albert Wright & Doris Wright
CT D3/872	Richard George Rhoades & Diana Jean Rhoades
CT D4/1278	Manu Ranchod & Puspa Ranchod
CT D4/1446	Pia Gronning Osborne & William Michael Osborne
CT E1/241	Winifred Ann Ross
CT E3/954	Brian Dwayne Smith & Raymond James Palmer
CT F1/240	John Charles Davidson & Carol Margaret Scott
CT F1/893	Erica Margaret Hema
CT F3/34	Peter James Feakin & Judith Maud Feakin
CT35D/955	Darryl John Ingham & Elizabeth Helen Ingham
Unit CT 20C/47 Stratum Title 20C/50	Elizabeth Anne Bouzaid

Unit CT 22A/416 Stratum Title 20C/50	Maya Beddie-Geiser
Unit CT 22A/417 Stratum Title 20C/50	Iain Anderson
Unit CT 22A/418 Stratum Title 20C/50	Irene Joyce Pickford
Unit CT 22A/419 Stratum Title 20C/50	Yoong Siong Lim & Geik Nooi Lim
Unit CT 31B/463 Stratum Title 31B/474	Edna Ethel Hartson, Michael William Hartson
Unit CT 31B/463 Stratum Title 31B/474	Edna Ethel Hartson, Michael William Hartson
Unit CT 31B/464 Stratum Title 31B/474	Highway Holdings Limited
Unit CT 31B/464 Stratum Title 31B/474	Highway Holdings Limited
Unit CT 31B/465 Stratum Title 31B/474	Adam Enterprises 1988 Limited
Unit CT 31B/465 Stratum Title 31B/474	Adam Enterprises 1988 Limited
Unit CT 31B/466 Stratum Title 31B/474	Adam Enterprises 1988 Limited

Unit CT 31B/466 Stratum Title 31B/474	Adam Enterprises 1988 Limited
Unit CT 31B/467 Stratum Title 31B/474	Lui See Chung, Yeung Ching Kwong
Unit CT 31B/467 Stratum Title 31B/474	Lui See Chung, Yeung Ching Kwong
Unit CT 31B/468 Stratum Title 31B/474	Biro Bic New Zealand Limited
Unit CT 31B/468 Stratum Title 31B/474	Biro Bic New Zealand Limited
Unit CT 31B/469 Stratum Title 31B/474	Roger Severs Moore
Unit CT 31B/469 Stratum Title 31B/474	Roger Severs Moore
Unit CT 31B/470 Stratum Title 31B/474	Peter James Cottier, Dale Frances Monk, Ross Frederick Monk
Unit CT 31B/470 Stratum Title 31B/474	Peter James Cottier, Dale Frances Monk, Ross Frederick Monk
Unit CT 31B/471 Stratum Title 31B/474	Retort Holdings Limited
Unit CT 31B/471 Stratum Title 31B/474	Retort Holdings Limited

Schedule A

CT 101/295	COMMISSIONER OF CROWN LANDS
CT 10A/725	Ullrich United Holdings Limited
CT 10A/726	Ullrich United Holdings Limited
CT 10A/748	Dennis Mark O'Sullivan & Bernard Gavan O'Sullivan
CT 10A/750	James McGrath McIntyre
CT 10A/751	Ullrich United Holdings Limited
CT 10A/752	Ullrich United Holdings Limited
CT 10A/753	Hutt City Council
CT 10A/754	Hutt City Council
CT 10B/382	Hutt City Council

CT 292/145	Ian Graeme Stuart
CT 292/200	Leonard Frederick Bonner
CT 296/67	COMMISSIONER OF CROWN LANDS
CT 30D/915	Stanley William Dobson
CT 31A/398	Mainfreight Transport Limited
CT 32C/89	Bryan Lawrence Russell
CT 32C/90	Charles Peter Anderson, Colleen Jane Anderson & Peter John McLeod
CT 32D/208	Ian Gordon McKinnon & Jennifer Rose McKinnon
CT 34A/813	Sarah Ann McCallum & William Hamilton McCallum
CT 34A/814	Lesley Ruth Houlahan
CT 361/100	Catherine Joyce McLarin & Maurice Wesley McLarin

CT [illegible]/221	Hillside Properties & Developments Limited
CT 567/244	Brian James McPhee
CT 569/247	Brian James McPhee
CT 583/294	Mary King Anderson Priest
CT 583/295	Mary King Anderson Priest
CT 597/40	Henry John Barker, Margaret Louise Barker, Gary Richard Barker & John Richard Barker
CT 604/37	Joanne Marie Williams & Peter Cecil Williams
CT 609/51	Dahi Rananlal Patel & Rananlal Vallabh Patel
CT 620/47	Wellington Regional Council
CT 637/35	Robt. Lockwood HoldingsLimited
CT 638/37	Glenda Marilyn Badger & Ross Martin Badger

9/6	Charles Albert Free & Kathleen Thelma Free
CT 659/86	Alpha Specialised Movers Limited
CT 670/73	Mihikone Hazel Patterson, Ware Malcolm Patterson, Ian Nigel Stirling, Kathleen Jane Sudfeldt & Michael Graham Sudfeldt
CT 6B/1416	Rene Alexander Werkhoven & Geraldine Marguerite Werkhoven
CT 740/51	Robt. Lockwood Holdings Limited
CT 740/52	Robt. Lockwood Holdings Limited
CT 783/56	John Rankin Drummond & Susan Nancy Drummond
CT 795/24	Murry John Beevers & Alice Doreen Beevers
CT 795/26	Charlotte Katz
CT 7A/768	Wellington Regional Council

CT 639/6	Charles Albert Free & Kathleen Thelma Free
CT 659/86	Alpha Specialised Movers Limited
CT 670/73	Mihikone Hazel Patterson, Ware Malcolm Patterson, Ian Nigel Stirling, Kathleen Jane Sudfeldt & Michael Graham Sudfeldt
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CT 795/24	Murry John Beevers & Alice Doreen Beevers
CT 795/26	Charlotte Katz
CT 7A/768	Wellington Regional Council

CT 451/25	COMMISSIONER OF CROWN LANDS
CT 459/120	Hugh Raymond McKenzie & Lorraine McKenzie
CT 45B/635	Casata Limited
CT 45B/635	Casata Limited
CT 45B/635	Casata Limited
CT 46C/380	Alan Rakesh Singh & Ronda Margaret Singh
CT 46C/380	Alan Rakesh Singh & Ronda Margaret Singh
CT 474/74	George Cook
CT 486/149	Casata Limited
CT 486/149	Casata Limited
CT 486/149	Casata Limited

CT 511/166	Owen Victor Smith
CT 511/254	Alan Richard Watson
CT 511/255	James Francis Griffin & Joan Patricia Griffin
CT 514/54	Raymond Frank Salter & Deborah Christine Salter
CT 515/257	Yit Mee Kok
CT 517/291	Priscilla Janice Cheung
CT 517/295	Lillian Hanford
CT 51D/490	Alison Leith Dewes & Bim Daniel Dewes
CT 51D/490	Alison Leith Dewes & Bim Daniel Dewes
CT 523/213	Kris Edwin Fredrickson & Pauline Mary McDiarmid
CT 540/99	Guy Philip Brewer & Susan May Brewer

	Places To Stay Limited
CT B1/44	John David MacGibbon & Patricia Ann MacGibbon
CT B1/972	Mark Edward Dingle & Katerina Anja Dingle-Tiscenko
CT B2/1494	Richard John Emery & Christine May Emery
CT B4/1158	Kevin Alexander Beale & Jennifer Frances Beale
CT B4/337	Colin John Crowther & Raewyn Anne Crowther
CT C4/1082	David Roderick Armstrong & Tamara Undine Allerhand
CT C4/875	Rene Alexander Werkhoven & Geraldine Marguerite Werkhoven
CT D1/1267	Peter James Feakin & Judith Maud Feakin
CT D3/1004	Karst van Diggele & Lee Annette van Diggele
CT D3/1202	Puspa Langdale, Richard Dennis John Langdale

CT 922/57	Wellington Regional Council
CT 936/40	Wellington Regional Council
CT 955/78	Wellington Regional Council
CT 981/13	Brent Murray Cottle
CT 984/13	Julia Anne Lewis, Timothy John Lewis, Lighthouse Nominees Limited, John Andrew Lewis, Susanna Elizabeth Lewis, John Philip Fretwell
CT 9B/1341	Rene Alexander Werkhoven & Geraldine Marguerite Werkhoven
CT 9C/1388	Wellington Regional Council
CT A3/1111	Franciscus Johannes Schrijvers & Greta Margaret Schrijvers
CT A3/524	Places To Stay Limited
CT A3/524	Places To Stay Limited

CT [illegible]	Todd Russell Dixon & Leanne Margaret Dixon
CT 814/38	Kapiti Roadmakers & Contractors Limited
CT 832/32	Charlotte Katz
CT 845/66	William James Welch & Heather Welch
CT 852/26	Colin John Matthews & Lynley Jane Matthews
CT 881/28	Fritz Edmund Petersen & John Mouroukis
CT 888/69	Derek Francis Plimmer, Amanda Leigh Plimmer & Edward Waclaw Juchnowicz
CT 891/57	Wellington Regional Council
CT 893/94	Shirley Anne Redington
CT 901/21	Howard Brian Low & Winifred Jean Low
CT 901/40	Trevor John Pollock & Marcia Annette Pollock

CT 48A/142	Debra Louise Williams
CT 48A/143	Sheldon Blair Hedgman & Debbie Lee Hedgman
CT 48A/144	Dianne Ellen Purdy
CT 491/279	Clywdd Mark Tredrea
CT 493/268	Richard Ernest Adcock
CT 499/19	Grant Joseph Franklin
CT 49C/184	John Munro Groves & Sharon Margaret Groves
CT 501/178	Wellington Regional Council
CT 503/172	Desmond Wilfred Schollum & Frances Therese Schollum
CT 504/184	Derek Francis Plimmer, Amanda Leigh Plimmer & Edward Waclaw Juchnowicz
CT 509/193	Matthew Charles Sellers

TRANSIT NEW ZEALAND
WAKA ARAHI KI TE AHUREA

Please quote our ref: LAR/42/ 1 /11

IN THE MATTER of the Transit New Zealand Amendment Act 1995

TO : The District Land Registrar of the District of Wellington

PURSUANT to the Transit New Zealand Amendment Act 1995, I, David Robert Rendall, Regional State Highway Manager, Transit New Zealand, Wellington, hereby certify that the instrument attached is being lodged for and on behalf of the Crown and the fee charge would be payable directly or indirectly from the Crown Bank Account. Accordingly an exemption from the prescribed fees is claimed.

Dated at Wellington this 5th day of January 1998.

D. R. Rendall (pursuant to delegated authority)

Wellington Office
Transport House 2nd Floor 275-283 Cuba Street PO Box 27 477 Wellington New Zealand
Phone: (04) 801-2580 Fax: (04) 801 2599

TT203

CT 545/19	Devon Lesley Bruce & Glenn William Scott
CT 545/20	Michael Murray Blair & Karen Margaret Blair
CT 545/21	Dennis William Paton & Kendal Louise Paton
CT 545/22	Amelia Margaret Webster Hay & Frank McLaughlin Hay
CT 545/65	Albertena Hedley
CT 548/79	Richard George Hasselberg
CT 553/66	Graham Frances Margrain, Daryl Kathleen Margrain & Lindsay Montgomery Wilson
CT 562/273	George William Nash
CT 563/289	Fay Evelyn Edney
CT 566/176	Brian James McPhee
CT 566/177	Brian James McPhee

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PARTICULARS ENTERED IN THE
LAND REGISTER
ASST LAND REGISTRAR

DISTRICT LAND REGISTRAR
WELLINGTON, N.Z.

Appendix 3: Lower Hutt District Council Relevant Standard Assessment

Rule	Requirement of Rule	Compliance
General Rural Zone – (Chapter 8)		
8B 2.1.1(a) – Dwellings	Maximum of two dwellings provided that each must have a net site area of 15ha	Dwellings are defined in the district plan as buildings used for housing, no building proposed is intended for housing. **Not applicable**
8B 2.1.1(b) – Minimum Yard Requirements	Principal Buildings: 10m Accessory Buildings: 5m 30m minimum setback from waterbodies >3m wide bank-to-bank 3m minimum setback from waterbodies <3m wide bank-to-bank	The minimum setback provided from site boundaries is 12m and more than 3m from any waterbody. [**Complies]**
8B 2.1.1 (c) – Maximum Height	8m maximum height	The RTS Operations Building (11.4m), the B&C Operations building (11.8m), the MRF Operations Building (11.4m), Workshops (9.0m) and Office Building (9.0m) exceed this maximum building height **[Does not comply]**
8B 2.1.1 (d) – Recession Planes	North Facing Boundary 2.5m + 45° North-east and north-west facing boundaries: 2.5m +41° For all other site boundaries: 2.5m + 37.5°	Due to the buildings positioning being >11m away from each boundary, all buildings are well within these planes **[Complies]**
8B 2.1.1 (e) – Maximum Site Coverage	1000 m^2	RTS Operations Warehouse – 3,750m^2 MRF Operations Warehouse – 2,250m^2 B&C Operations Warehouse – 1,575m^2 Retail, Workshop, Café Building – 990m^2 Office Building – 440m^2 Workshops – 600m^2 Canopy Covered Areas – 1175m^2 Total Site Coverage – 10,780m^2 **[Does not comply]**

8B 2.1.1 (f) – Dust	All outside areas shall be surfaces, or managed appropriately so that there shall be no dust nuisance at or beyond the boundary of the site.	The vast majority of the site shall be paved, resource recovery activities shall be undertaken indoors and as such, dust shall be minimised. It is expected that there shall be no dust nuisance at or beyond the site boundary. **[Complies]**
8B 2.1.1 (g) - Odour	All activities shall be carried out in such a manner so as to ensure that there is not an offensive odour at or beyond the site boundary.	Resource recovery shall be conducted within warehouses and controlled so that any odour is not offensive [**Complies]**
8B 2.1.1 (h) – Lightspill and Glare	(i) Artificial light shall not result in added illuminance in excess of 8 lux measured at the window of a dwelling on a neighbouring site. (ii) All activities shall be undertaken so as to avoid all unreasonable light spill beyond the site boundary (iii) All activities, buildings and structures shall avoid glare (light reflection) beyond the site boundary	All lighting will be designed to comply with this condition with a final lighting plan provided as a suggested condition of consent. [**Complies]**
8B 2.1.1 (i) – Vibration	All activities that cause vibration shall be carried out in such a manner that no vibration is discernible beyond the site boundary	Acoustic site assessment undertaken by Tonkin and Taylor indicates that there shall be no vibration discernible beyond the site boundaries.[**Complies]**
8B 2.1.1 (j) – Home Occupations	Not applicable	-
8B 2.1.1 (k) – Piggeries	Not applicable	-
8B 2.1.1 (l) – Commercial Forestry	Not applicable	-
8B 2.1.1 (m) – Recreation	Not applicable	-
8B 2.1.1 (n) – Visitor Accommodation	Not applicable	-
8B 2.1.1 (o) – Prospecting and Exploration	Not applicable	-
8B 2.1.1 (p) – General Rules	Compliance with all matters in the General Rules – see Chapter 14	Chapter 14 Compliance is outlined in a following table
8B 2.1.1 (q) – Benmore Cres, Manor Park, Section 1 SO 36533	Development of buildings and structures may only occur on land above 28.0 msl (mean sea level)	Rosco Ice Cream Limited are conducting site improvement works that will raise the site so that

		future developments (including Waste Management) are above 28.0 msl. **[Complies]**
8B 2.1.1 (r) - Baring Head, Pt 1A2 Parangarahu	Not applicable	-
8B 2.1.1 (s) – DP 72284	Not applicable	-
8B 2.1.1 (t) – Primary and Secondary River Corridors	All new buildings and structures or additions in the Primary or Secondary River Corridor with a gross floor area of 20m^2 or less and setback 20m or more from a flood protection structure	The site is not within a Primary Corridor but is within the Secondary Corridor. Buildings exceed 20m^2 **[Does not comply]**
General Rules (Chapter 14)		
14A 5.1 – Transportation	Complies with the Standards listed in the Transport Appendix	Transportation assessment conducted by Stantec outlines improvements to the roading surrounding the site. The proposed land use will exceed the 5,000m^2 GFA for industrial activities. **[Does not comply]**
14B 2.1 – Signs Permitted Activities	Signs in all Activity Areas	Signs shall meet the permitted activity standards for the proposed land use for the General Rural Zone and being within 50m of a State Highway. No signs shall be located on a roof.**[Complies]**
14C 2.1 – Noise in General Rural Activity Area	Maximum 50dBA (7am – 10pm) Maximum 40dBA (10pm – 7am)	Operating hours are nominated to be 7:30am to 6:00pm with expected operational dBA maximum as observed by neighbouring sensitive receivers of 48dBA. **[Complies]**
14D 2.1 – Hazardous Facilities		The proposed activity does not expressly meet the definition of hazardous facility **[Complies].** It is noted that any consents required for hazardous substances will be sought separately.
14E 2.1 – Significant Natural, Cultural and Archaeological Resources	The site is not within an identified Natural, Cultural and Archaeological area	-
14F – 2.1 Heritage Buildings and Structures	The site does not contain heritage registered buildings or structures	-
14G – 2.1 Notable Trees	The site does not contain any notable trees. The consent to authorise bulk earthworks includes tree removal.	-

14H – 2.1 Natural Hazards	Restrict Discretionary Activities (a) All Structures and buildings on any site where the whole site or portion of the site falls within the Wellington Fault Special Study Area, excluding the following • Proposed accessory buildings which are not required for habitable or working purposes, • Utilities including associated uninhabited buildings which are Permitted Activities Note: This rule prevails over Rule 17.2.2	The site includes the Wellington Fault Special Study Area. This have further been investigated to narrow down the Wellington fault zone area. No working purpose buildings are proposed within the fault zone area, proposed buildings are outside of this zone. Areas within the fault zone shall only be used for uninhabited buildings, storage, manoeuvring and parking. **[Does not comply]**
14I – 2.1.1 (a) Ground Level	The natural ground level may not be altered by more than 1.2m, measured vertically	Development of the site will not result in altering the ground level beyond 1.2m vertically. **[Complies]**
14I – 2.1.1 (b) Quantity	Maximum volume of 50m^3	Works to establish the warehouses and sealed surfaces onsite will exceed 15,000m^3. **[Does not comply]**
14I – 2.1.1(c) Baring Head, Pt 1A2 Parangarahu	Not applicable	-
14I – 2.1.1(d) In the Primary and Secondary River Corridors	Earthworks must be a minimum distance of 20m from a flood protection structure.	Works onsite will be within 20m of the Hutt River stop banks but will be on a surface that is above predicted 1% AEP. **[Does not comply]**
14J – Temporary Activities	The proposed development does not propose any temporary activities as described in this section.	-
14K – Filming	The proposed development does not propose any filming	-
14L – Renewable Energy Generation 14L 2.1.2 – Roof mounted Solar Panels	May exceed the permitted height of an activity area by no more than 1m May exceed the recession plan standard for an activity area by no more than 1m	Proposed solar panels do not increase proposed building height by >1m. **[Complies]**

Appendix 1: Assessment against Relevant Rules and Regulations – City of Lower Hutt District Plan

Appendix 4: Landscape and Visual Assessment, Visual Simulations and Planting Plan – Boffa Miskell

Boffa Miskell

Resource Recovery Park Proposal

Assessment of Landscape Effects
Prepared for Building Solutions

19 December 2022

Document Quality Assurance

Bibliographic reference for citation: Boffa Miskell Limited 2022. *Resource Recovery Park Proposal: Assessment of Landscape Effects*. Report prepared by Boffa Miskell Limited for Building Solutions.		
Prepared by:	Bec Ramsay Landscape Architect/Associate Principal Boffa Miskell Limited	
Reviewed by:	Emma McRae Landscape Architect/ Associate Principal Boffa Miskell Limited	
Status: Final	Revision / version: [1]	Issue date: 19 December 2022

Template revision: 20180621 0000

File ref: Document1

Executive Summary

1.1.1 Boffa Miskell Limited (BML) has been engaged by Building Solutions to undertake an Assessment of Landscape Effects report for a development proposal at 30 Benmore Crescent, Manor Park in Hutt City.

1.1.2 The proposal is for a resource recovery park operations yard occupying 5.785 hectares in the south-western part of a 13.2-hectare property (refer Appendix 2, Figure 1).

1.1.3 The wider site is a discrete area of rural zoned land, roughly triangular in shape, bounded by Te Awa Kairangi/Hutt River to the south, SH2 to the west and north, and the rail line and part of the Manor Park residential area to the east. The site is not part of a wider rural landscape.

1.1.4 The site is not currently occupied and has a mixed land cover of gravel clearings and vegetation. Dry Creek runs through the site with an associated band of vegetation along the creek corridor. The site has been heavily modified by earthworks and land use over time and it is unlikely the Creek follows a natural flow path.

1.1.5 Vegetation across the site includes exotic and native species and a mix of trees and low vegetation cover. The vegetation and changes in ground level across the site limit views to and across the site.

1.1.6 To the north and west of the site beyond the SH2 corridor is the Belmont Hills special amenity landscape and the Te Awa Kairangi/Hutt River corridor is also a special amenity landscape. The site itself occupies an area of the valley floor landscape between the two but is not part of either.

1.1.7 The natural character of Dry Creek as it passes the proposed development area is currently **low-moderate** and will not change as a result of the proposed development, with a 10m setback between the development area and the creek.

1.1.8 The proposed development (including landscape planting) will result in **low adverse** effects at a wider landscape scale, with **low-moderate adverse** effects on the local landscape character due to mature vegetation removal and the introduction of large-scale building development. The site comprises a small component of the wider valley landscape.

1.1.9 Visual effects from private and public viewpoints are mixed. From nearby public roads the viewers are likely less sensitive to any landscape change and views are relatively fleeting as people pass the site. Establishing planting, recessive, natural building colours and limiting signage on buildings will help reduce potential prominence of new buildings in the views and the buildings will be seen in the context of a mix of land use and development in the surrounding area.

1.1.10 Viewers on the Hutt River Trail will be more sensitive to visible built development on the site as they will be moving more slowly and are travelling through a park like setting. While the site will only be intermittently visible for approximately 500m of the trail on either side of the river, the effects will range from **none** to **moderate adverse** the closer a viewer is to the site**.**

1.1.11 Proposed planting along the site boundary and on the Hutt River corridor would be in keeping with the aspiration of the community and the GWRC and Hutt City Council River Environment Strategy to establish more native vegetation planting in the area while reducing visual effects as seen from either side of the Hutt River Trail.

1.1.12 From private property to the east of the site views of the proposed development are from an elevated, distant location where planting will help integrate the development into the landscape rather than provide screening. The site will form a small component of a wider view of the valley floor and Belmont Hills with a range of land use and development in pockets visible on either side of Te Awa Kairangi/ Hutt River corridor. The development will result in a **low adverse** visual effect for these viewers.

1.1.13 From private properties at the end of Mary Huse Grove, the proposed development is closer but viewed beyond the railway embankment that rises steeply at the back of the residential properties. Planting is proposed along the development site boundaries resulting in **low-moderate** adverse visual effects after 5 years of planting establishment.

CONTENTS

Appendices

- Proposed landscape plan (north and south)
- Site cross-sections
- Visual illustration location points map
- Visual illustrations from selected viewpoints

Appendix 3: HCDP Zone Map

1.0 Introduction

1.1 Scope of the report

1.1.1 Boffa Miskell Limited (BML) have been engaged by Building Solutions to undertake an Assessment of Landscape Effects for a proposal to develop 5.785 hectares (the development Site) of a 13.2-hectare property for a resource recovery park operations yard.

1.1.2 The development Site and wider property is zoned General Rural Activity Area and is situated at 30 Benmore Crescent, Manor Park in Hutt City, refer **Appendix 2 Map 1**.

1.1.3 The following Assessment of Landscape Effects evaluates the landscape and visual effects of the proposed development on the immediate and surrounding environment character.

1.2 Other Relevant Technical Reports

1.2.1 Site layout design was an iterative process as a range of technical reports were prepared to understand site opportunities and constraints. Geotechnical and flood impact assessments were undertaken to understand the flood risk to the site and the implications of the Wellington Faultline on site use and development.

1.3 Assessment Process

1.3.1 This assessment follows the concepts and principles outlined in Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines[1]. A full methodology is outlined in **Appendix 1** of this report. The effects ratings are based upon a seven-point scale, which ranges from very low to very high. A graphic supplement has been included in **Appendix 2**, which includes a Site Context Plan, a Site Development Plan, Proposed Landscape Planting Plan, a Viewpoint Location Map and photographs/ illustrations of the proposed development from selected viewpoint locations.

1.3.2 An initial site visit was carried out in March 2022. This was to the Site and area immediately surrounding to understand existing site conditions, character, and visibility of the Site. Additional site visits in April and September 2022 were to consider views to the site from further afield and assess visibility of the proposed

[1] 'Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines', Tuia Pito Ora/NZILA, 2022

development in the context of ongoing site work and site layout plan development for the resource recovery park proposal.

1.3.3 The Hutt Landscape Study Landscape Character Description (2012) and Hutt City Landscape Evaluation Draft Technical Assessment (2016) were used to inform this report. The documents were used to prepare the GWRC Regional Policy Statement (2013), the GWRC Proposed Natural Resources Plan (2019) and the Hutt City District Plan, providing landscape and natural character assessment and identification of Special Amenity Landscapes as required by the Resource Management Act (1991).

1.3.4 A review of the Te Awa Kairangi/Hutt River Environmental Strategy[2] and Management Plan and Operations Manual[3] also informed this assessment, providing further context and strategic direction on the Te Awa Kairangi/Hutt River values, management and use.

1.3.5 **Appendix 2** includes a series of visual illustrations. These are intended to indicatively represent the proposed building locations and heights and assist in understanding the potential visibility of built development and effect on the landscape. A selection of eight viewpoints were chosen from where development is potentially most visible.

2.0 Proposal Description

2.1 The proposed development is to establish a resource recovery park operations business within the property. In summary, the proposal includes:

- Six buildings ranging in size from a workshop building of 550m^2 floor area with an 8m stud through to a RTS Operations Workshop with a floor area of 3,750m^2 and 12.68m in height.
- Concrete hard stand and turning/manoeuvring areas for a range of vehicles including large trucks.
- Truck wash, a covered canopy and bin storage areas and two weighbridges.
- Landscape planting to the southern site boundary adjacent to Hutt River/Te Awa Kairangi land and along the north-eastern boundary and rail corridor boundaries.
- Additional revegetation and screen planting is proposed within the adjacent GWRC land to the south and west of the property (refer **Appendix 2, Figure 3.1 and 3.2** for landscape plans).

[2] Boffa Miskell, 2018: Te Awa Kairangi/Hutt River Environmental Strategy: Action Plan, prepared for Greater Wellington Regional Council

[3] Boffa Miskell, 2022. Future of the Te Awa Kairangi/Hutt River Corridor: Environmental and Recreational Management Plan and Operations Manual. Report by Boffa Miskell Limited for Greater Wellington Regional Council.

- No development is proposed across the wider property in this resource consent application.

2.1.1 A separate resource consent application has been submitted to seek approval for bulk earthworks that will result in a flat site for the proposed resource recovery park development. This assessment has been carried out based on new ground levels anticipated under the earthworks consent.

For a detailed description of the proposed development please refer to the AEE prepared by Potentialis Planning.

3.0 Relevant Statutory / Non-statutory Provisions

3.1.1 The purpose of this section of the report is to outline the statutory matters that need to be considered that relate specifically to landscape, visual and natural character effects. The key statutory documents are:

- The Resource Management Act (1991)
- The GWRC Regional Policy Statement (RPS)
- The GWRC Proposed Natural Resources Plan (PNRP)
- Hutt City Council District Plan (HCDP)

3.2 Resource Management Act

3.2.1 The RMA provisions relevant to natural character, landscape and visual effects addressed in this report are in respect of:

- Section 6(a) – the preservation of the natural character of the coastal environment, wetlands, lakes and rivers and their margins.
- Section 7(c) – the maintenance and enhancement of amenity values
- Section 7(f) – the maintenance and enhancement of the quality of the environment

3.2.2 Section 6(a) is a “matter of national importance” under the RMA while Section 7 matters are identified as “other matters” which persons exercising functions and powers under the Act must “have particular regard to”.

3.3 GWRC Regional Policy Statement (RPS)

3.3.1 The RPS became operative in 2013 and provides the current framework for the sustainable management of the Region’s natural resources.

3.3.2 Within the RPS, Objective 17 is relevant to the Region’s outstanding natural features and landscapes. Under this objective, Policies 26 and 50 require the identification, protection and management of outstanding natural features and landscapes. Objective 18 refers to the Region’s special amenity landscapes with policies 27 and 28 referring to their identification and management.

3.3.3 No outstanding natural features and landscapes or special amenity landscapes have been identified within the site in accordance with the RPS, however the adjacent Hutt River and the hills to the west are both special amenity landscapes (refer to **Appendix 2, Figure 1**).

3.4 GWRC Proposed Natural Resources Plan (PNRP)

3.4.1 Within the PNRP, the Hutt River is identified as a Category 2 Surface Waterbody. Areas of the Hutt River identified as significant are upstream of Kaitoke Weir and beyond the area of the river adjacent to the Site. Policy 24 of the Plan requires that significant adverse effects on areas of natural character outside the coastal marine area are avoided, remedied or mitigated. Policy 48 requires the adverse effects of activities on all other natural features and landscapes are avoided, remedied or mitigated. To date, GWRC or Hutt City Council have not carried out an assessment of natural character of the regions lakes and rivers and their margins. An assessment of effects on natural character is provided in section 5.2 below.

3.5 Hutt City Council District Plan (HCDP)

3.5.1 The Site is zoned General Rural under the Hutt City Council District Plan (HCDP). The Area Wide Issues section of the HCDP describes a wide range of anticipated use within the General Rural zone with a single objective at 1.10.7 *“to protect and enhance the rural character, landscape and amenity values of the rural activity area”*.

3.5.2 The HCDP describes the General Rural Activity Areas at 8B 1.1.1 as follows in relation to Open Space Character and Amenity Values:

Generally, the rural area is different from urban and rural residential areas because of the large land parcels and the low intensity of both the activities and buildings. To ensure the retention of the open space character and amenity values of the rural

area, the adverse effects of activities and subdivision must be appropriately managed.

3.5.3 Policy 8B 1.1.1 states:

(a) to allow for those activities which are appropriate in rural areas and which maintain and enhance the open character and amenity values of rural areas together with the intrinsic values of ecosystems.

(b) To ensure that sites are of a size that the open space character and amenity values of rural areas are maintained and enhanced.

(c) The preservation of the natural character of wetlands, lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development.

3.5.4 Policy 8B 1.2.1 outlines Minimum Requirements for Sites and Buildings, in particular in relation to character and amenity and flood hazard management, noting: *The size and shape of sites, the number and size of buildings and the location of buildings on the sites are important elements in determining the character and amenity values of rural areas. It is necessary to have conditions relating to these elements to ensure the character and amenity values of rural areas are maintained and that buildings and structures are sited to avoid or mitigate the adverse effects of flood hazards.*

3.5.5 Policy relevant to landscape and visual effects assessment follows with Explanation and Reasons: *Minimum conditions which determine when and where buildings are located on a site contribute to the character, amenity values and adverse effects of flood hazards of rural areas. The first determinant of this is the minimum size and shape of sites. Once the subdivision pattern is established, the extent to which a site is built on, the relationship of buildings to boundaries, the height of buildings and the ability for daylight to enter the setback area are important on-site determinants of the overall character and amenity values of rural areas.*

3.5.6 The proposed development will enable operation of a resource recovery park business. The activity has been assessed as non-complying under the District Plan.

3.5.7 General Rural Activity Area allows for a broad range of activities and includes permitted activity standards for development. Relevant to landscape and visual effects assessment, is a permitted building height of 8 metres (from pre-bulk earthworks ground level) with permitted site coverage of 1000m2 and two dwellings permitted per site. Minimum permitted site area is 15ha.

3.5.8 There is also a Manor Park specific rule to manage flood risk that requires building on land over 28.0 msl which requires parts of the site to be raised through bulk earthworks (a separate consent application).

Other relevant HCDP matters

3.5.9 The HCDP does not contain rules that prevent the clearance of vegetation onsite. Therefore, under the current District Plan all vegetation onsite can be removed as a permitted activity (i.e. no resource consent required). This is an important part of the

context for the assessment of effects below. GWRC regional rules may restrict vegetation clearance within the bed of Dry Creek. However, this is outside the scope of the proposed consent application and no vegetation removal within the bed of the creek is proposed.

3.5.10 The location of the Wellington Faultline and Wellington Fault Special Study Area overlay will influence development onsite. The proposed development plan outlines the location of the Wellington Faultline which has been defined through a geotechnical assessment. No building development is proposed within this area.

3.6 Non- statutory material

3.6.1 The following are the key non-statutory documents that relate to understanding the landscape values, development and management of Te Awa Kairangi/Hutt River which is adjacent to the site.

- Te Awa Kairangi/Hutt River Environmental Strategy: Action Plan, prepared for Greater Wellington Regional Council (2018);
- Future of the Te Awa Kairangi/Hutt River Corridor: Environmental and Recreational Management Plan and Operations Manual. Report by Boffa Miskell Limited for Greater Wellington Regional Council. (2022);
- Hutt Landscape Study, Landscape Character Description (2012); and
- Hutt City Landscape Evaluation Draft Technical Assessment (2016).

3.6.2 The landscape study and evaluation reports were prepared to inform the Hutt City Council District Plan review that is currently being prepared and to give effect to the GWRC RPS. The landscape reports assist in understanding landscape context and values as described below in Section 4 of this report.

3.6.3 The River Strategy and Management Plans outline management priorities, issues, opportunities, and implementation and provide context to considering the values associated with the river. The *Future of the Te Awa Kairangi/Hutt River Corridor* plan provides objectives and actions for river management that meet community aspirations of enhancing the natural environment and recreational activities of the Te Awa Kairangi/ Hutt River, its margins and the wider river corridor, whilst enabling flood protection objectives and operations to be achieved. It outlines the detail of how projects and actions identified in the Environmental Strategy will be achieved.

3.6.4 A River Corridor Plan Project is identified in the River Corridor Plan with a proposal to carry out native planting adjacent to the Site and downstream of the Pomare rail bridge. Planting in the River Corridor design guide includes potential to use poplars and willows but natives are identified as key in this area due to the potential to bridge

the narrow ‘gap’ connecting the native vegetation and habitat areas in the Belmont Hills to the north-west with the Stokes Valley hills to the south-east.

4.0 Existing Environment

4.1.1 This section describes the existing Site and its landscape context, including landscape values and available viewing audiences. This provides the baseline for the assessment of effects.

4.2 Landscape Context

4.2.1 The site is located approximately 7km north of central Lower Hutt, to the west of the established residential area of Manor Park, between State Highway 2 (SH2) and the Wairarapa railway line. **Appendix 2, Figure 1** shows the site and surrounding context described below.

4.2.2 The Te Awa Kairangi/Hutt River runs along the southern boundary of the Site. There is approximately 50 metres between the Site boundary and the Hutt River Trail public walkway. Vegetation cover and rising topography between the trail and the site limits views into the Site. The vegetation along the trail is varied with open grass areas adjacent to the trail, weed species to the west and poplar planting (for flood management) along sections of the river edge. This is a typical pattern of river edge vegetation in this area with views of the wider landscape limited by vegetation cover, topography and the river stop banks.

4.2.3 To the north-west of the site, beyond the wider property boundary and SH2 corridor, the topography rises sharply up into the Belmont Hills. The Belmont Hills escarpment is part of the steep, heavily vegetated escarpment landscape that runs along the western side of SH2 from Wellington City out to the site and beyond. The SH2 alignment follows along the bottom of the escarpment, also following the Wellington Faultline, and forms a recognisable feature of the Wellington landscape.

4.2.4 The Site is located at the western edge of the river flats landscape where there is a mix of land use. The most prominent built features are the road and rail corridors, including SH2 and the interchange located approximately 100 metres to the north-east of the Site entrance. The interchange provides access to Manor Park and Haywards Hill. There is a rail station with pedestrian over pass over the motorway approximately 400 metres to the north-east of the property entrance and a rail bridge over the river to the east of the site.

4.2.5 There is residential development to the south of the Site beyond the river (Pomare) and north and east beyond the rail line (Manor Park). There is also residential development in the Stokes Valley hills, approximately 400 metres to the east beyond the rail line and river. Residential land use and other built development set amongst

or surrounded by the golf course, river corridor and vegetated steep hill sides, creates a landscape characterised by pockets of built development.

4.2.6 The Manor Park Golf Course (part of the Hutt River Special Amenity Landscape (SAL)) occupies a large area to the north-east of the site contributing to the open space and vegetated character of the river corridor, while the housing along Mary Huse Grove to the east of the Site is tightly confined between the rail corridor and the river stop bank. The Site is similarly contained between SH2, the rail corridor and the river.

4.2.7 Industrial and infrastructure related land uses are also evident in the landscape with Belmont Quarry, Allied Concrete and a paving company located along Hebden Crescent and the Haywards Sub Station on Haywards Hill Road. At the entrance to the site off Benmore Crescent there is a yard space with various buildings, storage and manoeuvring areas typical of light industrial land use.

4.2.8 The Belmont Hills to the west of SH2, the Stokes Valley hills, the river, SH2 and the rail corridor create a local landscape pattern that is complex with a visible mix of land use and character. The steep escarpment, hill sides and river corridor remain largely undeveloped, with available flat areas developed for residential use. This is reflected in the District Plan zones surrounding the site that include Extraction, General Recreation, General Residential and Business (refer to **Appendix 3**)**.** The Site is not part of a larger rural landscape.

4.2.9 In the wider context, the Site is located within the Hutt Valley Character Area[4] as identified in the Hutt Landscape Study which includes the Hutt Valley floor and the lower portion of the hill slopes to the east. The Hutt Landscape Study (2012) notes that "*Te Awa Kairangi/Hutt River is the dominant element of this landscape character area, and in combination with the Wellington fault has been instrumental in the formation of the entire valley"*. The landscape surrounding the site is an area of the Hutt Valley where the valley floor narrows. The eastern hills of Stokes Valley extend down towards the river corridor and the escarpment landscape to the north-west rises steeply above State Highway 2 (SH2) and Hebden Crescent.

4.2.10 The *Hutt City Landscape Evaluation*[5] describes two Special Amenity Landscapes (SAL's) that form part of the surrounding landscape context of the Site. These are the Hutt River SAL along the southern boundary of the Site and Manor Park, and the Belmont Hills SAL on the escarpment on the other side of SH2 (refer **Appendix 2, Figure 1**).

4.2.11 The Belmont Hills SAL extends down to the valley floor parallel to the north-western Site boundary on the opposite side of the 50m wide Hebden Crescent and SH2 road corridor. The SAL has high[6] sensory, and shared and recognised values, and medium natural scenic values. The landscape includes Belmont Regional Park with a range of recreational, cultural heritage and ecological values. While modified by a history of pastoral farming and other land use, there are still large areas of visible

[4] Hutt Landscape Study, Landscape Character Description (2012)

[5] Hutt City Landscape Evaluation Draft Technical Assessment (2016)

[6] On a scale 7-point scale ranging from very high to very low as per Best Practice guidance reference above.

forest cover and functioning ecosystems along the steep escarpment slopes and gullies.

4.2.12 The Te Awa Kairangi/Hutt River SAL borders the southern boundary of the Site and has been assessed as having very high shared and recognised values due to the significance of the recreational values in this area. Cultural and heritage associations are also significant. Sensory values are high and natural science values are medium. The river floodplain landscape is described as "*highly modified with a low level of naturalness, as evidenced by ongoing channel realignment, engineered stop banks, presence of roads and structures within the floodplain, and the introduction of large areas of exotic riparian vegetation."*

4.2.13 The Site is not located within either SAL and the Site is a comparatively small component of the wider landscape context.

4.3 Site Description

4.3.1 **Appendix 2, Figure 2** provides an aerial view of the site and immediate surrounds. The aerial view also shows boundary conditions, vegetation cover and the location of Dry Creek. Further vegetation clearance has occurred across the Site and wider 13.2-hectare property, in preparation for earthworks and a planting programme along Dry Creek.

4.3.2 The development site occupies a 5.8-hectare, wedge shaped, southwestern end of a 13.2 property in Manor Park. There are currently two options to access the Site, travelling through the wider property and over one of two bridges across Dry Creek (refer Image (a) below).

***Image (a)**: Sheds and hard stand areas within the site. View from within the site looking west across one of the Dry Creek crossings. The hills visible are the escarpment landscape beyond SH2.*

4.3.3 Dry Creek runs along the north-western boundary of the site with a proposed twenty-metre planted corridor (via a separate earthworks consent) and building setback the entire length of the stream as it passes through the wider property. Existing vegetation along Dry Creek varies, with more native species and dense vegetation cover along the southern part of the boundary where the creek runs through GWRC land. Beyond the Creek is a narrow flat area of land, with SH2 along the north-western boundary of the property (not part of the development Site).

4.3.4 Less than ten metres beyond the southwestern corner of the site is the Hutt River Trail with a pedestrian and cycle bridge crossing over Dry Creek. The trail turns a 90-degree bend with a section of timber paling fence between the site and the trail. The Hutt River Trail crosses Dry Creek and passes the higher topography of the Site to descend and continue along the river corridor up to the Pomare rail bridge.

4.3.5 The eastern Site boundary drops steeply down to a narrow track at the bottom of the adjacent railway line embankment. To the north-east of the development Site is another flat area of disused land that is part of the wider property.

4.3.6 There is a currently a bank that roughly divides the development Site into north-eastern and south-western parts (refer to Image (b) below). The north-eastern, more

elevated portion of the site has mixed vegetation cover with piles of topsoil and rough ground towards the east (refer to Images (b) and (c) below).

***Image (b)**: Photograph from beyond the southern site boundary looking north across the site. At right of photo in the middle ground the slope between the two parts of the site is visible. Trees along Dry Creek are also visible in the middle ground at the centre of the photo.*

***Image (c)**: The upper part of the Site has a mix of vegetation cover with gravel areas and piles of soil to the left of the viewer. A rail corridor gantry is visible beyond the Site boundary in the middle distance and right of the photo.*

***Image (d)**: View from within the site looking north illustrating mixed vegetation cover and ground conditions. The tall tree line is the location of the proposed north-eastern boundary of the resource recovery park site.*

4.3.7 There is currently an open culvert lined with mature trees that delineates the north-eastern site boundary and the eastern boundary runs along the rail corridor. Refer image (c) and (d) above.

4.3.8 The south-western portion of the site encompasses flatter ground with a mix of vegetation (refer to Image (e) below).

***Image (e)**: Large, flat south-western corner of the Site. The light pole at right of photo is not within the site but part of the adjacent GWRC land along Te Awa Kairangi/Hutt River Corridor. This part of the Site is not visible from the River Trail due to topography, vegetation and the timber paling fence along part of the trail edge.*

4.3.9 Across the site there are areas of concrete hardstanding, gravel yards, piles of building materials and piles of soil. There are several tall light poles, of a similar size and height to streetlights and associated with past site use. The poles are not contained within the Site and there is no obvious boundary line between the Greater Wellington Regional Council land to the south and the Site.

4.3.10 The Site, the wider property and the surrounding area are not typically rural in character. There are no areas of agricultural or horticultural use, no fencing, yards or sheds that might prompt a viewer to appreciate a rural character. The site is unused and unmanaged with remnants of light industrial use visible in the gravel and concrete ground surfaces and fencing. The absence of many buildings is notable, when viewed from a distance, with a mix of open ground, trees and vegetation the prominent features associated with the Site. The site is not adjacent to or

surrounded by rural land. The site and wider property are not part of a rural landscape and there is no rural land use associated with the site.

5.0 Assessment of Effects

5.1.1 Landscape and visual impacts result from natural or induced change in the components, character or quality of the landscape. The proposed development will result in formal establishment of industrial type use including a range of buildings and site activity with subsequent changes in character and amenity.

5.1.2 The landscape and visual effects generated as a result can be perceived as:

- Positive (beneficial), contributing to the visual character and quality of the environment;
- Negative (adverse), detracting from existing character and quality of environment; or
- Neutral (benign), with essentially no effect on existing character or quality of environment.

5.1.3 The degree to which landscape and visual effects are generated depend on several factors, these include:

- The degree to which the outcomes of the development contrasts, or is consistent, with the qualities of the surrounding landscape;
- The way in which the development area is observed and experienced, determined by the observer's position relative to the area and its extent;
- The distance and context within which the proposal is viewed / experienced;
- The area or extent of visual catchment
- The number of viewers, their location and situation - static, or moving;
- The predictable and likely known / expected future character of the locality; and
- The quality of the resultant landscape, its aesthetic values and contribution to the wider landscape character to the area.

5.1.4 Change in a landscape does not of itself, constitute an adverse landscape or visual effect.

5.1.5 The effects considered below are:

- *Natural Character effects*
- *Landscape / rural character effects*

- *Visual amenity effects from public and private locations*

5.2 Natural Character Effects

Assessment of existing natural character

5.2.1 In terms of natural character, the highest degree of naturalness occurs where there is the least amount of human induced modification. A change in land use and development as proposed will alter the natural character of the site. The significance of this effect is dictated by the size, location and sensitivity of the receiving environment.

5.2.2 Dry Creek runs along the north-western boundary of the site, flowing from the Belmont Hills to the west and meeting Te Awa Kairangi/Hutt River to the southwest of the site. There are a range of conditions along the length of the creek margins as it runs through the wider property, however the vegetation is generally dominated by exotic weed species, such as blackberry with a high canopy of willows and eucalyptus. There are areas of regenerating native vegetation such as mahoe, kawakawa, karamu, tarata, puahou, harakeke and te kouka along the creek beyond the south-western site boundary.

5.2.3 There are two existing culverts within the bed of Dry Creek with bridges that currently provide access to the Site. The presence of these culverts and bridges contributes to the level of modification of the Creek. Earthworks that have occurred at various stages across the site and wider property have changed natural overland flow and the stream bank gradients and heights.

5.2.4 The Creek is well vegetated, but it is a modified environment with previous land use having negatively impacted natural character of the stream and stream corridor through native vegetation removal, weed species establishing and changes to natural overland flow. Overall, it has a **moderate-low** level of natural character.

5.2.5 At a broader scale, the site sits adjacent to the Hutt River/Te Awa Kairangi corridor. The river corridor is a widely recognised landscape feature of the Hutt Valley that, along with seismic activity, played a key part in the formation of the landscape and continues to express natural processes and contribute to the natural character of the Hutt Valley.

5.2.6 Due to human settlement in the valley landscape, the natural elements, patterns and processes associated with the river are modified and heavily managed. In the immediate vicinity of the Site the Hutt River expresses a moderate level of modification. This includes the presence of engineered stop banks, earthworks (constructed groynes and the like) along the riverbanks, and road and rail bridges.

5.2.7 The natural character is influenced by the presence of the Pomare rail bridge, recreation access tracks, significant areas of weed species and a large area of

exotic planting established to stabilise the river edge and protect the area from river erosion.

5.2.8 Although the condition of this reach of the river and surrounding landscape is affected by flood management structures, housing development and planting of exotic riparian vegetation, the river and its vegetated margins provide a wildlife corridor with moderate natural character. The flood pulses of the river system and the presence of wildlife are important factors which contribute to natural character.

5.2.9 The Hutt River/Te Awa Kairangi corridor adjacent to the site expresses a **moderate-low** level of natural character.

Assessment of natural character effects

5.2.10 The Hutt River/Te Awa Kairangi corridor is adjacent to the development Site. There is no proposed development activity outside the Site boundary. The Proposed Landscape Planting Plan (refer to **Appendix 2, Figures 3.1 and 3.2**) includes a proposal for planting at the Site boundaries and across an area of the GWRC corridor adjacent to the site. The proposed planting will enhance the biodiversity value of the river corridor along this portion of the river, aligning with future plans by GWRC and HCC to carry out a native planting programme along this section of the river south of the Pomare rail bridge[7].

5.2.11 Proposed development will be set back from Dry Creek by a minimum of ten metres from the water flow centre line. This provides space for some existing vegetation to be retained with a proposal to clear weed species and establish new native planting along a 20 metre Dry Creek corridor. The Creek revegetation is not part of this resource consent application but is proposed through separate subdivision and earthworks consents.

5.2.12 The proposal to establish Site access from the northeast will enable two existing culverts and bridges to be removed from Dry Creek. This will take away some of the elements of modification of the creek and enable water to flow more naturally. A separate consent application will be required for any work in the Creek, including the culvert removal and remediation and/or any stormwater outlets required to service the proposed Site development.

5.2.13 The proposed development will result in the removal of all vegetation from within the Site. This includes large trees that provide shade to the creek. The short-term effect on natural character of Dry Creek from Site vegetation clearance will be low adverse. In the long term the effect on natural character will likely be neutral with similar margin conditions to those that exist now, albeit a change from predominantly exotic and weed species to a predominance of native planting.

5.2.14 In the broader context of the Hutt River corridor, the proposed development will have a neutral effect on the natural character of the Hutt River. There will be a loss of vegetation across the Site and no discernible improvement to the water quality of the Hutt River. Consent for stormwater discharge to Dry Creek and any culvert removal

[7] Refer to the *Future of the Te Awa Kairangi/Hutt River Corridor: Environmental and Recreational Management Plan and Operations Manual. Report by Boffa Miskell Limited for Greater Wellington Regional Council. (2022)*

will be required and will be appropriately manage any effect on water quality and flow.

5.2.15 Vegetation removal and construction of buildings, fencing and lighting will alter the experiential values associated with the part of the River Trail between the Pomare Bridge and the Taita Rock area on the opposite side of the River to the Site. This is a distance of approximately 500m of the River and views to the site from the River Trail will remain filtered by the willows along the river banks and other vegetation along the river corridor adjacent to the site boundary. Also, the site is set back from the river channel and riparian edge and is part of an already heavily modified river environment, reducing the perception of change in the overall experience of using the River Trail.

5.2.16 Without planting to help screen development onsite from the Hutt River, there will be an adverse effect on the experiential component of the natural character of the Hutt River as a viewer passes the Site. Proposed buildings within the site (the largest 12.68m in height) will be visible from the River Trail through vegetation within the Hutt River corridor. **Appendix 2, Figure 4** provides viewpoints showing the worst-case visibility of the proposed buildings without proposed screen planting and with planting that has had 5 years to establish. The Visual Amenity Effects section of this report (refer 5.5 below) considers visual effects in detail.

5.2.17 The post development condition of Dry Creek and the Hutt River/Te Awa Kairangi environment will both continue to exhibit **moderate-low natural character**. The Table below provides a summary of natural character components and effects.

Natural Character Description	Current Condition	Post Development Condition	Level of Effect
Biophysical - Active Bed - Hutt River/Te Awa Kairangi • There will be no change to the natural form and flow of this section of the Hutt River/Te Awa Kairangi	Moderate - Low	Moderate - Low	Neutral
Biophysical – Active Bed - Dry Creek There will be no change to the Creek.	Low	Low	Neutral
Biophysical – River Margins - Hutt River/Te Awa Kairangi • There will be an increase in native planting along a short section of the Hutt River margins.	Moderate-Low	Moderate-Low	Neutral
Biophysical – River Margins - Dry Creek • The proposed development includes protection of a 20m corridor along the Creek.	Moderate-Low	Moderate - Low	Neutral
Experiential - Hutt River/Te Awa Kairangi • The proposed development will change experiential values associated with the Hutt River at a local scale (approximately 500m as a viewer passes the site) in the	Moderate – Low	Low (local), Moderate - Low (wider)	Low adverse

Natural Character Description	Current Condition	Post Development Condition	Level of Effect
short term. Once vegetation has established that assists in screening the proposed buildings from the Hutt River Trail, this change will be less evident. At a broader scale the experiential value of the Hutt River will not change with a wide range of land use visible adjacent to the River Trail. From elevated distance views (the residential properties to the east in Stokes Valley) there will be new development in the broader landscape view however this comprises only a small component of the view and is not entirely out of place or unexpected in the mixed-use landscape.			
Experiential – Dry Creek • The proposed development will change the landuse adjacent to a section of approximately 450m of the creek. The creek will become less vegetated, and the adjacent area will become a built environment. There is very limited opportunity for people to access the creek on the Site boundary and it will continue to be perceived as a modified waterbody.	Moderate - Low	Moderate - Low	Neutral
OVERALL NATURAL CHARACTER EFFECTS			
Hutt River/Te Awa Kairangi			**Neutral**
Dry Creek			**Neutral**

5.3 Landscape Effects

Assessment of existing landscape character

5.3.1 Landscape character is derived from the distinct and recognisable pattern of elements that occur consistently in a particular landscape. It reflects particular combinations of geology, landform, soils, vegetation, land use and features of human settlement. It creates the unique sense of place defining different areas of the landscape.

5.3.2 The site is part of the Hutt Valley landscape as described in section 4.2 above. At a landscape scale, the development site is part of a comparatively small area of flat land, sandwiched between the Hutt River to the south and east (a Special Amenity Landscape) and the Belmont Hills to the north-west (also a Special Amenity Landscape). Refer to Appendix 2 for Site context plan.

5.3.3 Other than an absence of built development, the site and wider property does not exhibit any rural character and is not part of a wider area of recognisable rural

landscape pattern. There is no agricultural or horticultural land use at the site or on adjacent land.

5.3.4 The character of the property is most heavily influenced by the pattern of clearings and weed growth within a framework of taller trees along the length of Dry Creek, along the southern and eastern boundaries of the site and a stand that runs roughly east-west across the north-eastern edge of the Site.

5.3.5 There are areas of established vegetation across the property, however overall, the area is unused and unmanaged. There are large areas where weeds are establishing on previously cleared ground and other areas where compaction of the ground and gravel cover is limiting any vegetation growth.

Assessment of landscape effects

5.3.6 The proposed development will enable establishment of a resource recovery park operation. A bulk earthwork consent application to establish a flat development area across the Site is currently under consideration by Hutt City Council. The site development and landscape plans at **Appendix 2** assume approval of the earthworks with planting proposed to help integrate the development into the surrounding landscape and in particular the Te Awa Kairangi/Hutt River and Dry Creek corridor edges.

5.3.7 The Site comprises a relatively small portion of the river flats and is contained by the varied land use and built features at a local scale (within approximately 500 metres of the site). The small size of the Site and location in relation to the river and hills of the Hutt Valley means that a change in land use as proposed will not noticeably impact the character and quality of the wider landscape.

5.3.8 The proposed development will alter the character of the Site by enabling built development and use that would not ordinarily be anticipated in a rural zone. While the stream corridor will be protected adjacent to the Site (20m width along the stream), the majority of the existing vegetation onsite can be expected to be removed as part of the development. In the short term, this will result in built development being a more prominent feature in the landscape than it might otherwise be if it was seen settled amongst a framework of tall trees and vegetation at the site boundaries.

5.3.9 The proposed landscape plan (refer **Appendix 2, Figures 3.1 and 3.2**) has been developed to provide for new vegetation to be established at the site boundaries and within the Te Awa Kairangi/Hutt River corridor. This planting will, in time, help partially screen development and integrate the development into the site.

5.3.10 At a local scale (site and immediate surroundings), the proposed development will impact the character of the Hutt River/Te Awa Kairangi landscape context, changing the character of one side of the river landscape for approximately 500m of the river corridor. The prominence of vegetation, absence of buildings and feeling of being momentarily separated from the urban environment will change to an experience

that includes large scale buildings and activity visible (and likely audible) at the edge of the recreation area.

5.3.11 The landscape plan includes an area of planting within the river corridor. The planting includes a native revegetation species mix with taller species to help mitigate visual effects of the proposed development. Once established (at 5 years) the new planting will also contribute to a change in the character of the stretch of river trail adjacent to the site with a prominence of native vegetation along the trail edge with buildings visible beyond.

5.3.12 Both the addition of visible built development and new native vegetation will not be out of character in the immediate area and will be experienced along a short section of the trail by people moving through a varied landscape pattern of mixed use, built form and vegetation patterns.

Summary of Landscape Effects

5.3.13 The Site is part of a wider landscape that includes the Hutt River/Te Awa Kairangi and Belmont Hills Special Amenity Landscapes. However, the magnitude of change from the proposed development in relation to the scale of those landscapes will be low, with no direct effect on the identified SAL's. While the change to the site will be permanent, the site comprises a small component (5.785ha) of the wider landscape and impacts will be limited to the immediate setting (within approximately 500m) rather than impacting the wider landscape character and quality.

5.3.14 In summary, whilst the Site will undergo a substantial land use change through the proposed development, the Site does not form part of a wider rural landscape that exhibits a consistent rural landscape character across a large area. As a small area of land within a wider landscape with a broad mix of land use, the effect of the development on the wider landscape is considered low.

5.3.15 The proposed landscape planting plan will integrate proposed development into the landscape, establishing site boundary vegetation and a new edge condition along a short section of the Te Awa Kairangi/Hutt River Trail where large buildings will be visible beyond a dense band of native vegetation planting.

5.3.16 The proposed development (including landscape planting) will result in **low adverse effects** at a wider landscape scale, with **low-moderate effects** on the local landscape character due to mature vegetation removal and the introduction of large-scale building development.

5.4 Visual Catchment

5.4.1 The visual catchment and viewing audience of the proposal was determined through three site visits and desktop assessment of aerial photography and mapping.

5.4.2 In summary, the visual catchment is confined to limited views through vegetation to parts of the site from the Hutt River Trail (approximately 500m of the trail and on both sides of the River and south of the site around the pedestrian bridge 'Craigs

Crossing'), the Hutt River stop bank (adjacent to High Street), SH2 (for approximately 500m), Hebden Crescent, and the rail corridor (as it passes the site).

5.4.3 The site is visible from the Mary Huse Grove intersection with Manor Park Road, from the small play area and river connection path on Mary Huse Grove and from the pedestrian overpass at Manor Park rail station. More distant views down into and across the entire site are available from residential property and roads along the hilltops of Stokes Valley.

5.4.4 Section 4.2 of this report and the associated images in that section describe the site characteristics that influence the visual catchment with photographs from within the site. In summary, existing vegetation on site and in the surrounding landscape (i.e along Te Awa Kairangi/Hutt River and SH2 corridors), the rail corridor and Hutt River embankments and the rising topography of the Stokes Valley Hills and SH2 escarpment are the key components that influence the extent of the visual catchment of the site.

5.4.5 Appendix 2 contains a selection of representative viewpoints (considered in detail below) with an indicative outline of proposed building development across the Site. These visual representations are intended to illustrate potential effects of the proposed development at points where there is visibility of the site. The visualisations assume new ground levels across the Site as per a separate resource consent application (with Hutt City Council but not approved at the time of writing).

5.5 Visual Amenity Effects

5.5.1 Visual amenity is one component of what contributes to the amenity values of a place. Amenity value is defined as:[8] *'those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes'.*

5.5.2 Visual amenity effects are influenced by a number of factors including the nature of the proposal, the landscape absorption capability and the character of the site and the surrounding area. Visual amenity effects are also dependent on distance between the viewer and the proposal, the complexity of the intervening landscape and the nature of the view.

Effects from public viewpoints

5.5.3 Due to the location of the Site at the edge of the valley floor, the site and surrounding topography, and development and vegetation patterns in the wider landscape, there are limited public vantage points from which views towards the site are obtained and where visual effects require consideration.

5.5.4 Public vantage points include parts of adjacent and nearby roads (SH2, Hebden Crescent and Mary Huse Grove) and the Hutt River/Te Awa Kairangi River Trail. From SH2 and Hebden Crescent, development within the Site will be visible from the

[8] Defined in s2 of the RMA 1991.

roads, but in oblique views for a short period of time and beyond the Dry Creek trees. From Mary Huse Grove, the local park and river connection walkway, built development within the Site will be visible in the middle distance beyond the rail line. Viewer sensitivity to change in the view from the roads is not considered high.

5.5.5 Viewer sensitivity to change is considered higher for the river trail as people will be moving more slowly past the site either on foot or by bike. While there is a mix of conditions along the length of the river trail, including visible built development and infrastructure, large, prominent buildings close to the trail have the potential to detract from the recreation experience provided by the river landscape setting.

5.5.6 Visual effects from public vantage points have been assessed as ranging from **low-moderate adverse** to **none** as described below.

Hutt River/Te Awa Kairangi

5.5.7 The Site shares a boundary of approximately 390m in length with the Hutt River/Te Awa Kairangi margin. Between the water's edge and the Site boundary is a varied landscape, with mixed vegetation cover including willows along the river edge, open grass area either side of the Hutt River Trail and predominantly weed species along the bank between the Trail and the Site.

5.5.8 River trail users are exposed to a variety of conditions along the trail as described above and evident on site. The trail provides a recreation opportunity in a relatively natural environment setting. Users will be sensitive to any change that alters the landscape to the extent that it is dominated by built form. The scale of the river landscape means that even with residential areas and road, rail and river management infrastructure in the landscape, the trail experience feels like a linear park. There is a range of transient visual effects experienced as people move along the trail on either side of the river for a length of approximately 500m of trail.

5.5.9 Appendix 2 VS1 (Figure 2) shows a view to the site from the Hutt River Trail on the opposite side of Te Awa Kairangi/Hutt River. Between Taita Rock and the Pomare Rail Bridge (approximately 500m of the Hutt River Trail) views are intermittently available to the site through the stands of river edge willow planting. VS1 (Figure 3 and 4) illustrate the proposed development without planting and with planting (at 5 years). Visual effects from this view are considered **low adverse** after 5 years of planting establishment due to the distance and screening effect of existing riverbank willows and proposed revegetation and screen planting. The hills and river landscape remain prominent components in the view.

5.5.10 Along the trail on the northern side of the river, the Site boundary is situated beyond an existing line of vegetation that runs parallel to the trail (refer to Appendix 2 VS2 (Figure 5). Proposed buildings will be set well back from the viewer, however rising ground levels and building bulk and height (12.68m) will mean the buildings will be a readily visible component of the view when travelling east along the trail.

5.5.11 Travelling in a westerly direction along the trail, the proposed development will be visible as the viewer passes under the Pomare rail bridge, where there is an open view across the site to the two largest buildings. Appendix 2 VS3 (Figure 8)

illustrates the view and the mitigation provided (after 5 years growth) by the proposed planting scheme.

5.5.12 While the buildings will appear large in these closer views to the site from the trail, there will be intervening vegetation to help screen views and space between the large buildings will allow intermittent views to the hills beyond. The existing condition of the area as the trail passes the site includes views of the rail bridge and overhead lines and old light poles. The fencing and vegetation give the area an unmanaged character where new, large buildings are less out of character than in the context of other areas of the trail such as the open and high amenity golf course landscape further east. Recreation trail users will pass the site with intermittent visibility of large buildings on one side and the unchanged river edge view on the other side. Visual effects range from none where intervening vegetation screens the site to **low-moderate adverse** in the closest views from parts of the trail on the northern side of the river.

5.5.13 The proposed development will not be visible beyond the vegetation along Dry Creek as viewed from the River Trail beyond the south west corner of the site. The view is illustrated in Appendix 2 VS7 (Figure 18). The existing paling fence across the creek (visible in the image) will screen views across the site and the trail then descends down to the Hutt River edge. Proposed planting at the corner of the site will provide additional screening should the fence be removed in the future by GWRC (refer to Appendix 2 Map 3 Landscape Plan).

5.5.14 Mitigation planting as proposed along the southern site boundary will provide some screening of the proposed development over time. Native planting will be in keeping with the mixed vegetation character along the river corridor and aligns with work proposed in the *Future of the Te Awa Kairangi/Hutt River Corridor* Plan, to carry out additional planting native in this area (on the western side and to the south of Pomare Bridge).

Mary Huse Grove

5.5.15 Appendix 2 VS 4 (Figure 10) shows the view of the proposed development from the footpath and entrance to a public walkway connecting Mary Huse Grove to the Hutt River Trail. The view illustrates the visual effect with Figure 11 showing the mitigation planting at 5 years growth. A person will see this view in passing with the buildings in the middle distance and beyond the housing of Mary Huse Grove and the rail embankment and lines. The hills beyond remain prominent.

5.5.16 Appendix 2 VS 5 (Figure 13) is a view from the opposite end of Mary Huse Grove at the intersection with Manor Park Road. The view is more distant, but the buildings are similarly set in the context of a foreground of a street view and houses.

5.5.17 A viewer driving or walking along the road would not be highly sensitive to the addition of further buildings in the landscape as they will be viewing the Site in the context of existing residential development. The visual effects from Mary Huse Grove will be **low-moderate adverse** once planting has established that helps break up the scale of the visible buildings.

State Highway 2 and Hebden Crescent

5.5.18 Transitory views of the site are available from SH2 and Hebden Crescent as a viewer passes the site in a vehicle. Appendix 2 VS6 illustrates a view from Hebden Crescent.

5.5.19 There is a variety of land use either side along the length of SH2 as it passes through the Hutt Valley. Drivers pass areas of light industrial and business use, residential areas, the SH2 interchange areas and rail stops and areas where the river and escarpment provide a higher amenity landscape setting. The impression is one of mixed land use, particularly along the valley floor. Drivers and passengers in cars will not be looking towards the Site for an extended period, they will drive past the site in approximately 18 seconds at 100km/hr. The viewing audience can therefore be considered less sensitive to an obvious change in the view along their journey. It is considered that the visual amenity effects of the proposed development, in this short stretch of SH2, are **very low adverse.**

Visual effects from private vantage points

5.5.20 The following analysis is based on observations from the Site visit looking out to the wider landscape for houses visible from the site (refer to Image below) as well as from desk-top research. The location of the site and surrounding land use and topography mean views to the site from residential areas are limited. The main locations from where the Site may be visible is from residences situated in the hills of Stokes Valley and Mary Huse Grove. Representative views from publicly accessible locations were obtained to represent the views from private dwellings as access to private property has not been obtained for the purpose of this assessment.

View from the Site looking south-east to the hills of Stokes Valley. Very few houses are visible (on Aldersgate and Whitechapel Grove) where gaps in the trees on the hills below the housing areas allow views out.

5.5.21 Appendix 2 VS2 (Figure 20) illustrates a view of the proposed built development on the site as seen from the end of Aldersgate Grove. Detailed assessment from three residential areas where views to the site can be obtained is outlined below.

Address	**Distance from Site***	**Nature of View**	**Description and assessment of potential visual effects**
2-9 Aldersgate Grove	600-690m	Open	The Site is part of a wide (over 180 degrees), elevated view across the Hutt Valley available from these houses. The river landscape, the hills beyond and associated skyline make up most of the view. Built development and infrastructure is visible, including residential housing, the river stop banks and rail and road corridors. The Belmont Quarry and the Haywards Sub Station are also visible. The Site is a component of the view, visibly contained between the river, SH2 and the rail line. The proposal would change a part of the view but would not impact the visibility or prominence of the river, hills and skyline beyond. Initially viewers would notice a change in part of the view as development is established across the Site and vegetation is cleared. However, in time the development would appear as a discrete area of land use in a view that contains a variety of activity and land use set amongst the river and hills landscape. Given the distance between the houses and Site, the variety of existing land use in the view and the size of the Site relative to the expansive view, the visual effect would transition from **low adverse** as the Site undergoes development (construction effects) to **very low** once new site use and proposed vegetation is established**.**
29, 30 Whitechapel Grove	400m	Open	The assessment of visual effects from these residential properties is similar to above, with the same view available from these houses, albeit approximately 200m closer. The existing outlook from these properties will be altered but not in a way that is uncharacteristic of the receiving landscape. The visual effect is considered **low adverse**. As noted above, this could be reduced further still with the proposed planting across the Site.

188B Eastern Hutt Road	400m	Glimpsed to No view.	There is a small enclave of six houses near the Eastern Hutt Road and High Street round about. One of the houses is slightly elevated with glimpse views through the trees on their property towards the Site. The view is a more direct view across the valley to the Site rather than the elevated views described above. It is likely that the Site will form a component of the view, with the hills and skyline behind. The visual effect is considered **very low adverse** for the same reasons described above. In time, there is the potential for the effects to be reduced further still as vegetation within the homeowner's property and along the river corridor grows, further filtering views across the valley floor.
27, 31 & 32 Mary Huse Grove houses	40 – 50m	View beyond rail embankment from backyards	Visibility of the site from Mary Huse Grove footpaths suggests that the proposed development will be visible from the backyards and views from windows within dwellings at the end of Mary Huse Grove. The steep railway embankment and associated vegetation between the houses and the site will limit views with only the upper portion of the operations workshop building likely visible with the SH2 escarpment hills beyond. The visual effect from these properties is considered **moderate adverse** due to the higher sensitivity of the viewers (being within their private property) and proximity balanced with the reduction in prominence associated with the railway embankment and hill context beyond. Views to the site from these properties could be reduced further through planting at their boundaries. Proposed mitigation planting within the site will reduce visibility after 5years, resulting in a **low-moderate adverse** visual effect.

Summary of Visual Amenity Effects

5.5.22 The nature and location of the Site lends itself to a change in use that can be accommodated without significant change to the character and quality of the wider landscape, provided recommendations as outlined below are adopted. Localised visual effects and management of the Site interface with adjacent land use, including roads and high value public open space, can be mitigated with the provision of planting within and around the Site. The planting will fit well in the landscape, in time replicating established patterns of linear bands of tall trees associated with Dry Creek, the Site boundaries and changes in level across the Site. The bulk and scale

of the proposed buildings can be reduced as seen from key public vantage points as described above and visually integrated into the site and wider landscape.

6.0 Recommendations

6.1.1 The following mitigation measures are recommended to minimise adverse landscape and visual effects. If implemented the measures will assist with the development integrating into the surrounding landscape and provide opportunity to support natural values of Dry Creek and the Te Awa Kairangi/Hutt River.

1. The proposed landscape plan will be implemented prior to construction of development on site. The Landscape Plan will include the following:
    - Buffer/screening planting along the boundary of the Site with the Hutt River/Te Awa Kairangi River Trail. Planting should include a mix of species, predominantly native with tall trees that provide some screening of proposed buildings and site activity and enhance biodiversity and amenity values.
    - The tallest and fastest growing species will be located closest to the proposed buildings to maximise screening potential.
    - A planting and management plan for a 20 m wide riparian margin along Dry Creek. This will improve habitat and amenity values along the Creek.
    - The rail corridor boundary will be planted, with sufficient space for large tree species to establish to provide screening as viewed from Mary Huse Grove.
2. It is recommended that a condition of consent is included to control building colour to a dark green or dark grey (colour steel *Karaka, Ironsand* or similar) to help reduce the prominence of the buildings as seen against boundary vegetation and the escarpment hills in views from the south, east and north east of the Site.
3. There should be no signs or advertising on the southern, western or eastern building facades along the Hutt River site boundary to ensure building prominence is minimised as far as possible.

7.0 Conclusions

7.1.1 While currently zoned General Rural, the Site does not display a typically rural character, is not part of a wider rural landscape and does not contribute in any significant way to the rural character of the Hutt Valley.

7.1.2 The proposed development will result in a change to the character of the Site. Development can be spatially and visually contained by existing and proposed vegetation and land use and the implementation of a mitigation landscape plan as described above.

7.1.3 The site forms a relatively small component part of the wider Hutt Valley landscape and development will not unduly detract from the amenity, character and values associated with the receiving landscape, provided planting within the site can be retained and/or established as described above.

7.1.4 The landscape and visual effects are summarised in the table below. This includes the effects without mitigation and the effects with mitigation.

VIEWER	**Nature & Level of Effect (no mitigation)**	**Mitigation proposed**	**Nature & Level of Effect (with mitigation)**
Hutt River Trail	Range from none to moderate adverse	Planting along the Hutt River Site boundary including within GWRC land	Range from none to low-moderate adverse
SH2 + Hebden Crescent	Very Low adverse	Retention of Dry Creek vegetation (not part of this consent application)	Very Low adverse
Mary Huse Grove	Low-moderate adverse	Planting along the site boundaries.	Low-moderate adverse
Private property	*Whitechapel Grove, Aldersgate Grove & Eastern Hutt Rd* Low adverse (short term)	Landscape planting	Very Low adverse (long term)
	Mary Huse Grove Moderate adverse (short term)	Landscape planting	Low-Moderate adverse (long term)

LANDSCAPE	Low (landscape scale)	Landscape planting	Low (landscape scale)
	Moderate (local scale)	Landscape planting	Low-Moderate (local scale)

APPENDIX 1:
Natural Character and Landscape Effects Assessment Method

26 August 2022

Introduction

The Natural Character and Landscape Effects Assessment (NCLEA) process provides a framework for assessing and identifying the nature and level of likely effects that may result from a proposed development. Such effects can occur in relation to changes to physical elements, changes in the existing character or condition of the landscape and the associated experiences of such change. In addition, the landscape assessment method includes an iterative design development processes, which seeks to avoid, remedy or mitigate adverse effects (see **Figure 1**).

This outline of the landscape and visual effects assessment methodology has been undertaken with reference to the **Te Tangi A Te Manu: Aotearoa New Zealand Landscape Assessment Guidelines** and its signposts to examples of best practice, which include the **Quality Planning Landscape Guidance Note**[9] and the **UK guidelines for landscape and visual impact assessment**[10]**.**

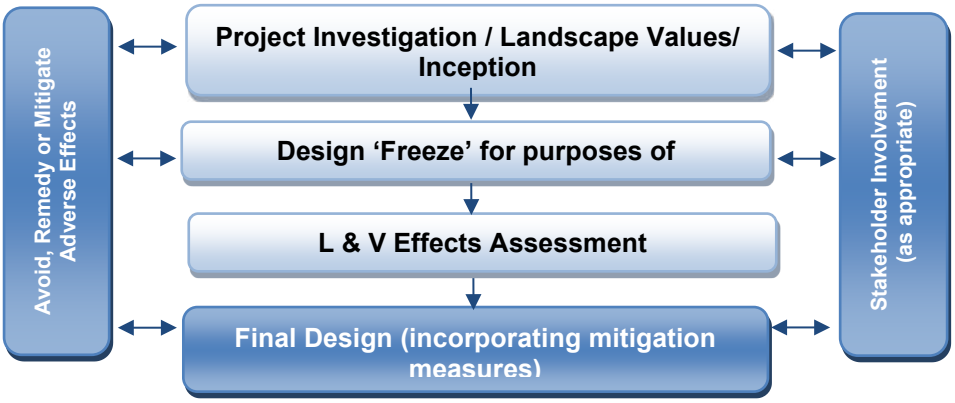


Figure 1: Design feedback loop

When undertaking any landscape assessment, it is important that a **structured and consistent approach** is used to ensure that **findings are clear and objective**. Judgement should be based on skills and experience and be supported by explicit evidence and reasoned argument.

While natural character, landscape and visual effects assessments are closely related, they form separate procedures. Natural character effects consider the characteristics and qualities and associated degree of modification relating specifically to waterbodies and their margins, including the coastal environment. The assessment of the potential effects on landscape considers effects on landscape character and values. The assessment of visual effects considers how changes to the physical landscape affect the viewing audience. The types of effects can be summarised as follows:

Natural Character effects: *Change in the characteristics or qualities including the level of naturalness*

Landscape effects: *Change in the physical landscape, which may affect its characteristics*

Visual effects: *Consequences of change on landscape values as experienced in views*

[9] http://www.qualityplanning.org.nz/index.php/planning-tools/land/landscape
[10] Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3)

The policy context, existing landscape resource and locations from which a development or change is visible, all inform the 'baseline' for landscape and visual effects assessments. To assess effects, the first step requires identification of the landscape's **character** and **values** including the **attributes** on which such values depend. This requires that the landscape is first **described**, including an understanding of relevant physical, sensory and associative landscape dimensions. This process, known as landscape characterisation, is the basic tool for understanding landscape character and may involve subdividing the landscape into character areas or types. The condition of the landscape (i.e. the state of an individual area of landscape or landscape feature) should also be described together with, a judgement made on the value or importance of the potentially affected landscape.

Natural Character Effects

In terms of the RMA, natural character specifically relates to the coastal environment as well as freshwater bodies and their margins. The RMA provides no definition of natural character. RMA, section 6(a) considers natural character as a matter of national importance:

> *…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.*

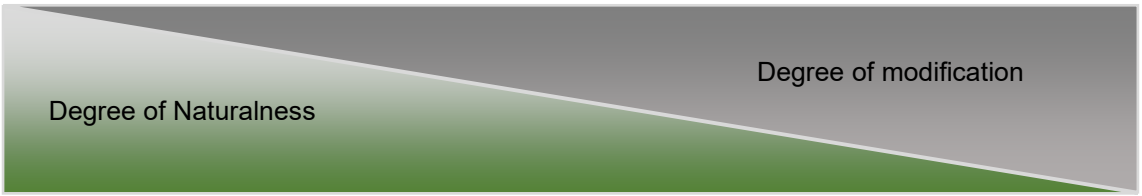
Natural character comprises the natural elements, patterns and processes of the coastal environment, waterbodies and their margins, and how they are perceived and experienced. This assessment interprets natural character as being the degree of naturalness consistent with the following definition:

> *Natural character is a term used to describe the naturalness of waterbodies and their margins. The degree or level of natural character depends on:*
>
> - *The extent to which natural elements, patterns and processes occur;*
> - *The nature and extent of modifications to the ecosystems and landscape/seascape;*
> - *The highest degree of natural character (greatest naturalness) occurs where there is least modification; and*
> - *The effect of different types of modification upon the natural character of an area varies with the context and may be perceived differently by different parts of the community.*

The process to assess natural character involves an understanding of the many systems and attributes that contribute to waterbodies and their margins, including biophysical and experiential factors. This can be supported through the input of technical disciplines such as marine, aquatic and terrestrial ecology, and landscape architecture.

Defining the level of natural character

The level of natural character is assessed in relation to a seven-point scale. The diagram below illustrates the relationship between the degree of naturalness and degree of modification. A high level of natural character means the waterbody is less modified and vice versa.



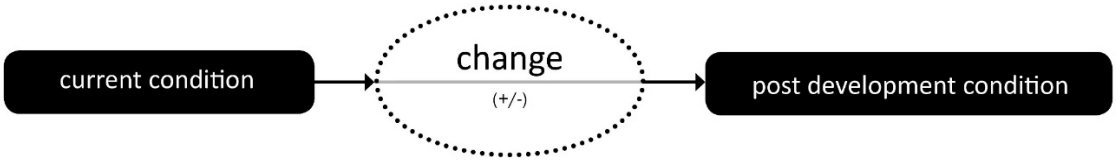
Very High	High	Moderate - High	Moderate	Moderate - Low	Low	Very Low

Scale of assessment

When defining levels of natural character, it is important to clearly identify the spatial scale considered. The scale at which natural character is assessed will typically depend on the study area or likely impacts and nature of a proposed development. Within a district or region-wide study, assessment scales may be divided into broader areas which consider an overall section of coastline or river with similar characteristics, and finer more detailed 'component' scales considering separate more local parts, such as specific bays, reaches or escarpments. The assessment of natural character effects has therefore considered the change to attributes which indicate levels of natural character at a defined scale.

Effects on Natural Character

An assessment of the effects on natural character of an activity involves consideration of the proposed changes to the current condition compared to the existing. This can be negative or positive.



The natural character effects assessment involves the following steps;

- assessing the existing level of natural character;
- assessing the level of natural character anticipated (post construction); and
- considering the significance of the change

Landscape Effects

Assessing landscape effects requires an understanding of the landscape resource and the magnitude of change which results from a proposed activity to determine the overall level of landscape effects.

Landscape Resource

Assessing the sensitivity of the landscape resource considers the key characteristics and qualities. This involves an understanding of both the ability of an area of landscape to absorb change and the value of the landscape.

Ability of an area to absorb change

This will vary upon the following factors:

- Physical elements such as topography / hydrology / soils / vegetation;
- Existing land use;
- The pattern and scale of the landscape;
- Visual enclosure / openness of views and distribution of the viewing audience;
- The zoning of the land and its associated anticipated level of development;
- The scope for mitigation, appropriate to the existing landscape.

The ability of an area of landscape to absorb change takes account of both the attributes of the receiving environment and the characteristics of the proposed development. It considers the ability of a specific type of change occurring without generating adverse effects and/or achievement of landscape planning policies and strategies.

The value of the Landscape

Landscape value derives from the importance that people and communities, including tangata whenua, attach to particular landscapes and landscape attributes. This may include the classification of Outstanding Natural Feature or Landscape (ONFL) (RMA s.6(b)) based on important physical, sensory and associative landscape attributes, which have potential to be affected by a proposed development. A landscape can have value even if it is not recognised as being an ONFL.

Magnitude of Landscape Change

The magnitude of landscape change judges the amount of change that is likely to occur to areas of landscape, landscape features, or key landscape attributes. In undertaking this assessment, it is important that the size or scale of the change is considered within the geographical extent of the area influenced and the duration of change, including whether the change is reversible. In some situations, the loss /change or enhancement to existing landscape elements such as vegetation or earthworks should also be quantified.

When assessing the level of landscape effects, it is important to be clear about what factors have been considered when making professional judgements. This can include consideration of any benefits which result from a proposed development. **Table 1** below helps to explain this process. The tabulating of effects is only intended to inform overall judgements.

Contributing Factors		Higher	Lower
Landscape (sensitivity)	**Ability to absorb change**	The landscape context has limited existing landscape detractors which make it highly vulnerable to the type of change resulting from the proposed development.	The landscape context has many detractors and can easily accommodate the proposed development without undue consequences to landscape character.
	The value of the landscape	The landscape includes important biophysical, sensory and shared and recognised attributes. The landscape requires protection as a matter of national importance (ONF/L).	The landscape lacks any important biophysical, sensory or shared and recognised attributes. The landscape is of low or local importance.
Magnitude of Change	**Size or scale**	Total loss or addition of key features or elements. Major changes in the key characteristics of the landscape, including significant aesthetic or perceptual elements.	The majority of key features or elements are retained. Key characteristics of the landscape remain intact with limited aesthetic or perceptual change apparent.
	Geographical extent	Wider landscape scale.	Site scale, immediate setting.
	Duration and reversibility	Permanent. Long term (over 10 years).	Reversible. Short Term (0-5 years).

Table 1: Determining the level of landscape effects

Visual Effects

Visual effects are a subset of landscape effects. They are consequences of change on landscape values as experienced in views. To assess the visual effects of a proposed development in a landscape, a visual baseline must first be defined. The visual 'baseline' forms a technical exercise which identifies the area where the development may be visible, the potential viewing audience, and the key representative public viewpoints from which visual effects are assessed.

Field work is used to determine the actual extent of visibility of the site, including the selection of representative viewpoints from public areas. This stage is also used to identify the potential 'viewing audience' e.g. residential, visitors, recreation users, and other groups of viewers who can see the site. During fieldwork, photographs are taken to represent views from available viewing audiences.

The viewing audience comprises the individuals or groups of people occupying or using the properties, roads, footpaths and public open spaces that lie within the visual envelope or 'zone of theoretical visibility (ZTV)' of the site and proposal.

The Sensitivity of the viewing audience

The sensitivity of the viewing audience is assessed in terms of assessing the likely response of the viewing audience to change and understanding the value attached to views.

Likely response of the viewing audience to change

Appraising the likely response of the viewing audience to change is determined by assessing the occupation or activity of people experiencing the view at particular locations and the extent to which their interest or activity may be focussed on views of the surrounding landscape. This relies on a landscape architect's judgement in respect of visual amenity and the reaction of people who may be affected by a proposal. This should also recognise that people more susceptible to change generally include: residents at home, people engaged in outdoor recreation whose attention or interest is likely to be focussed on the landscape and on particular views; visitors to heritage assets or other important visitor attractions; and communities where views contribute to the wider landscape setting.

Value attached to views

The value or importance attached to particular views may be determined with respect to its popularity or numbers of people affected or reference to planning instruments such as viewshafts or view corridors. Important viewpoints are also likely to appear in guide books or tourist maps and may include facilities provided for its enjoyment. There may also be references to this in literature or art, which also acknowledge a level of recognition and importance.

Magnitude of Visual Change

The assessment of visual effects also considers the potential magnitude of change which will result from views of a proposed development. This takes account of the size or scale of the effect, the geographical extent of views and the duration of visual change, which may distinguish between temporary (often associated with construction)

and permanent effects where relevant. Preparation of any simulations of visual change to assist this process should be guided by best practice as identified by the NZILA[11].

Visual Simulations
As part of the assessment process, visual simulations have been prepared in accordance with NZILA Best Practice Guide: Visual Simulations BPG 10.2[12]. This has entailed taking digital photographs from each of the identified viewpoints and recording their GPS locations. Preparation of visual simulations required the preparation of a 3D model of the proposed bridge supplied by Kiwirail. The GPS coordinates for each viewpoint were also added to the model and using the same focal length parameters as that of the camera, an image of the 3D wire frame of the proposed landform was then generated for each viewpoint. This was then registered over the actual photograph, using known reference points to bring the two together. The surface of the proposed landform was then rendered to approximate the likely appearance of the Site.

When determining the overall level of visual effect, the nature of the viewing audience is considered together with the magnitude of change resulting from the proposed development. **Table 4** has been prepared to help guide this process:

Contributing Factors		Higher	Lower	Examples
The Viewing Audience (sensitivity)	**Ability to absorb change**	Views from dwellings and recreation areas where attention is typically focussed on the landscape.	Views from places of employment and other places where the focus is typically incidental to its landscape context. Views from transport corridors.	Dwellings, places of work, transport corridors, public tracks
	Value attached to views	Viewpoint is recognised by the community such as an important view shaft, identification on tourist maps or in art and literature. High visitor numbers.	Viewpoint is not typically recognised or valued by the community. Infrequent visitor numbers.	Acknowledged viewshafts, Lookouts
Magnitude of Change	**Size or scale**	Loss or addition of key features in the view. High degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Full view of the proposed development.	Most key features of views retained. Low degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture. Glimpse / no view of the proposed development.	- Higher contrast/ Lower contrast. - Open views, Partial views, Glimpse views (or filtered); No views (or obscured)
	Geographical extent	Front on views. Near distance views; Change visible across a wide area.	Oblique views. Long distance views. Small portion of change visible.	- Front or Oblique views. - Near distant, Middle distant and Long distant views
	Duration and reversibility	Permanent. Long term (over 15 years).	Transient / temporary. Short Term (0-5 years).	- Permanent (fixed), Transitory (moving)

Table 2: Determining the level of visual effects

Nature of Effects

In combination with assessing the level of effects, the landscape and visual effects assessment also considers the nature of effects in terms of whether this will be positive (beneficial) or negative (adverse) in the context within which it occurs. Neutral effects can also occur where landscape or visual change is benign.

It should also be noted that a change in a landscape does not, of itself, necessarily constitute an adverse landscape or visual effect. Landscape is dynamic and is constantly changing over time in both subtle and more dramatic transformational ways; these changes are both natural and human induced. What is important in managing landscape change is that adverse effects are avoided or sufficiently mitigated to ameliorate the effects of the change in land use. The aim is to provide a high amenity environment through appropriate design outcomes.

This assessment of the nature effects can be further guided by **Table 2** set out below:

Nature of effect	Use and Definition
Adverse (negative):	The activity would be out of scale with the landscape or at odds with the local pattern and landform which results in a reduction in landscape and / or visual amenity values

[11] Best Practice Guide: Visual Simulations BPG 10.2, NZILA

[12] Best Practice Guide: Visual Simulations BPG 10.2, NZILA

Neutral (benign):	The activity would be consistent with (or blend in with) the scale, landform and pattern of the landscape maintaining existing landscape and / or visual amenity values
Beneficial (positive):	The activity would enhance the landscape and / or visual amenity through removal or restoration of existing degraded landscape activities and / or addition of positive elements or features

Table 1: Determining the Nature of Effects

Cumulative Effects

This can include effects of the same type of development (e.g. bridges) or the combined effect of all past, present and approved future development[13] of varying types, taking account of both the permitted baseline and receiving environment. Cumulative effects can also be positive, negative or benign.

Cumulative Landscape Effects

Cumulative landscape effects can include additional or combined changes in components of the landscape and changes in the overall landscape character. The extent within which cumulative landscape effects are assessed can cover the entire landscape character area within which the proposal is located, or alternatively, the zone of visual influence from which the proposal can be observed.

Cumulative Visual Effects

Cumulative visual effects can occur in combination (seen together in the same view), in succession (where the observer needs to turn their head) or sequentially (with a time lapse between instances where proposals are visible when moving through a landscape). Further visualisations may be required to indicate the change in view compared with the appearance of the project on its own.

Determining the nature and level of cumulative landscape and visual effects should adopt the same approach as the project assessment in describing both the nature of the viewing audience and magnitude of change leading to a final judgement. Mitigation may require broader consideration which may extend beyond the geographical extent of the project being assessed.

Determining the Overall Level of Effects

The landscape and visual effects assessment conclude with an overall assessment of the likely level of landscape and visual effects. This step also takes account of the nature of effects and the effectiveness of any proposed mitigation. The process can be illustrated in Figure 2:

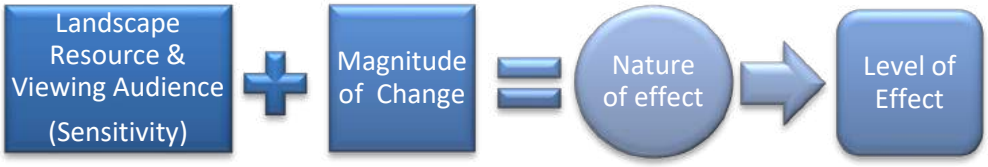


Figure 2: Assessment process

This step informs an overall judgement identifying what level of effects are likely to be generated as indicated in **Table 3** below. This table which can be used to guide the level of natural character, landscape and visual effects uses an adapted seven-point scale derived from Te Tangi A Te Manu.

Effect Rating	Use and Definition
Very High:	Total loss of key elements / features / characteristics, i.e. amounts to a complete change of landscape character and in views.
High:	Major modification or loss of most key elements / features / characteristics, i.e. little of the pre-development landscape character remains and a major change in views. *Concise Oxford English Dictionary Definition* *High: adjective- Great in amount, value, size, or intensity.*
Moderate- High:	Modifications of several key elements / features / characteristics of the baseline, i.e. the pre-development landscape character remains evident but materially changed and prominent in views.
Moderate:	Partial loss of or modification to key elements / features / characteristics of the baseline, i.e. new elements may be prominent in views but not necessarily uncharacteristic within the receiving landscape.

[13] The life of the statutory planning document or unimplemented resource consents.

	Concise Oxford English Dictionary Definition *Moderate: adjective- average in amount, intensity, quality or degree*
Low – Moderate:	Minor loss of or modification to one or more key elements / features / characteristics, i.e. new elements are not prominent within views or uncharacteristic within the receiving landscape.
Low:	Little material loss of or modification to key elements / features / characteristics. i.e. modification or change is not uncharacteristic or prominent in views and absorbed within the receiving landscape. *Concise Oxford English Dictionary Definition* *Low: adjective- **1.** Below average in amount, extent, or intensity.*
Very Low:	Negligible loss of or modification to key elements/ features/ characteristics of the baseline, i.e. approximating a 'no change' situation and a negligible change in views.

Table 3: Determining the overall level of landscape and visual effects

Determination of "minor"

Decision makers determining whether a resource consent application should be notified must also assess whether the effect on a person is less than minor[14] or an adverse effect on the environment is no more than minor[15]. Likewise, when assessing a non-complying activity, consent can only be granted if the s104D 'gateway test' is satisfied. This test requires the decision maker to be assured that the adverse effects of the activity on the environment will be 'minor' or not be contrary to the objectives and policies of the relevant planning documents.

These assessments will generally involve a broader consideration of the effects of the activity, beyond the landscape and visual effects. Through this broader consideration, guidance may be sought on whether the likely effects on the landscape or effects on a person are considered in relation to 'minor'. It must also be stressed that more than minor effects on individual elements or viewpoints does not necessarily equate to more than minor landscape effects. In relation to this assessment, moderate-low level effects would generally equate to 'minor' (see **Table 4**). Where low effects occur, it may be necessary to assess whether this is minor.

The third row highlights the word 'significant'. The term 'significant adverse effects' applies to particular RMA situations, namely as a threshold for the requirement to consider alternative sites, routes, and methods for Notices of Requirement under RMA s171(1)(b), the requirements to consider alternatives in AEEs under s6(1)(a) of the 4th Schedule. It may also be relevant to tests under other statutory documents such as for considering effects on natural character of the coastal environment under the NZ Coastal Policy Statement (NZCPS) Policy 13 (1)(b) and 15(b).

very low	low	low-mod	moderate	mod-high	high	very high

less than minor	minor	more than minor	
			significant[16]

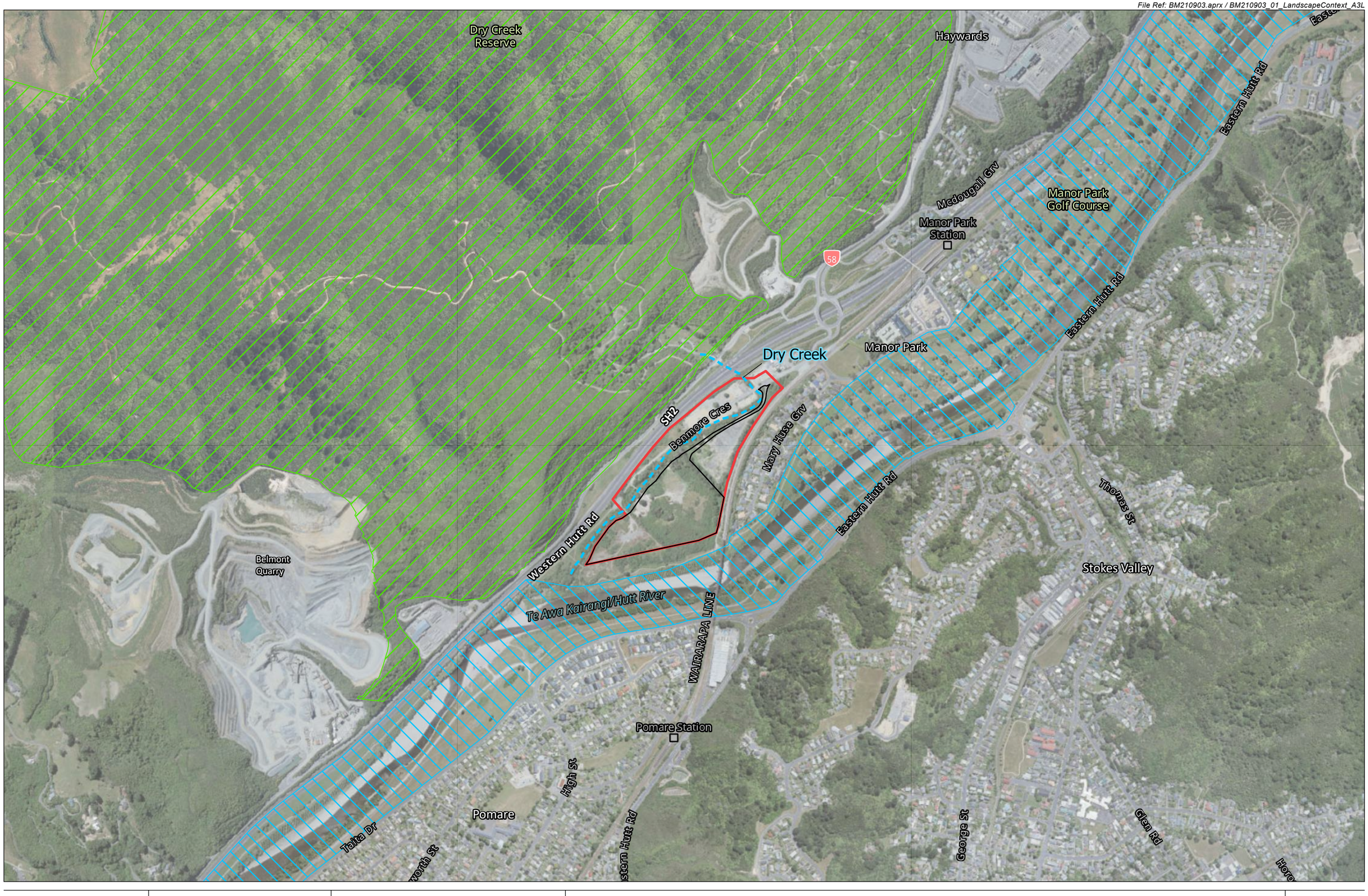
Table 4: Determining adverse effects for notification determination, non-complying activities and significance

[14] RMA, Section 95E

[15] RMA Section 95D

[16] To be used only about Policy 13(1)(b) and Policy 15(b) of the New Zealand Coastal Policy Statement (NZCPS), where the test is 'to avoid significant adverse effects'.

File Ref: BM210903.aprx / BM210903_01_LandscapeContext_A3L



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0 200 m

1:10,000 @ A3

Data Sources: Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors., Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, BML

Projection: NZGD 2000 New Zealand Transverse Mercator

LEGEND

- Dry Creek
- Special Amenity Landscapes
- Belmont Hills
- Hutt River/ Te Awa Kairangi
- Site Boundary
- Development site

RESOURCE RECOVERY PARK

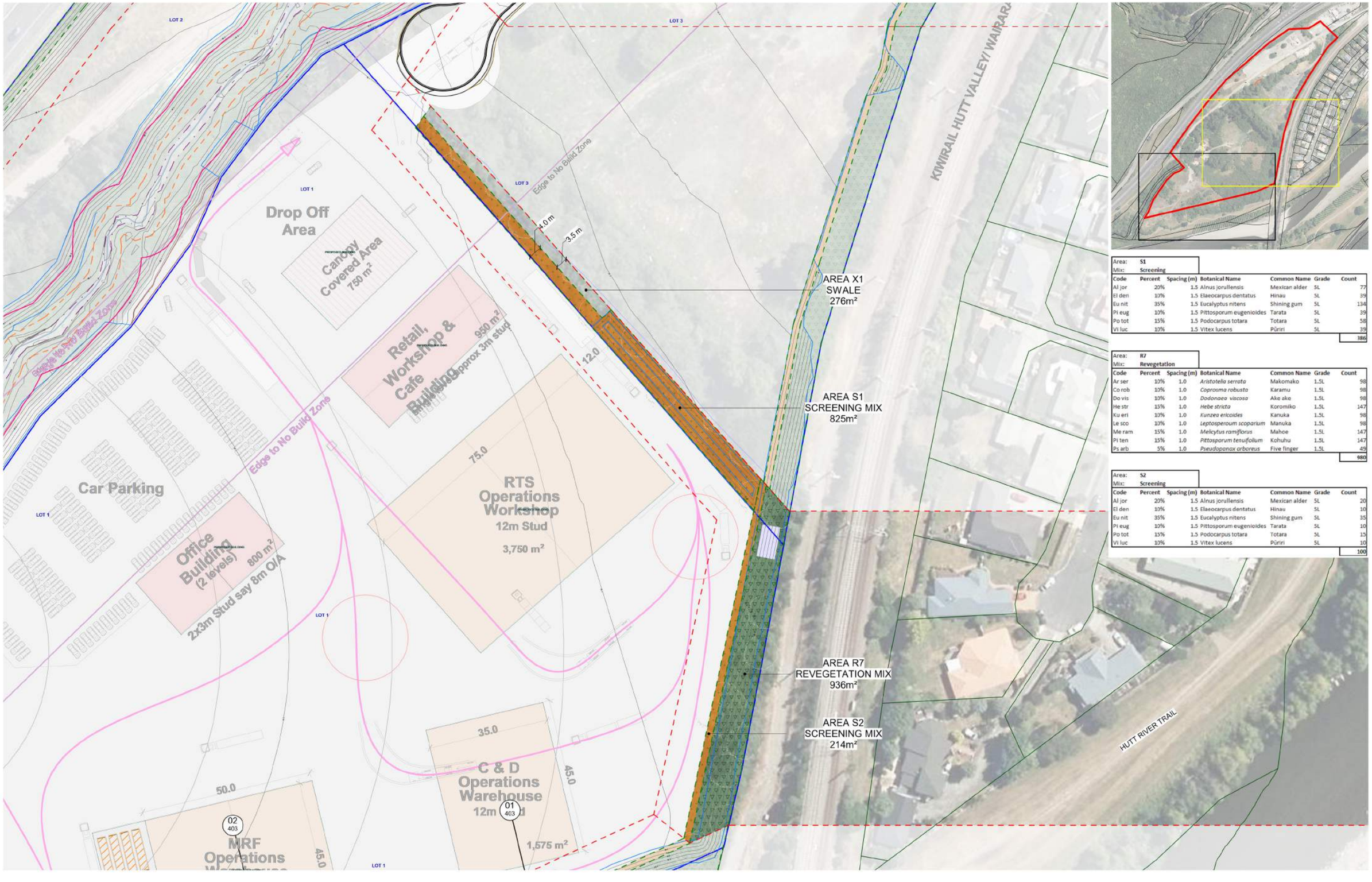
Site location and landscape context

Date: 06 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager:Bec.Ramsey@boffamiskell.co.nz | Drawn: KMa | Checked: BRa

Figure 1



Area:	S1					
Mix:	Screening					
Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Al jor	20%	1.5	Alnus jorullensis	Mexican alder	5L	77
El den	10%	1.5	Elaeocarpus dentatus	Hinau	5L	39
Eu nit	35%	1.5	Eucalyptus nitens	Shining gum	5L	134
Pi eug	10%	1.5	Pittosporum eugenioides	Tarata	5L	39
Po tot	15%	1.5	Podocarpus totara	Totara	5L	58
Vi luc	10%	1.5	Vitex lucens	Pūriri	5L	39
						386

Area:	R7					
Mix:	Revegetation					
Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristotelia serrata*	Makomako	1.5L	98
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	98
Do vis	10%	1.0	*Dodonaea viscosa*	Ake ake	1.5L	98
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	147
Ku eri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	98
Le sco	10%	1.0	*Leptosperoum scoparium*	Manuka	1.5L	98
Me ram	15%	1.0	*Melicytus ramiflorus*	Mahoe	1.5L	147
Pi ten	15%	1.0	*Pittosporum tenuifolium*	Kohuhu	1.5L	147
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	49
						980

Area:	S2					
Mix:	Screening					
Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Al jor	20%	1.5	Alnus jorullensis	Mexican alder	5L	20
El den	10%	1.5	Elaeocarpus dentatus	Hinau	5L	10
Eu nit	35%	1.5	Eucalyptus nitens	Shining gum	5L	35
Pi eug	10%	1.5	Pittosporum eugenioides	Tarata	5L	10
Po tot	15%	1.5	Podocarpus totara	Totara	5L	15
Vi luc	10%	1.5	Vitex lucens	Pūriri	5L	10
						100

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0 24 m

1:1,000 @ A3

Data Sources: Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors., Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, Spencer Holmes Limited, BML

Projection: NZGD 2000 New Zealand Transverse Mercator

LEGEND

RESOURCE RECOVERY PARK

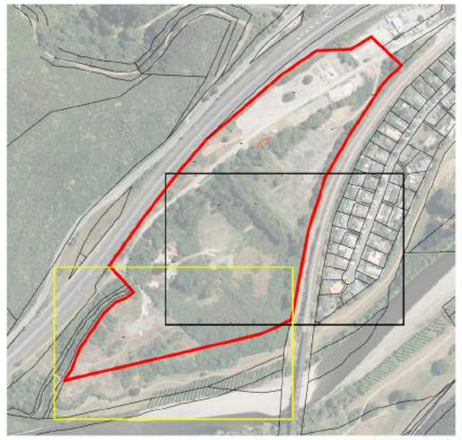
Proposed landscape plan

Date: 06 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager:Bec.Ramsey@boffamiskell.co.nz | Drawn: KMa | Checked: BRa

Figure 3.1



Area: S3
Mix: Screening

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Al jor	20%	1.5	Alnus jorullensis	Mexican alder	5L	55
El den	10%	1.5	Elaeocarpus dentatus	Hinau	5L	28
Eu nit	35%	1.5	Eucalyptus nitens	Shining gum	5L	96
Pi eug	10%	1.5	Pittosporum eugenioides	Tarata	5L	28
Po tot	15%	1.5	Podocarpus totara	Totara	5L	42
Vi luc	10%	1.5	Vitex lucens	Pūriri	5L	28
						277

Area: S4
Mix: Screening

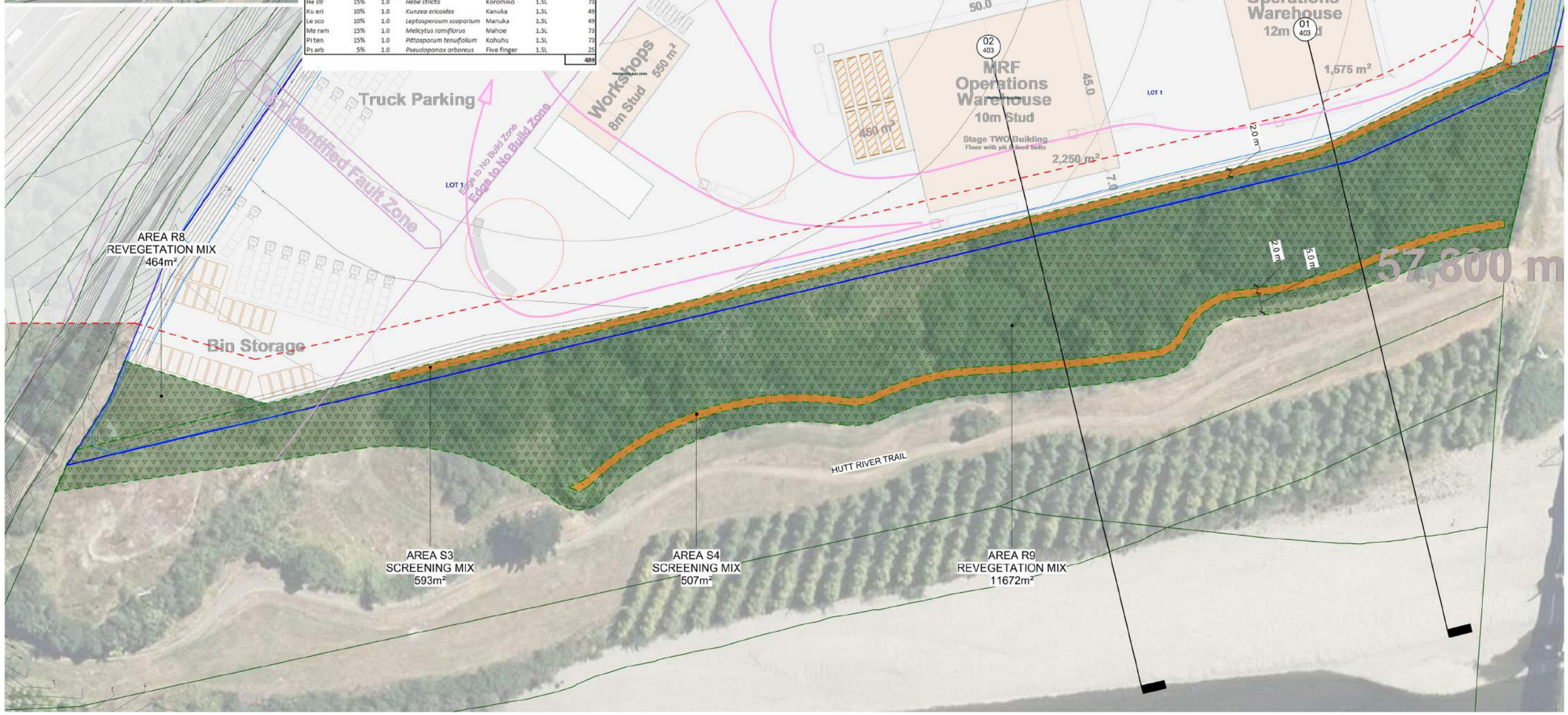
Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Al jor	20%	1.5	Alnus jorullensis	Mexican alder	5L	47
El den	10%	1.5	Elaeocarpus dentatus	Hinau	5L	24
Eu nit	35%	1.5	Eucalyptus nitens	Shining gum	5L	83
Pi eug	10%	1.5	Pittosporum eugenioides	Tarata	5L	24
Po tot	15%	1.5	Podocarpus totara	Totara	5L	36
Vi luc	10%	1.5	Vitex lucens	Pūriri	5L	24
						238

Area: R8
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristotelia serrata*	Makomako	1.5L	49
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	49
Do vis	10%	1.0	*Dodonaea viscosa*	Ake ake	1.5L	49
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	73
Ku eri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	49
Le sco	10%	1.0	*Leptosperoum scoparium*	Manuka	1.5L	49
Me ram	15%	1.0	*Melicytus ramiflorus*	Mahoe	1.5L	73
Pi ten	15%	1.0	*Pittosporum tenuifolium*	Kohuhu	1.5L	73
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	25
						489

Area: R9
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristotelia serrata*	Makomako	1.5L	1214
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	1214
Do vis	10%	1.0	*Dodonaea viscosa*	Ake ake	1.5L	1214
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	1821
Ku eri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	1214
Le sco	10%	1.0	*Leptosperoum scoparium*	Manuka	1.5L	1214
Me ram	15%	1.0	*Melicytus ramiflorus*	Mahoe	1.5L	1821
Pi ten	15%	1.0	*Pittosporum tenuifolium*	Kohuhu	1.5L	1821
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	607
						12140



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Projection: NZGD 2000 New Zealand Transverse Mercator

RESOURCE RECOVERY PARK

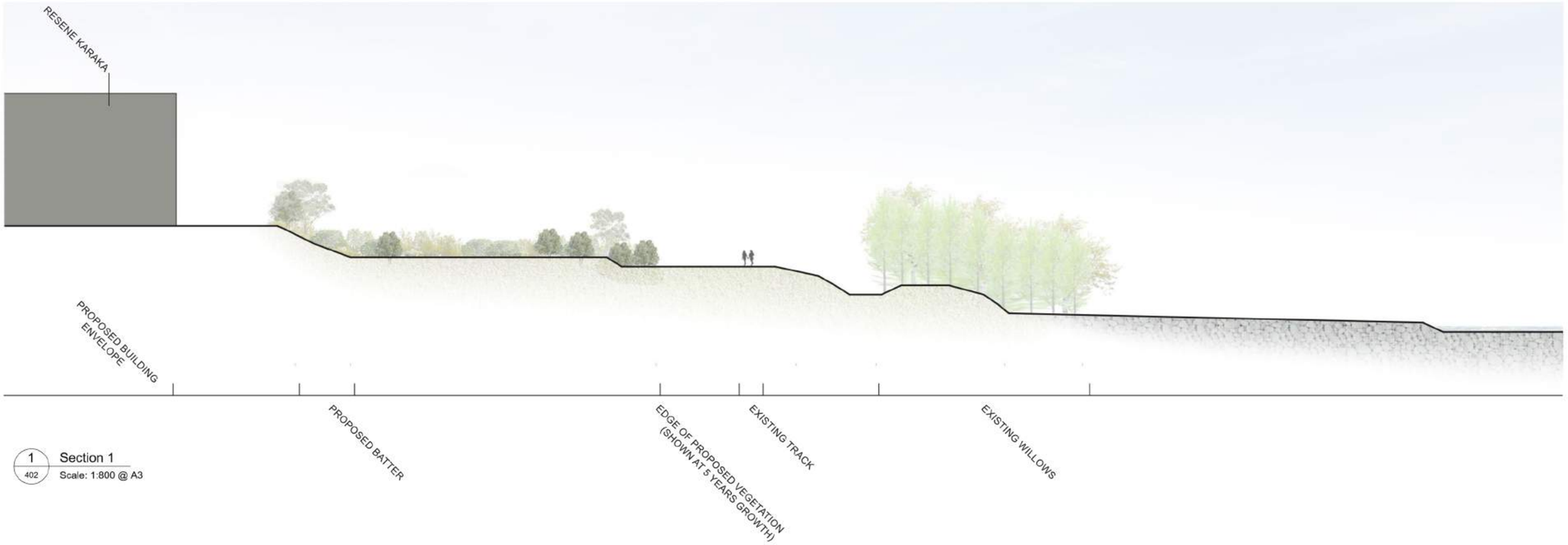
Proposed landscape plan

Date: 06 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager:Bec.Ramsey@boffamiskell.co.nz | Drawn: APr | Checked: BRa

Figure 3.2



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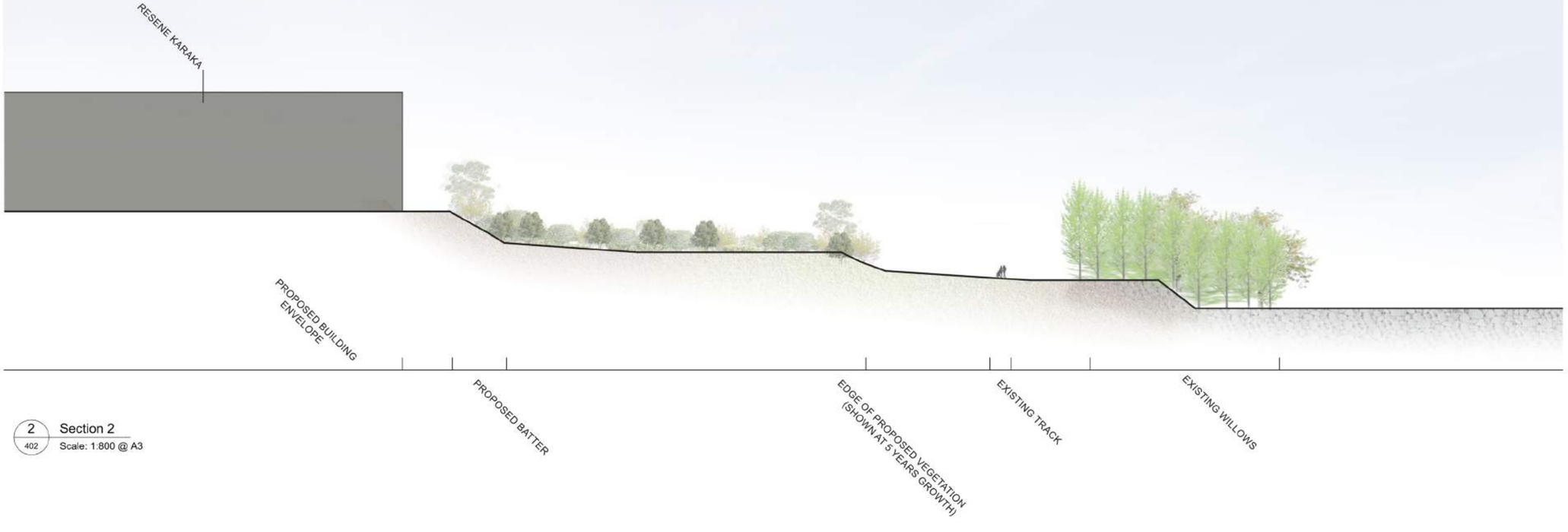

2 / 402 Section 2
Scale: 1:800 @ A3

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RESOURCE RECOVERY PARK

Landscape cross-sections

Date: 06 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: APr | Checked: BRa

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RESOURCE RECOVERY PARK DEVELOPMENT

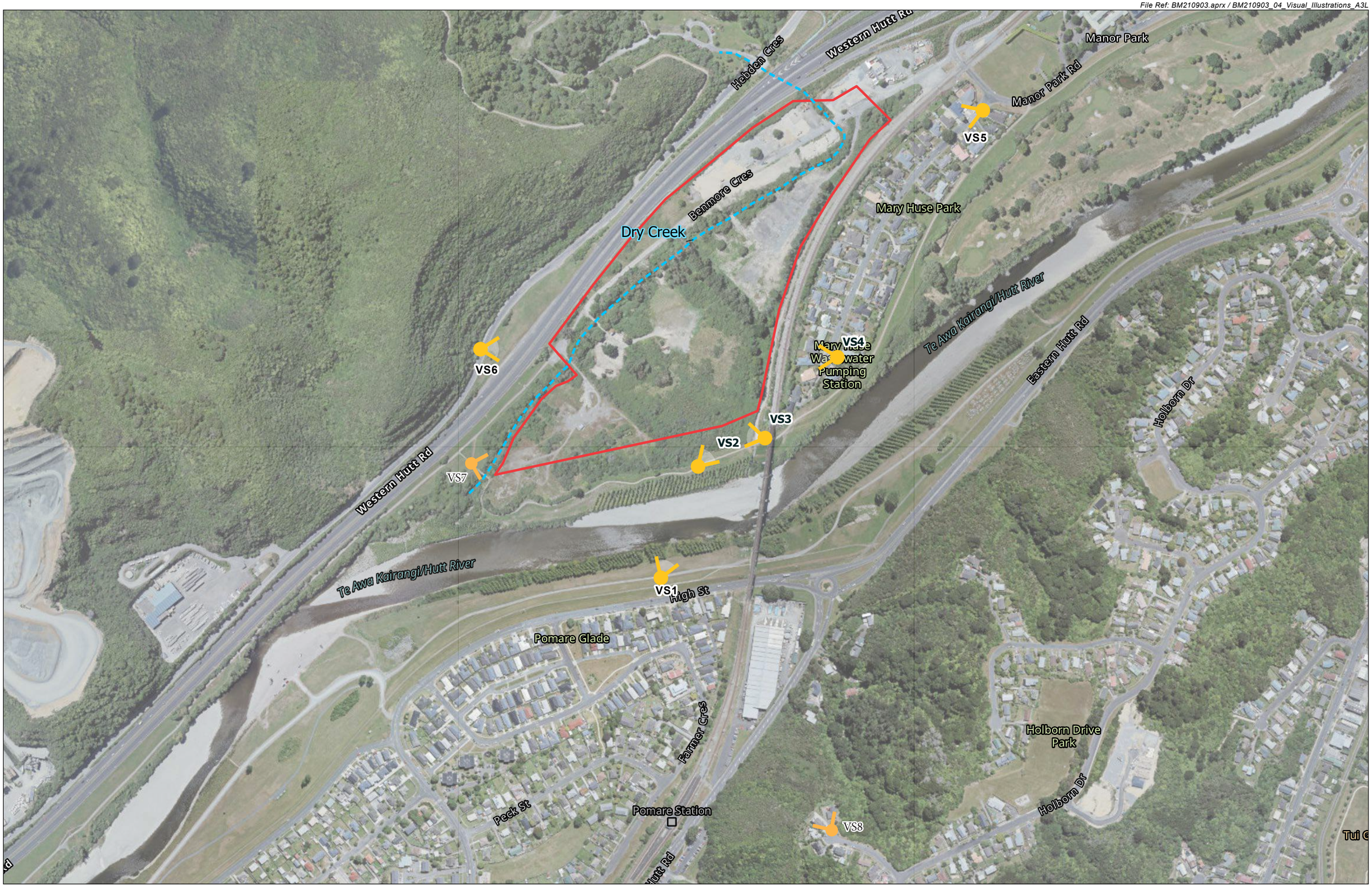
VISUAL ILLUSTRATIONS

6 DECEMBER 2022

Resource Recovery Park Development - Visual Illustrations

Contents

File Ref: BM210903.aprx / BM210903_04_Visual_Illustrations_A3L



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Projection: NZGD 2000 New Zealand Transverse Mercator

LEGEND

- Site Boundary
- Illustration Viewpoints
- Dry Creek

RESOURCE RECOVERY PARK DEVELOPMENT

Visual Illustrations

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager:Bec.Ramsey@boffamiskell.co.nz | Drawn: Dlr | Checked: BRa

Figure 1

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Viewpoint Details

NZTM Easting	: 1765224 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5440921 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 26.6m / 1.6m	Projection	: NA
Date of Photography	: 16:07pm 11 April 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS1: River Trail East Side Hutt River

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 2

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1765224 mE
NZTM Northing	: 5440921 mN
Elevation/Eye Height	: 26.6m / 1.6m
Date of Photography	: 16:07pm 11 April 2022 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 25°
Projection	: NA
Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS1: River Trail East Side Hutt River

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 3

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Viewpoint Details

NZTM Easting	: 1765224 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5440921 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 26.6m / 1.6m	Projection	: NA
Date of Photography	: 16:07pm 11 April 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS1: River Trail East Side Hutt River

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 4

Existing View

Proposed View

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1765278 mE	Horizontal Field of View	: 90°
NZTM Northing	: 5441082 mN	Vertical Field of View	: 30°
Elevation/Eye Height	: 28.6m / 1.6m	Projection	: Rectilinear
Date of Photography	: 2:22pm 4 September 2022 NZST	Image Reading Distance @ A3 is 20 cm	

Data Sources:

RESOURCE RECOVERY PARK DEVELOPMENT

VS2: River Trail West Side Hutt River

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 5

Existing View

Proposed View with Mitigation Planting (after 5 years)

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1765278 mE	Horizontal Field of View	: 90°
NZTM Northing	: 5441082 mN	Vertical Field of View	: 30°
Elevation/Eye Height	: 28.6m / 1.6m	Projection	: Rectilinear
Date of Photography	: 2:22pm 4 September 2022 NZST	Image Reading Distance @ A3 is 20 cm	

Data Sources:

RESOURCE RECOVERY PARK DEVELOPMENT

VS2: River Trail West Side Hutt River

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 6

Existing View

Proposed View

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1765374 mE	Horizontal Field of View	: 90°
NZTM Northing	: 5441123 mN	Vertical Field of View	: 30°
Elevation/Eye Height	: 28.6m / 1.6m	Projection	: Rectilinear
Date of Photography	: 2:46pm 4 September 2022 NZST	Image Reading Distance @ A3 is 20 cm	

Data Sources:

RESOURCE RECOVERY PARK DEVELOPMENT

VS3: River Trail West Side Hutt River

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 7

Existing View

Proposed View with Mitigation Planting (after 5 years)

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1765374 mE
NZTM Northing	: 5441123 mN
Elevation/Eye Height	: 28.6m / 1.6m
Date of Photography	: 2:46pm 4 September 2022 NZST

Horizontal Field of View	: 90°
Vertical Field of View	: 30°
Projection	: Rectilinear
Image Reading Distance @ A3 is 20 cm	

Data Sources:

RESOURCE RECOVERY PARK DEVELOPMENT

VS3: River Trail West Side Hutt River

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 8

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1765479 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5441240mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 28.8m / 1.6m	Projection	: NA
Date of Photography	: 2:16pm 4 September 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS4: Mary Huse Grove

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 9

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1765479 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5441240mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 28.8m / 1.6m	Projection	: NA
Date of Photography	: 2:16pm 4 September 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS4: Mary Huse Grove

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 10

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1765479 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5441240mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 28.8m / 1.6m	Projection	: NA
Date of Photography	: 2:16pm 4 September 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS4: Mary Huse Grove

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 11

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1765689 mE
NZTM Northing	: 5441597 mN
Elevation/Eye Height	: 30.8m / 1.6m
Date of Photography	: 10:27am 29 March 2022 NZST

Horizontal Field of View	: 74°
Vertical Field of View	: 25°
Projection	: NA
Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS5: Mary Huse Grove

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 12

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1765689 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5441597 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 30.8m / 1.6m	Projection	: NA
Date of Photography	: 10:27am 29 March 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS5: Mary Huse Grove

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: Dlr | Checked: BRa

Figure 13

Proposed View with Mitigation Planting (after 5 years)

Boffa Miskell

www.boffamiskell.co.nz

Viewpoint Details

NZTM Easting	: 1765689 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5441597 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 30.8m / 1.6m	Projection	: NA
Date of Photography	: 10:27am 29 March 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS5: Mary Huse Grove

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: Dlr | Checked: BRa

Figure 14

Existing View

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1764963 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5441252 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 33.7m / 1.6m	Projection	: NA
Date of Photography	: 3:20pm 11 April 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS6: Hebden Crescent

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 15

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1764963 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5441252 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 33.7m / 1.6m	Projection	: NA
Date of Photography	: 3:20pm 11 April 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS6: Hebden Crescent

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 16

Proposed View with Mitigation Planting (after 5 years), none visible

Boffa Miskell

www.boffamiskell.co.nz

Viewpoint Details

NZTM Easting	: 1764963 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5441252 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 33.7m / 1.6m	Projection	: NA
Date of Photography	: 3:20pm 11 April 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS6: Hebden Crescent

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 17

Existing View

Proposed View (Proposed Buildings not Visible)

Boffa Miskell

www.boffamiskell.co.nz

Viewpoint Details

NZTM Easting	: 1765374 mE	Horizontal Field of View	: 90°
NZTM Northing	: 5441123 mN	Vertical Field of View	: 30°
Elevation/Eye Height	: 28.6m / 1.6m	Projection	: Rectilinear
Date of Photography	: 2:46pm 4 September 2022 NZST	Image Reading Distance @ A3 is 20 cm	

Data Sources:

RESOURCE RECOVERY PARK DEVELOPMENT

VS7: River Trail Looking North

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 18

Existing View

Boffa Miskell

www.boffamiskell.co.nz

Viewpoint Details

NZTM Easting	: 1765477 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5440534 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 100.0m / 1.6m	Projection	: NA
Date of Photography	: 3:41pm 11 April 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS8: Aldersgate Grove

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 19

Boffa Miskell

www.boffamiskell.co.nz

Viewpoint Details

NZTM Easting	: 1765477 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5440534 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 100.0m / 1.6m	Projection	: NA
Date of Photography	: 3:41pm 11 April 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS8: Aldersgate Grove

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 20

Proposed View with Mitigation Planting (after 5 years)

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1765477 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5440534 mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 100.0m / 1.6m	Projection	: NA
Date of Photography	: 3:41pm 11 April 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS8: Aldersgate Grove

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 21

VISUAL ILLUSTRATIONS - METHODOLOGY

SITE VISIT & PHOTOGRAPHY

Site photographs were taken with a Canon digital SLR camera fitted with a 24-120mm focal length lens The lens was set at 24mm (74 degree field of view) to capture the maximum site context. A number of photos were taken at predetermined viewpoints, situated on public land. The locations of each viewpoint were fixed by GPS receiver built in to the camera.

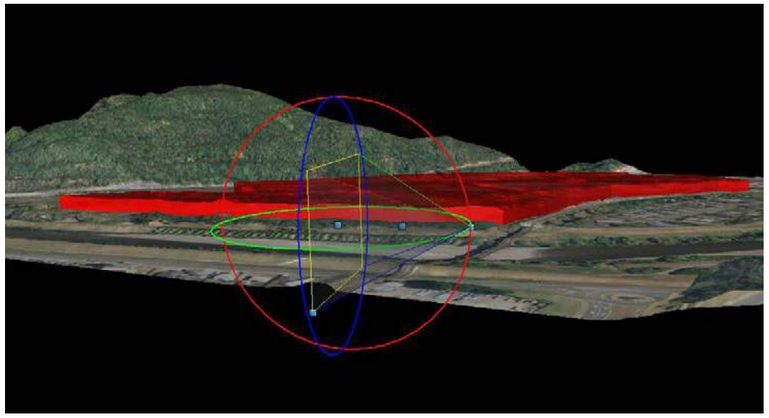
NZILA GUIDELINES & PANORAMA PREPARATION

The illustrations have been produced in accordance with the NZILA Best Practice Guidelines for Visual Simulations (BPG 10.2).

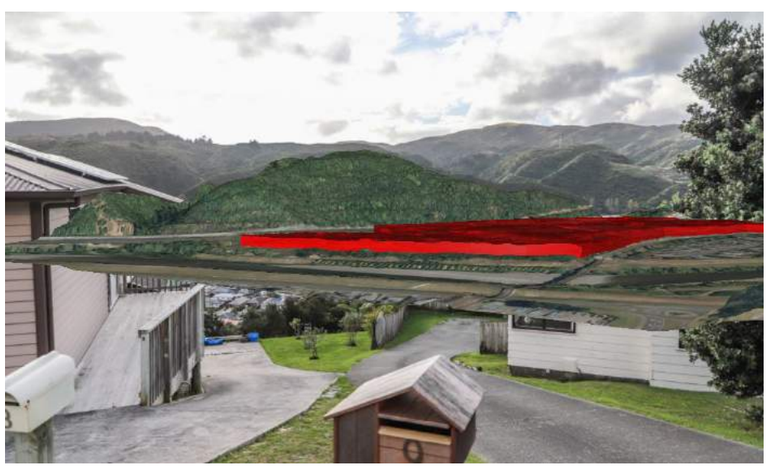
Camera lenses of different focal lengths capture images with differing fields of view. As can be seen below (derived from Fig 9 of the NZILA BPG), a photo taken with a 24mm lens will provide a horizontal field of view of 74° - using a 50mm lens will provide a "cropped" 40° version of the same view.

COMPOSITING

Virtual camera views were then created in 3D modelling software, and a combination of 3D contour data, Lidar and 3D engineering drawings turned on in each of these views.



These were then matched to the corresponding photograph, using identifiable features in the landscape and the characteristics of the camera to match the two together. The illustrations were then assembled using graphic design software.



RECOMMENDED IMAGE READING DISTANCE

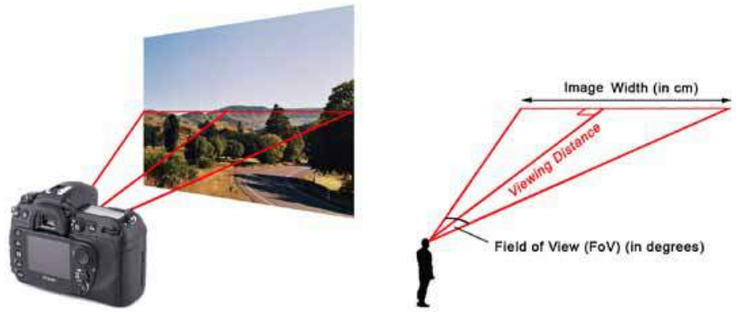
Viewing distance depends on the field of view of the image as well as the printed size. It is calculated for each view.

Views which have a field of view of 74° (24mm lens) should be viewed from a distance of 25 cm when printed at A3 where the reproduced width of the image is 375mm.

Views which have a field of view of 40° (50mm lens) should be viewed from a distance of 50 cm when printed at A3 where the reproduced width of the image is 365mm.

For other combinations of focul length and printed size the image reading distance is calculated for that image.

This will ensure that each illustration is viewed as if standing on-site at the actual camera location, and is in accordance with Section 7.11 of the NZILA BPG (reproduced below). Users are encouraged to print these pages on A3 transparency, go to the viewpoint and hold at the specified reading distance in order to verify the methodology.



Geometry of Image Reading Distance

About Boffa Miskell

Boffa Miskell is a leading New Zealand professional services consultancy with offices in Auckland, Hamilton, Tauranga, Wellington, Christchurch, Dunedin and Queenstown. We work with a wide range of local and international private and public sector clients in the areas of planning, urban design, landscape architecture, landscape planning, ecology, biosecurity, cultural heritage, graphics and mapping. Over the past four decades we have built a reputation for professionalism, innovation and excellence. During this time we have been associated with a significant number of projects that have shaped New Zealand's environment.

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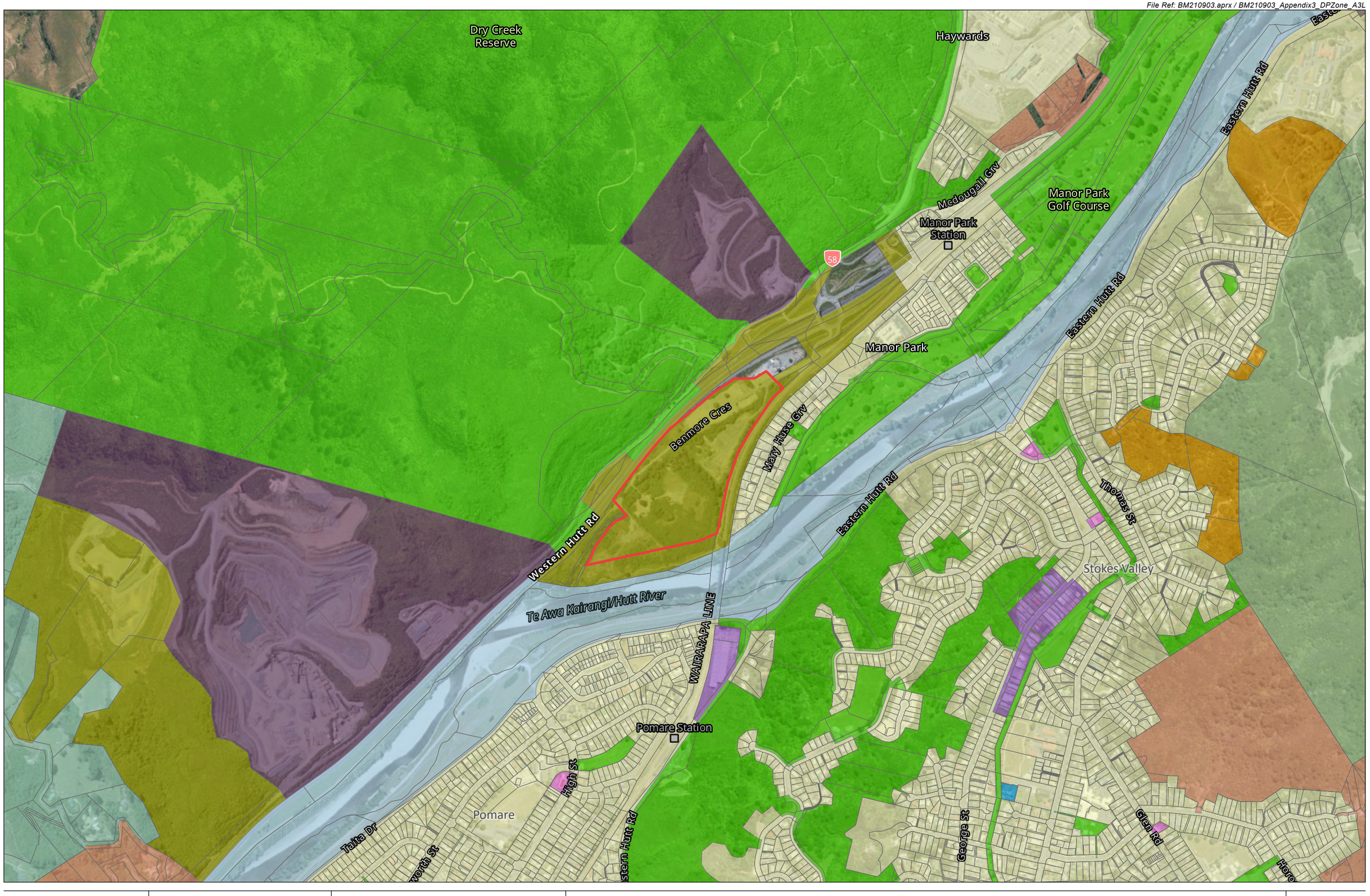
www.boffamiskell.co.nz

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



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0 200 m

1:10,000 @ A3

Data Sources: Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors., Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, HCC

Projection: NZGD 2000 New Zealand Transverse Mercator

LEGEND

- Site Boundary
- Primary Parcels
- Community Iwi
- Extraction
- General Business
- General Recreation
- General Residential
- General Rural
- Hill Residential
- Landscape Protection
- Passive Recreation
- River Recreation
- Rural Residential
- Suburban Commercial

RESOURCE RECOVERY PARK

District Plan Zones

Date: 06 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager:Bec.Ramsey@boffamiskell.co.nz | Drawn: KMa | Checked: BRa

Appendix 3

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Viewpoint Details

NZTM Easting	: 1765479 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5441240mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 28.8m / 1.6m	Projection	: NA
Date of Photography	: 2:16pm 4 September 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS4: Mary Huse Grove

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 9

Boffa Miskell

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Viewpoint Details

NZTM Easting	: 1765479 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5441240mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 28.8m / 1.6m	Projection	: NA
Date of Photography	: 2:16pm 4 September 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS4: Mary Huse Grove

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 10

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Viewpoint Details

NZTM Easting	: 1765479 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5441240mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 28.8m / 1.6m	Projection	: NA
Date of Photography	: 2:16pm 4 September 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS4: Mary Huse Grove

Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 10A

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Viewpoint Details

NZTM Easting	: 1765479 mE	Horizontal Field of View	: 74°
NZTM Northing	: 5441240mN	Vertical Field of View	: 25°
Elevation/Eye Height	: 28.8m / 1.6m	Projection	: NA
Date of Photography	: 2:16pm 4 September 2022 NZST	Image Reading Distance @ A3 is 25 cm	

Data Sources:

DRAFT

RESOURCE RECOVERY PARK DEVELOPMENT

VS4: Mary Huse Grove

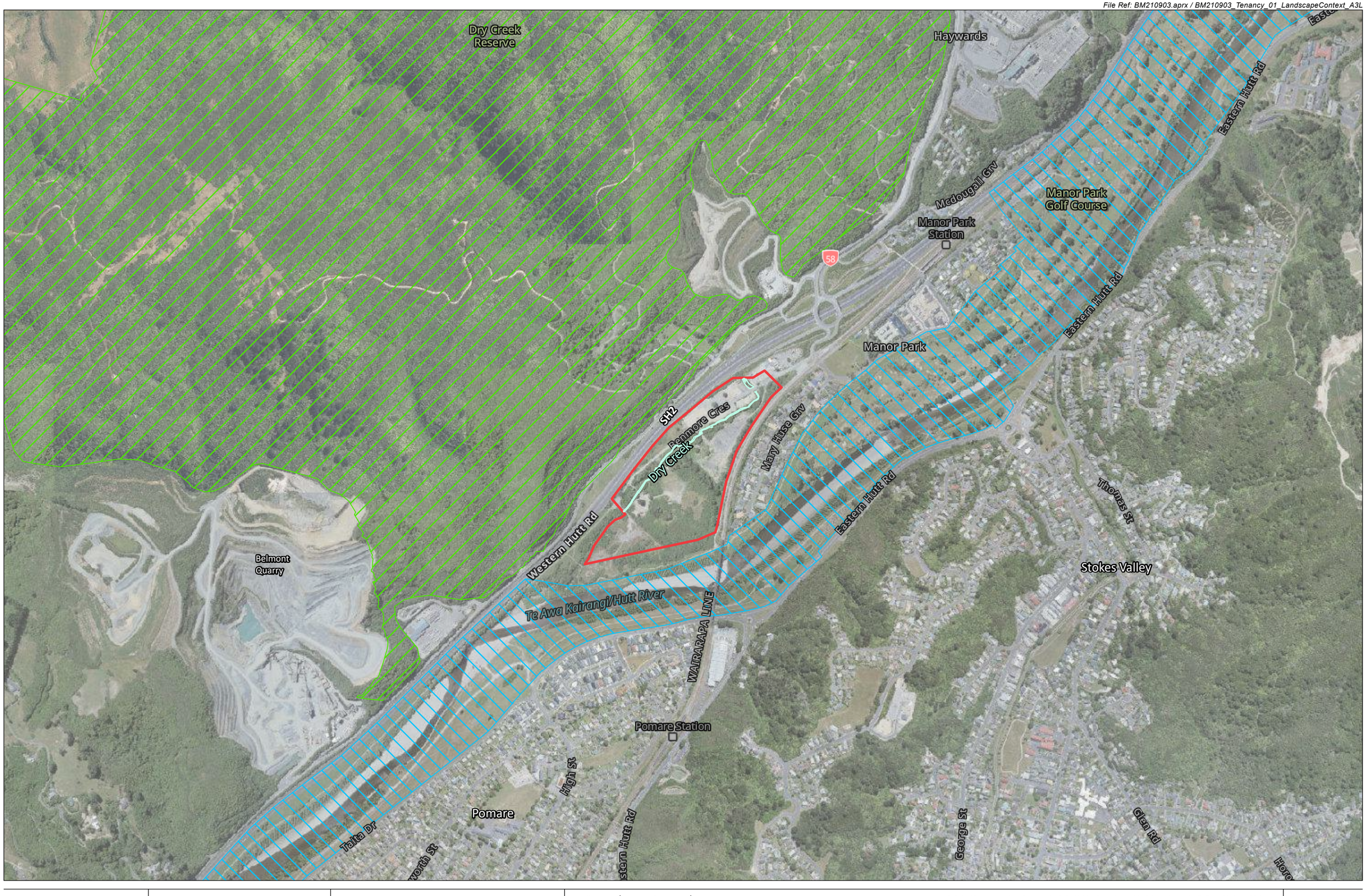
Date: 6 December 2022 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager: Bec.Ramsey@boffamiskell.co.nz | Drawn: DIr | Checked: BRa

Figure 11

File Ref: BM210903.aprx / BM210903_Tenancy_01_LandscapeContext_A3L



Boffa Miskell

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0 200 m

1:10,000 @ A3

Data Sources: Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors., Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, BML

Projection: NZGD 2000 New Zealand Transverse Mercator

LEGEND

- Special Amenity Landscapes
- Belmont Hills
- Hutt River/ Te Awa Kairangi
- Site Boundary

TE RANGIHAEATA TENANCY DEVELOPMENT APPLICATION

Site location and landscape context

Date: 11 January 2023 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager:Bec.Ramsey@boffamiskell.co.nz | Drawn: KMa | Checked: BRa

Map 1

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0 40 m

1:3,000 @ A3

Data Sources: Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors., Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, Spencer Holmes Limited

Projection: NZGD 2000 New Zealand Transverse Mercator

LEGEND

- Dry Creek
- Road
- Batter
- Edge to No Build Zone (indicative)
- Proposed Tenancy Areas (indicative)
- Site Boundary
- Parcels

TE RANGIHAEATA TENANCY DEVELOPMENT APPLICATION

Proposed Development

Date: 12 January 2023 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager:Bec.Ramsey@boffamiskell.co.nz | Drawn: KMa | Checked: BRa

Map 2

File Ref: 20230112_Updated_plan_spec\201.png

Area: R1
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristoteliaserrata*	Makomako	1.5L	92
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	92
Do vis	10%	1.0	*Dodonaea viscosa*	Akeake	1.5L	92
He str	15%	1.0	*Hebestricta*	Koromiko	1.5L	138
Ku eri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	92
Le sco	10%	1.0	*Leptospermum scoparium*	Manuka	1.5L	92
Me ram	15%	1.0	*Melicytus ramiflorus*	Mahoe	1.5L	138
Pi ten	15%	1.0	*Pittosparum tenuifolium*	Kohuhu	1.5L	138
Psarb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	46
						920

Area: R2
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristotelia serrata*	Makomako	1.5L	71
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	71
Do vis	10%	1.0	*Dodonaea viscosa*	Ake ake	1.5L	71
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	106
Ku eri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	71
Le sco	10%	1.0	*Leptospermum scoparium*	Manuka	1.5L	71
Me ram	15%	1.0	*Melicytus ramiflorus*	Mahoe	1.5L	106
Pi ten	15%	1.0	*Pittosporumtenuifolium*	Kohuhu	1.5L	106
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	36
						709

Area: R3
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristotelio serrata*	Makomako	1.5L	229
Co rob	10%	1.0	*Coprosmarobusta*	Karamu	1.5L	229
Do vis	10%	1.0	*Dodonaea viscosa*	Ake ake	1.5L	229
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	343
Ku eri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	229
Le sco	10%	1.0	*Leptospermum scoparium*	Manuka	1.5L	229
Me ram	15%	1.0	*Melicytus ramiflarus*	Mahoe	1.5L	343
Pi ten	15%	1.0	*Pittasparum tenuifolium*	Kohuhu	1.5L	343
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five fi nger	1.5L	115
						2289

Area: R4
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristotelia serrata*	Makomako	1.5L	162
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	162
Do vis	10%	1.0	*Dodonaea viscosa*	Ake ake	1.5L	162
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	243
Ku eri	10%	1.0	*Kunzea ericaides*	Kanuka	1.5L	162
Le sco	10%	1.0	*Leptosperaum scoparium*	Manuka	1.5L	162
Me ram	15%	1.0	*Melicytus ramiflorus*	Mahoe	1.5L	243
Pi ten	15%	1.0	*Pittosporum tenuifolium*	Kohuhu	1.5L	243
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five fi nger	1.5L	81
						1620

Area: R5
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristotelio serrata*	Makomako	1.5L	171
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	171
Do vis	10%	1.0	*Dodonaea viscosa*	Akeake	1.5L	171
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	256
Ku eri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	171
Le sco	10%	1.0	*Leptosperaum scoparium*	Manuka	1.5L	171
Me ram	15%	1.0	*Melicytusramiflarus*	Mahoe	1.5L	256
Pi ten	15%	1.0	*Pittosporum tenuifolium*	Kohuhu	1.5L	256
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	86
						1709

Area: R6
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Arser	10%	1.0	*Aristotelia serrata*	Makomako	1.5L	171
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	171
Do vis	10%	1.0	*Dodonaea viscosa*	Akeake	1.5L	171
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	256
Ku eri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	171
Le sco	10%	1.0	*Leptosperaum scoparium*	Manuka	1.5L	171
Meram	15%	1.0	*Melicytusramiflarus*	Mahoe	1.5L	256
Pi ten	15%	1.0	*Pittosporum tenuifolium*	Kohuhu	1.5L	256
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	86
						1709

Area: R7
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristotelia serrata*	Makomako	1.5L	98
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	98
Do vis	10%	1.0	*Dodonaea viscosa*	Akeake	1.5L	98
He str	15%	1.0	*Hebestricta*	Koromiko	1.5L	147
Ku eri	10%	1.0	*Kunzeaericoides*	Kanuka	1.5L	98
Le sco	10%	1.0	*Leptosperaum scoparium*	Manuka	1.5L	98
Me ram	15%	1.0	*Melicytus romiflarus*	Mahoe	1.5L	147
Pi ten	15%	1.0	*Pittosporum tenulfolium*	Kohuhu	1.5L	147
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	49
						980

Area: R8
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristotelia serrata*	Makomako	1.5L	49
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	49
Do vis	10%	1.0	*Dodonaea viscosa*	Ake ake	1.5L	49
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	73
Ku eri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	49
Le sco	10%	1.0	*Leptosperaum scoparium*	Manuka	1.5L	49
Me ram	15%	1.0	*Melicytus romiflarus*	Mahoe	1.5L	73
Pi ten	15%	1.0	*Pittosporum tenulfolium*	Kohuhu	1.5L	73
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	25
						489

Area: R9
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristoteliaserrata*	Makomako	1.5L	1214
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	1214
Do vis	10%	1.0	*Dodonaea viscosa*	Akeake	1.5L	1214
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	1821
Kueri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	1214
Le sco	10%	1.0	*Leptosperoum scoparium*	Manuka	1.5L	1214
Me ram	15%	1.0	*Melicytusramiflorus*	Mahoe	1.5L	1821
Pi ten	15%	1.0	*Pittosparum tenuifolium*	Kohuhu	1.5L	1821
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	607
						12140

Area: R10
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristoteliaserrata*	Makomako	1.5L	155
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	155
Do vis	10%	1.0	*Dodonaea viscosa*	Akeake	1.5L	155
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	233
Kueri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	155
Le sco	10%	1.0	*Leptosperoum scoparium*	Manuka	1.5L	155
Me ram	15%	1.0	*Melicytus ramiflorus*	Mahoe	1.5L	233
Pi ten	15%	1.0	*Pittosporum tenuifolium*	Kohuhu	1.5L	233
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	78
						1552

Area: R11
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristoteliaserrata*	Makomako	1.5L	106
Co rob	10%	1.0	*Coprosmarobusta*	Karamu	1.5L	106
Do vis	10%	1.0	*Dodonaea viscosa*	Ake ake	1.5L	106
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	159
Ku eri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	106
Le sco	10%	1.0	*Leptosperoum scoparium*	Manuka	1.5L	106
Me ram	15%	1.0	*Melicytus ramiflarus*	Mahoe	1.5L	159
Pi ten	15%	1.0	*Pittosparumtenuifolium*	Kohuhu	1.5L	159
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	53
						1060

Area: R12
Mix: Revegetation

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1.0	*Aristoteliaserrata*	Makomako	1.5L	77
Co rob	10%	1.0	*Coprosma robusta*	Karamu	1.5L	77
Do vis	10%	1.0	*Dodonaea viscosa*	Akeake	1.5L	77
He str	15%	1.0	*Hebe stricta*	Koromiko	1.5L	115
Ku eri	10%	1.0	*Kunzea ericoides*	Kanuka	1.5L	77
Le sco	10%	1.0	*Leptosperaum scoparium*	Manuka	1.5L	77
Me ram	15%	1.0	*Melicytus ramiflorus*	Mahoe	1.5L	115
Pi ten	15%	1.0	*Pittosparum tenuifolium*	Kohuhu	1.5L	115
Ps arb	5%	1.0	*Pseudopanax arboreus*	Five finger	1.5L	39
						769

Area: S1
Mix: Screening

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Al jor	20%	1.5	Alnus jorullensis	Mexican alder	5L	77
El den	10%	1.5	Elaeocarpus dentatus	Hinau	5L	39
Eu nit	35%	1.5	Eucalyptus nitens	Shining gum	5L	134
Pi eug	10%	1.5	Pittosporum eugenioides	Tarata	5L	39
Po tot	15%	1.5	Podocarpus totara	Totara	5L	58
Vi luc	10%	1.5	Vitex lucens	Pūriri	5L	39
						386

Area: S2
Mix: Screening

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Al jor	20%	1.5	Alnus jorullensis	Mexican alder	5L	20
El den	10%	1.5	Elaeocarpus dentatus	Hinau	5L	10
Eu nit	35%	1.5	Eucalyptus nitens	Shining gum	5L	35
Pi eug	10%	1.5	Pittosporum eugenioides	Tarata	5L	10
Po tot	15%	1.5	Podocarpus totara	Totara	5L	15
Vi luc	10%	1.5	Vitex lucens	Pūriri	5L	10
						100

Area: S3
Mix: Screening

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Al jor	20%	1.5	Alnus jorullensis	Mexican alder	5L	55
El den	10%	1.5	Elaeocarpus dentatus	Hinau	5L	28
Eu nit	35%	1.5	Eucalyptusnitens	Shining gum	5L	96
Pi eug	10%	1.5	Pittosporum eugenioides	Tarata	5L	28
Po tot	15%	1.5	Podocarpus totara	Totara	5L	42
Vi luc	10%	1.5	Vitex lucens	Pūriri	5L	28
						277

Area: S4
Mix: Screening

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Al jor	20%	1.5	Alnus jorullensis	Mexicanalder	5L	47
El den	10%	1.5	Elaeocarpus dentatus	Hinau	5L	24
Eu nit	35%	1.5	Eucalyptus nitens	Shining gum	5L	83
Pi eug	10%	1.5	Pittosporum eugenioides	Tarata	5L	24
Po tot	15%	1.5	Podocarpus totara	Totara	5L	36
Vi luc	10%	1.5	Vitex lucens	Pūriri	5L	24
						238

Area: S5
Mix: Screening

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Al jor	20%	1.5	Alnus jorullensis	Mexicanalder	5L	43
El den	10%	1.5	Elaeocarpus dentatus	Hinau	5L	22
Eu nit	35%	1.5	Eucalyptusnitens	Shining gum	5L	76
Pi eug	10%	1.5	Pittosporum eugenioides	Tarata	5L	22
Po tot	15%	1.5	Podocarpus totara	Totara	5L	33
Vi luc	10%	1.5	Vitex lucens	Pūriri	5L	22
						218

Area: S6
Mix: Screening

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Al jor	20%	1.5	Alnus jorullensis	Mexicanalder	5L	26
El den	10%	1.5	Elaeocarpus dentatus	Hinau	5L	13
Eu nit	35%	1.5	Eucalyptus nitens	Shining gum	5L	45
Pi eug	10%	1.5	Pittosporum eugenioides	Tarata	5L	13
Po tot	15%	1.5	Podocarpus totara	Totara	5L	20
Vi luc	10%	1.5	Vitex lucens	Pūriri	5L	13
						130

Area: W1
Mix: Riparian

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1	*Aristotelia serrata*	Makomako	1.5L	92
Ca vir	10%	1	*Carex virgata*	Pukio	1.5L	92
Co rob	10%	1	*Coprosma robusta*	Karamu	1.5L	92
Co aus	10%	1	*Cordyline oustrolis*	Tī kōuka	1.5L	92
He ang	10%	1	*Haherio angustifolia*	Narrow-leaved la	1.5L	92
Le sco	10%	1	*Leptospermum scoparium*	Mānuka	1.5L	92
My lae	10%	1	*Myoporum laetum*	Ngaio	1.5L	92
Ph ten	10%	1	*Phormiumtenax*	Harakeke	1.5L	92
Pi eug	10%	1	*Pittosparum eugeniaides*	Tarata	1.5L	92
Pl reg	10%	1	*Plogianthusregius*	Manatu	1.5L	92
						920

Area: W2
Mix: Riparian

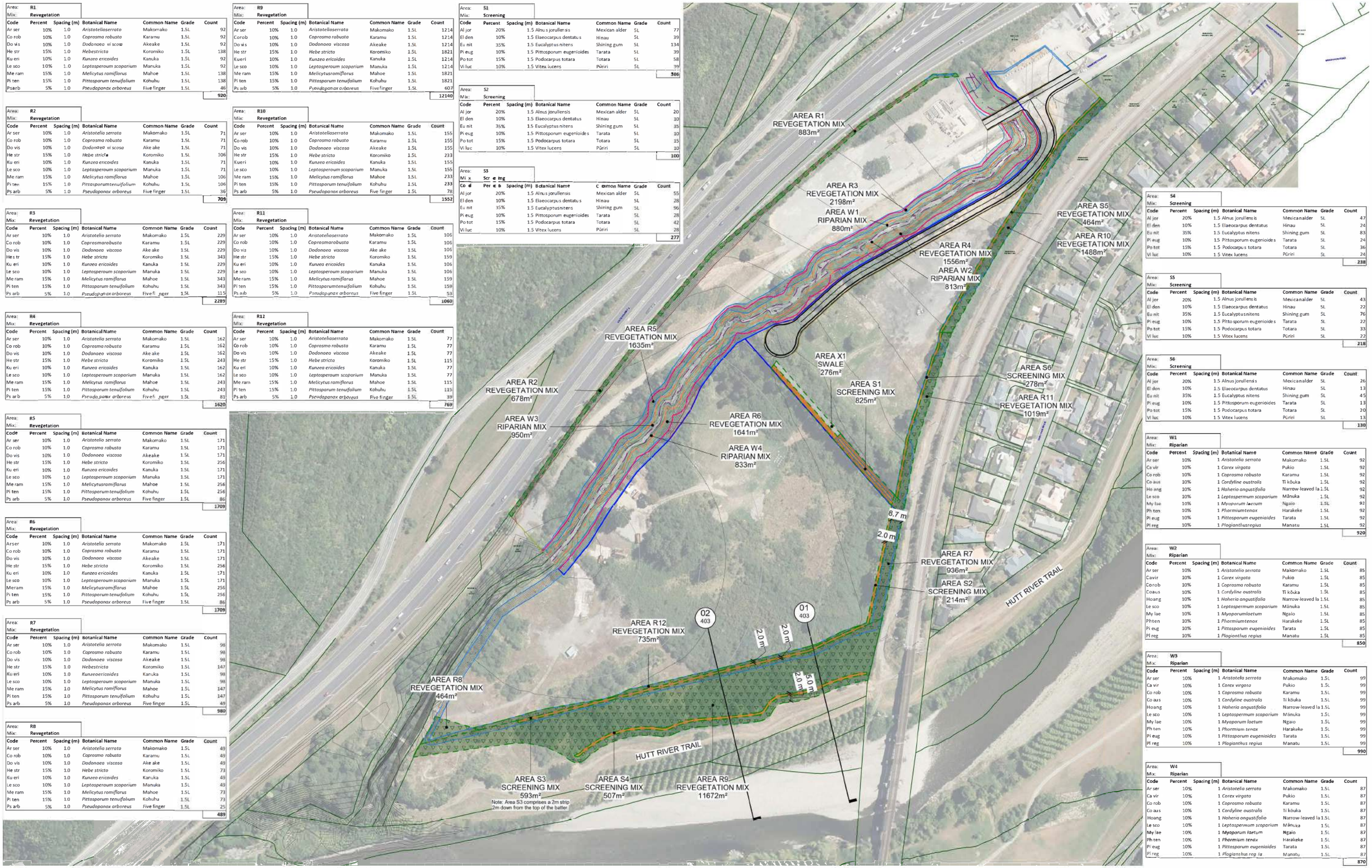
Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1	*Aristotelio serrata*	Makomako	1.5L	85
Cavir	10%	1	*Carex virgata*	Pukio	1.5L	85
Co rob	10%	1	*Coprosma robusta*	Karamu	1.5L	85
Coaus	10%	1	*Cordyline oustralis*	Ti kōuka	1.5L	85
Hoang	10%	1	*Hoheria angustifolia*	Narrow-leaved la	1.5L	85
Le sco	10%	1	*Leptospermum scoparium*	Mānuka	1.5L	85
My lae	10%	1	*Myoporumlaetum*	Ngaio	1.5L	85
Ph ten	10%	1	*Phormiumtenax*	Harakeke	1.5L	85
Pi eug	10%	1	*Pittosparum eugeniaides*	Tarata	1.5L	85
Pl reg	10%	1	*Plagianthus regius*	Manatu	1.5L	85
						850

Area: W3
Mix: Riparian

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1	*Aristotela serrata*	Makomako	1.5L	99
Ca vir	10%	1	*Carex virgata*	Pukio	1.5L	99
Co rob	10%	1	*Coprosma robusta*	Karamu	1.5L	99
Co aus	10%	1	*Cordyline oustralis*	Ti kōuka	1.5L	99
Hoang	10%	1	*Haheria angustifolia*	Narrow-leaved la	1.5L	99
Le sco	10%	1	*Leptospermum scoparium*	Mānuka	1.5L	99
My lae	10%	1	*Myoporum laetum*	Ngaio	1.5L	99
Ph ten	10%	1	*Phormium tenax*	Harakeke	1.5L	99
Pi eug	10%	1	*Pittosporum eugenioides*	Tarata	1.5L	99
Pl reg	10%	1	*Plagianthus regius*	Manatu	1.5L	99
						990

Area: W4
Mix: Riparian

Code	Percent	Spacing (m)	Botanical Name	Common Name	Grade	Count
Ar ser	10%	1	*Aristotelia serrata*	Makomako	1.5L	87
Ca vir	10%	1	*Carex virgata*	Pukio	1.5L	87
Co rob	10%	1	*Coprosma robusta*	Karamu	1.5L	87
Co aus	10%	1	*Cordyline oustralis*	Ti kōuka	1.5L	87
Hoang	10%	1	*Hoheria angustifolia*	Narrow-leaved la	1.5L	87
Le sco	10%	1	*Leptospermum scoparium*	Mānuka	1.5L	87
My lae	10%	1	*Myoporum laetum*	Ngaio	1.5L	87
Ph ten	10%	1	*Phormium tenax*	Harakeke	1.5L	87
Pi eug	10%	1	*Pittosparum eugeniaides*	Tarata	1.5L	87
Pl reg	10%	1	*Plogianthus reg ia*	Manatu	1.5L	87
						870



Boffa Miskell

www.boffamiskell.co.nz

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Data Sources: Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors., Eagle Technology, Land Information New Zealand, GEBCO, Community maps contributors, BML

Projection: NZGD 2000 New Zealand Transverse Mercator

TE RANGIHAEATA TENANCY DEVELOPMENT APPLICATION

Proposed landscape plan

Date: 12 January 2023 | Revision: 0

Plan prepared for Richard Burell by Boffa Miskell Limited

Project Manager:Bec.Ramsey@boffamiskell.co.nz | Drawn: APr | Checked: BRa

Map 3

Appendix 5: Faultline Study – Tonkin and Taylor

Tonkin+Taylor

Job No: 1015081
7 July 2021

Rosco Investments
111 Brougham Street
Mt Victoria,
Wellington 6011

Attention: Richard Burrell

Dear Richard

Te Rangihaeata / Manor Park Development
Wellington Fault Investigation Report

1 Introduction

Tonkin & Taylor Ltd (T+T) have undertaken an investigation at the proposed Manor Park development site to constrain the likely location of the Wellington Fault. This work has been completed in accordance with our letter of engagement of 7 August 2020 and variation of 3 September 2020.

The Manor Park development site is located within the Hutt City Council (HCC) 'Wellington Fault Special Study Area' as presented in hazard maps of the HCC District Plan. A primary geotechnical issue concerning future development of the site is the proximity to the Wellington Fault, and the consequences of fault rupture. Specifically:

a Fault rupture presents a risk of severe damage to future building development; and

b Rule 14H2 of the HCC District Plan states: *'All structures and buildings on any site where the whole site or a portion of the site falls within the Wellington Fault Special Study Area'*, is a restricted discretionary activity i.e., requires resource consent.

Clause 14H 1.1.1 states: *'Subdivision and development will be managed to ensure that no building is constructed within 20 metres of the fault line, and that no subdivision results in an allotment being created which is unusable for development purposes. An engineering report will be required prior to any development, to ensure that any buildings proposed are not within 20 metres of the fault line. The level of investigation required will depend on the particular circumstances and this could include a range of methods necessary to determine the position of the fault. The buildings will need to be constructed to New Zealand Building Code specifications. This will ensure that buildings are constructed in a safe manner and at a safe distance from the area susceptible to permanent ground deformation.'*

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This report presents the results of the investigation and defines a zone depicting the likely location of the Wellington Fault through the site for the purposes of meeting local council regulatory requirements. Other District Plan rules may also be relevant to the proposal however we have only considered the requirements in relation to the Wellington Fault Special Study Area. Also, other geotechnical considerations e.g., liquefaction, lateral spreading, settlement, bearing capacity etc., have not been considered as part of this report, but are expected to be considered during next stages.

2 Previous fault investigations and mapping

The following section presents a review of previous investigations of the Wellington Fault in the vicinity of the site.

2.1 Begg & Mazengarb (1996)

In Begg & Mazengrab (1996)[1], the Wellington Fault through the Manor Park site was mapped as 'concealed' due to an overburden of alluvial deposits, and therefore the precise location was not well understood. This lineament through the site is based on interpretation of the geomorphology and aligns with surface exposure of the fault to the northeast and southwest of the site. This approximate location is shown in Figure A1, Appendix A.

2.2 Beetham et. al. (2008)

Beethem et. al. (2008)[2] carried out fault investigations in the vicinity of the Manor Park site to guide the planning and design of the major interchange between SH58 and SH2. The investigations completed included a fault trench immediately to the south of the site, and three micro-gravity survey profiles (one of which is located through the site, and two to the northeast). The investigation constrained the likely location of the Wellington fault to a narrow (35 to 60 m wide) zone through the site as shown in Figure A1, Appendix A. Two of the three survey profiles are also shown in Figure A1.

2.2.1 Fault trench

A 15 m long fault trench on the western (true right) side of the Hutt River was excavated through alluvial gravels to Greywacke rock. The location of this trench was surveyed and is shown in Figure A1, Appendix A. We note that the river has subsequently eroded away the land where the trench was excavated.

A sub-horizontal rock bench was exposed at the base of the trench consisting of fault breccia i.e., disintegrated fault rock (also known as Cataclasite). The excavation also exposed a sub-vertical step (of at least 1 m) in the rock generally parallel with the Wellington Fault trace (strike 044°/dip 78° SE). Close to this step, the rock quality deteriorated from 'hard, grey fault breccia to moderately soft, dark brecciated argillite'. A thin (c. 1 cm) layer of soft gouge material consisting of angular rock fragments in a dark, clay-rich matrix was plastered against the face of the step. No deformation of the overlaying alluvial gravels was observed.

The report concludes that this step is either the primary fault plane of the Wellington Fault, or at least its westernmost possible location.

[1] Begg, J.G., Mazengarb, C., 1996. Geology of the Wellington area, scale 1:50 000. Institute of Geological & Nuclear Sciences geological map 22. 1 sheet + 128 p. Lower Hutt, New Zealand. Institute of Geological & Nuclear Sciences Limited.
[2] Beetham et. al. (2008). Investigation and location of the Wellington Fault at Manor Park, Report 2008/36. GNS Science.

2.2.2 Micro-gravity survey

A micro-gravity survey was carried out through the site located perpendicular to the inferred fault alignment.

A small variation in the gravity profile through the site was modelled as a vertical, 30 m high step in the greywacke basement rock, inferred to represent the location of the Wellington Fault.

2.3 Van Dissen (2020)

Observations of the Wellington Fault within the Hutt River bed and on the western (true right) riverbank were made in 2010 and 2014[3], are have recently been presented to T+T by Van Dissen (2020). These observations were made immediately to the south of the Manor Park site as shown in Figure A1, Appendix A.

In 2010, a subvertical rock outcrop on the western (true right) riverbank exposed 30 to 50 cm thick fault gauge comprising dark brown clay and gravel and was inferred to be the Wellington Fault. Either side of the fault gauge was dark grey crushed and sheared greywacke which aligned with brecciated rock exposed in the riverbed about 50 m downstream. In 2014, the outcrop was examined again after further erosion had exposed more of the subvertical rock scarp.

3 Recent investigations

3.1 Methodology

Prior to commencing investigations, a series of fault investigation options were reviewed, and these are presented in our fault study and investigation options report[4]. These options were also discussed with GNS[5].

It was considered unlikely that the location of the Wellington Fault could be obtained by traditional fault trenching due to the significant depth of overlying fill and alluvial deposits (c. 10 m) that have not seen displacement of the fault i.e., the last displacement of the fault pre-dates deposition of the alluvium. It was also noted that evidence (if any) of fault displacement in river gravels is not always well preserved.

Therefore, as agreed with you, we have progressed fault investigations in stages, after interrogation of past information and latest results. The following investigations have been completed:

- Three seismic refraction lines perpendicular to approximate fault trace to determine the rock head profile and the presence of low velocity zones within the rock;
- Four vertically drilled boreholes to verify the depth to rock obtained by seismic refraction surveys; and
- Two inclined machine drilled boreholes to verify low velocity signature obtained by the seismic refraction surveys i.e., drill through the inferred location of the Wellington Fault.

3.2 Seismic refraction survey

Three seismic refraction survey profiles (SL1, SL2 and SL3) were undertaken and assessed using the Plus-Minus method by A J Sutherland Consulting between 10 November and 16 December 2020. The start and end locations of SL1, SL2 and SL3 were surveyed by Spencer Holmes on 22 December 2020.

[3] Russ Van Dissen (2020). Wellington Fault at Manor Park, presentation notes. GNS.
[4] Tonkin + Taylor (14 December 2020). Manor Park Development – Wellington Fault Desktop Study and Investigation Options.
[5] Meeting of 23/09/2020, Russ Van Dissen (GNS), Tim Haxell (T+T) and Nick Peters (T+T)

A plan showing the location of the profiles are presented in Figure A1, Appendix A, and the final A J Sutherland Consulting report is included in Appendix C.

Table 3.1: Seismic refraction survey summary

Seismic Line	Start Location (NZTM)[1]		End Location (NZTM)[1]		Total length (m)	Geophone spacing (m)
	Easting (m)	Northing (m)	Easting (m)	Northing (m)		
SL1	1765067	5441260	1765183	5441143	165	2.5
SL2	1765208	5441372	1765279	5441289	110	5[2]
SL3	1765316	5441460	1765387	5441375	110	5[2]

[1] Start and end locations were surveyed by Spencer Holmes (Total Station GPS).

[2] The geophone spacing was reduced to 1m over the low velocity zone to improve the data resolution.

3.3 Machine boreholes

Four vertical and two inclined boreholes was drilled over the period between 25 February 2021 and 23 March 2021. The works were carried out using a rotary coring drilling rig, supplied, and operated by Webster Drilling and Exploration.

All drilling works were completed under the supervision of an engineering geologist from T+T. The recovered drill core was photographed and logged to NZGS 'Field Description of Soil and Rock' guidelines. The borehole locations are presented in Figure A1, Appendix A. Borehole logs and core photographs are presented in Appendix B and summary details are presented in Table 3.2 below.

Table 3.2: Machine borehole summary

BH ID	Inclination from horizontal	Location (NZTM)[1]		Ground surface elevation RL (m)[2]	Total depth drilled (m)
		Easting (m)	Northing (m)		
SL1-A	90°	1765108	5441219	26.1	12.5
SL1-B	90°	1765118	5441208	25.5	11.8
SL1-C	45° - NW	1765127	5441199	25.5	48.0
SL3-A	90°	1765339	5441433	32.8	14.6
SL3-B	90°	1765348	5441423	32.2	14.8
SL3-C	45°- NW	1765355	5441415	32.3	48.5

[1] Borehole locations were surveyed by Spencer Holmes (Total Station GPS).

[2] Ground level obtained by Wellington LiDAR 1m DEM (2013), from Land Information NZ.

3.4 Interpretation of results

3.4.1 Seismic refraction survey

A 5 m wide low velocity zone with a signal time loss of 4 and 6 milliseconds was observed in SL1 and SL2, respectively. We infer that the signal time loss is attributed to highly disintegrated material i.e., fault gauge of the Wellington Fault, which has a significantly reduced seismic velocity than the surrounding greywacke rock (which was measured between 2750 and 2900 m/s). Additionally, an attenuation of the maximum geophone signal amplitude at SL2 was observed within the low velocity zone.

A less-well defined, 3 m wide low velocity zone with a signal time loss of less than 1 milliseconds was observed in SL3. A small attenuation of the maximum geophone amplitude was also measured within the low velocity zone in this location. We infer that at this location, the fault width narrows and therefore the low velocity zone is less distinct than observed in SL1 or SL2. It is understood that the Wellington Fault zone varies in width along its length.

When extrapolating the low velocity zones between the seismic refraction surveys and the exposures observed by Van Dissen to the south of the site, the inferred alignment of the fault is relatively consistent through the site (azimuth ~048°).

No significant step in bedrock was identified that corroborates the 30 m step modelled by GNS (as described in Section 2.2.2 above). We infer that downcutting of the Hutt River has planed off any evidence of a step in bedrock at this location. It should be appreciated that due to the sensitivity of micro-gravity processing and modelling, other models of the bedrock profile i.e., without a 30 m high step, may still reconcile a small variation measured in the gravity survey.

3.4.2 Machine boreholes

Two cross sections presenting our interpretation of the ground model at SL1 and SL3 are shown in Figure A2 and A3, Appendix A. The depth to rock beneath the ground surface, obtained by seismic refraction survey, was verified by vertically drilled machine boreholes and is generally between 8 and 10 m below ground level. All boreholes encountered markedly crushed and broken greywacke rock i.e., cataclasite, formed by near-fault stresses.

No significant clay gouge thickness was encountered in the inclined (SL1-C and SL3-C) boreholes that were drilled through the inferred location of the Wellington Fault. It is expected that any softened material was washed away by the drilling process. At SL1-C and as shown in Figure A2, there is compounding evidence that confirms the existence of a low velocity zone and the likely location of the Wellington Fault. Specifically, within the low velocity zone we noted the following drilling observations which are recorded on Figures A2 and A3:

- Up to 1.4 m of core was loss (negligible core loss outside of the low velocity zone);
- Rock samples were more crushed and disintegrated;
- Drill core lengths were reduced by the driller due to an increase in pump pressure; and
- Driller noted ‘soft’ between 29.7 to 30 m (although no material was recovered).

The inclined (SL3-C) borehole provided less evidence to confirm the low velocity zone, however there was up to 0.7 m of core was loss within low velocity zone. There was negligible core loss outside of the low velocity zone.

4 Development considerations

Based on the previous and recent investigations discussed in Sections 2 and 3, we infer that the zone that constrains the likely location of the Wellington Fault through the site is highlighted yellow in Figure A1, Appendix A.

There are several uncertainties that have been allowed for when defining this zone, specifically:

- Deformation at the surface may not be a simple single plane rupture. During fault rupture, horizontal and vertical displacement through bedrock may distribute through overlying alluvial gravels and result in a wider zone of disturbance. It is unlikely that any additional investigation will reduce this uncertainty;
- Uncertainties in the measurement associated with seismic refraction survey and machine boreholes; and
- Limited investigation data the north of SL3. An additional seismic refraction survey could be completed to reduce this uncertainty however this would need to be completed outside the property boundary, adjacent to Manor Park Road.

The HCC District Plan requires that proposed buildings should not be located within 20 m of fault line. Therefore, any proposed buildings should not be within 20 m of the zone highlighted yellow in Figure A1, Appendix A.

The nature and continuity of the subsurface conditions away from the borehole locations and seismic refraction lines are inferred. It must be appreciated that strain along the Wellington Fault may exploit multiple other planes of weakness within the basement rock and overlying soils (that have not been investigated), and surface rupture may occur outside of the inferred zone presented in this report.

5 Applicability

This report has been prepared for the exclusive use of our client, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report as part of an application for resource consent and that Hutt City Council as the consenting authority will use this report for the purpose of assessing that application.

Tonkin & Taylor Ltd

Environmental and Engineering Consultants

Report prepared by:

.....

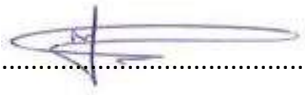
Tim Haxell
Engineering Geologist

Authorised for Tonkin & Taylor Ltd by:

.....

Richard Cole
Project Director

Report Reviewed by:



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Nick Peters
Senior Engineering Geologist

TH
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Appendix A: Figures

- **Figure A1 Wellington Fault investigation location plan**
- **Figure A2 Cross Section SL-1**
- **Figure A3 Cross Section SL-3**

N

SL3-0.0m

SL3-A

SL3-B

SL3-C

SL3-109m

SL2-0.0m

SL2-109m

SL1-0.0m

SL1-A

SL1-B

SL1-C

SL1-165m

GNS 2014 river bank exposure

GNS 2010 riverbed exposure

GNS 2008 trench. Note that significant erosion in this area has moved the riverbank to the north

LEGEND:

- INFERRED WGTN FAULT LINE (BEGG & MAZENGARB, 1996)
- INFERRED WGTN FAULT ZONE (GNS, 2008)
- INFERRED WGTN FAULT ZONE WITHIN THE SITE (T+T, 2021)
- 2021 T+T VERTICAL BOREHOLE
- 2021 T+T INCLINED BOREHOLE
- SEISMIC REFRACTION LINE
- LOW VELOCITY ZONE
- GNS 2008 MICRO-GRAVITY SURVEY
- PROPERTY BOUNDARIES (LINZ)

Tonkin+Taylor

DRAWN	TH	1/05/21
CHECKED	NCP	1/06/21
APPROVED	RGC	1/06/21

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APPROX. SCALE (AT A3 SIZE) 1:3000

PROJECT No. 1015081

TE RANGIHAEATA / MANOR PARK DEVELOPMENT
WELLINGTON FAULT INVESTIGATION PLAN

FIG. No. A1

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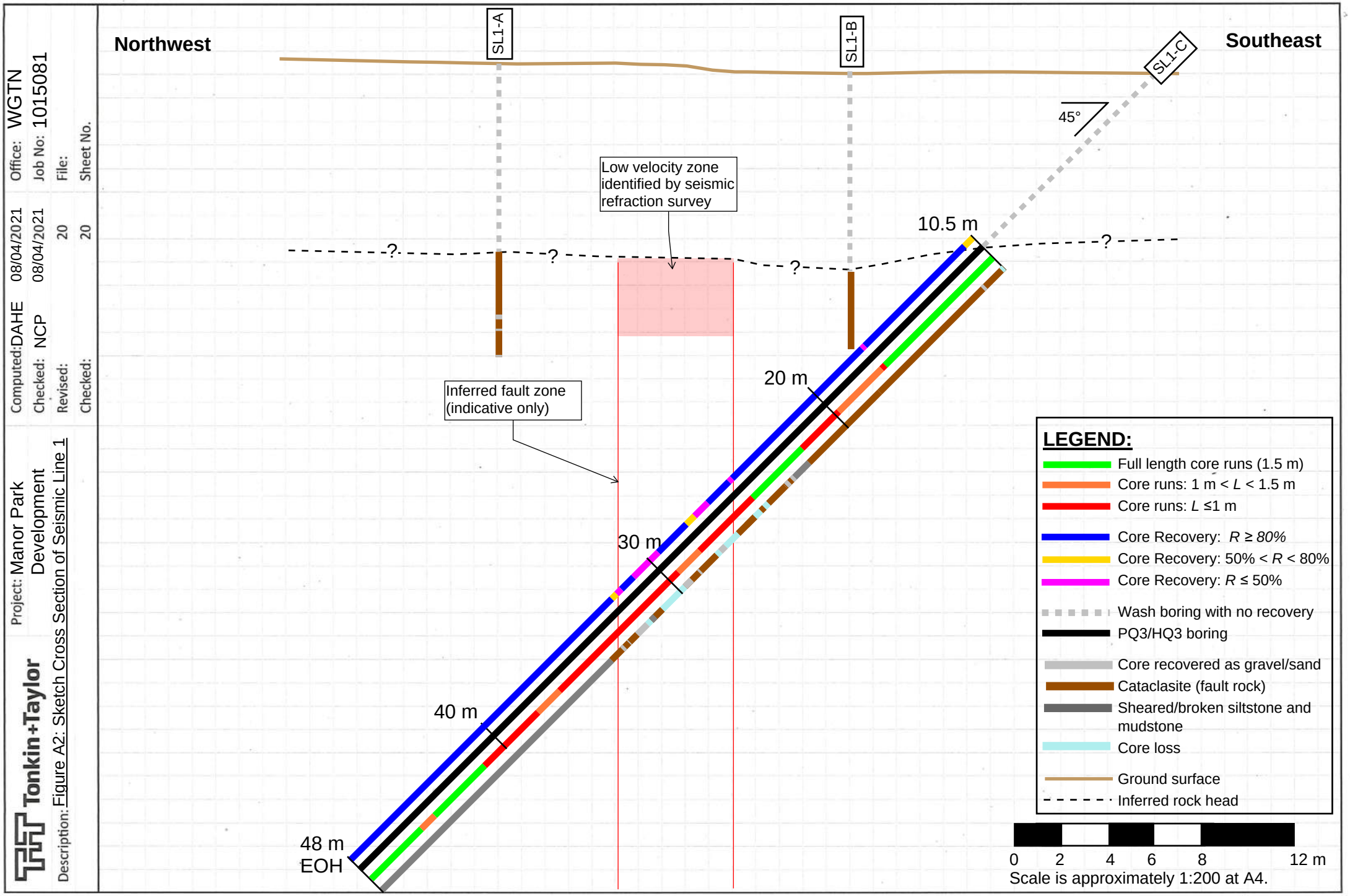
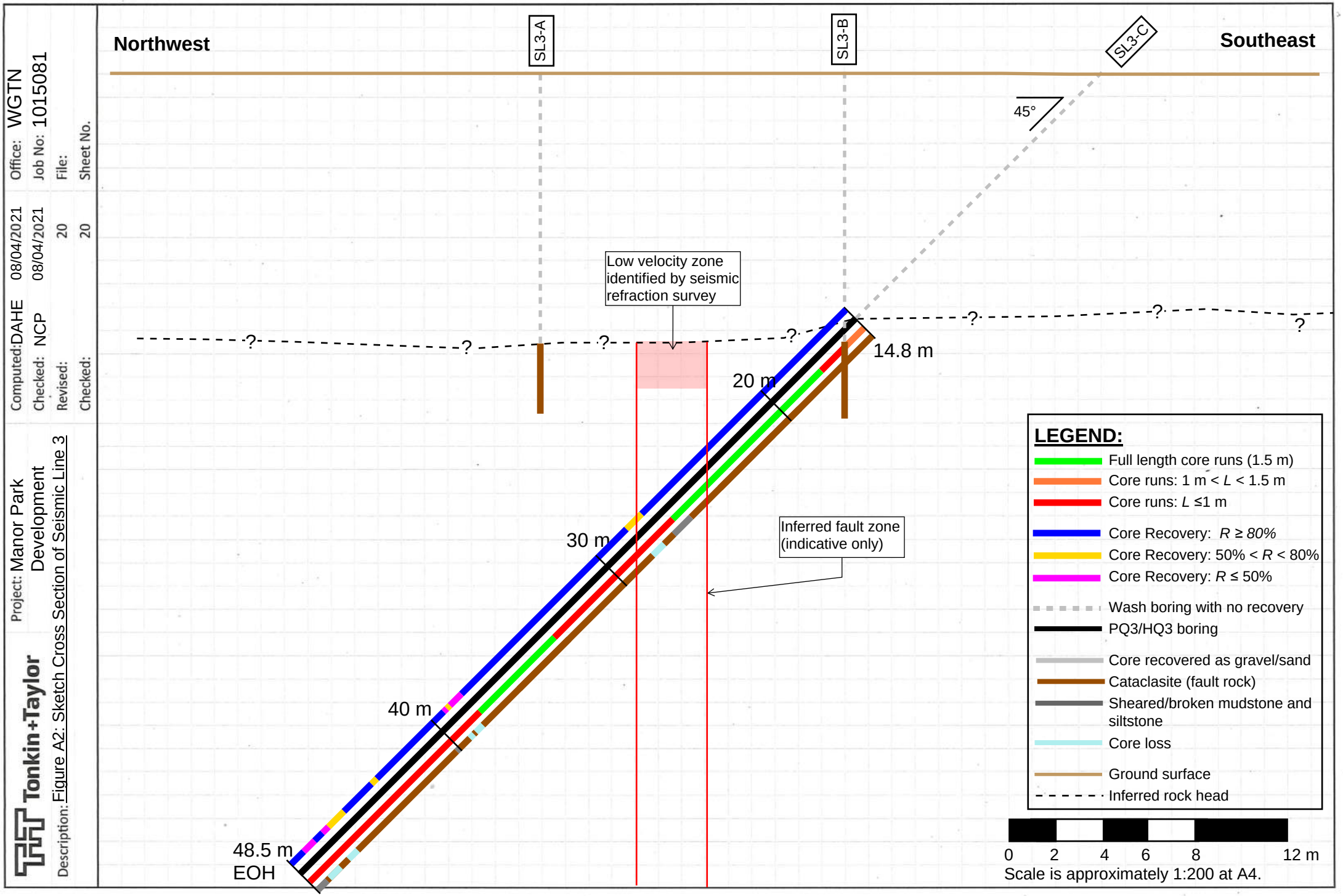

Northwest
Southeast
SL1-A
SL1-B
SL1-C
45°
Low velocity zone identified by seismic refraction survey
Inferred fault zone (indicative only)
10.5 m
20 m
30 m
40 m
48 m EOH
?
?
?
?
LEGEND:
Full length core runs (1.5 m)
Core runs: 1 m < L < 1.5 m
Core runs: L ≤1 m
Core Recovery: R ≥ 80%
Core Recovery: 50% < R < 80%
Core Recovery: R ≤ 50%
Wash boring with no recovery
PQ3/HQ3 boring
Core recovered as gravel/sand
Cataclasite (fault rock)
Sheared/broken siltstone and mudstone
Core loss
Ground surface
Inferred rock head
0 2 4 6 8 12 m
Scale is approximately 1:200 at A4.
Office: WGTN
Job No: 1015081
File:
Sheet No.
Computed: DAHE 08/04/2021
Checked: NCP 08/04/2021
Revised: 20
Checked: 20
Project: Manor Park Development
Tonkin+Taylor
Description: Figure A2: Sketch Cross Section of Seismic Line 1


Northwest
Southeast
SL3-A
SL3-B
SL3-C
45°
Low velocity zone identified by seismic refraction survey
Inferred fault zone (indicative only)
14.8 m
20 m
30 m
40 m
48.5 m
EOH
LEGEND:
Full length core runs (1.5 m)
Core runs: 1 m < L < 1.5 m
Core runs: L ≤1 m
Core Recovery: R ≥ 80%
Core Recovery: 50% < R < 80%
Core Recovery: R ≤ 50%
Wash boring with no recovery
PQ3/HQ3 boring
Core recovered as gravel/sand
Cataclasite (fault rock)
Sheared/broken mudstone and siltstone
Core loss
Ground surface
Inferred rock head
0 2 4 6 8 12 m
Scale is approximately 1:200 at A4.
Office: WGTN
Job No: 1015081
File:
Sheet No.
Computed: DAHE 08/04/2021
Checked: NCP 08/04/2021
Revised: 20
Checked: 20
Project: Manor Park Development
Description: Figure A2: Sketch Cross Section of Seismic Line 3
Tonkin+Taylor

Appendix B: Borehole logs

- **BH SL1-A**
- **BH SL1-B**
- **BH SL1-C**
- **BH SL3-A**
- **BH SL3-B**
- **BH SL3-B**

BOREHOLE LOG

Tonkin+Taylor

BOREHOLE No.: SL1-A

SHEET: 1 OF 2

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: East side of culvert, adjacent to abandoned paintball stall and pedestrian access.

CO-ORDINATES: 5441219.11 mN, 1765107.63 mE (NZTM2000)

DIRECTION:

ANGLE FROM HORIZ.: -90°

R.L. GROUND: 26.10m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Cody Longstaff

LOGGED BY: TH

CHECKED: NCP

START DATE: 25/02/2021

FINISH DATE: 26/02/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW, SW, MW, HW, CW)	Rock Strength (ES, VS, S, MS, W, VW, EW)	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm) (2000, 600, 200, 60, 20)	RQD (%)	Description & Additional Observations	Fluid Loss (%) (25, 50, 75)	Water Level	Casing	Installation	Core Box No
	0.00m: Wash boring with no sample recovered.						26	0										
							25	1										
							24	2										
							23	3										
							22	4										
							21	5										
							20	6										
							19	7										
							18	8										
Rakaia Terrane	*8.00m:* Unweathered to slightly weathered, grey CATACLASITE. Moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of pale grey clay. *8.30 - 8.36m:* Shear zone. 60° from horizantal. 60 mm across. Hard, dark grey.			PQ3	100							0						
	8.25m: Unweathered to slightly weathered, dark grey CATACLASITE. Moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of dark grey clay. *9.10m:* Core loss to 9.7 m.			PQ3	50		17	9				0						
	9.70m: Dark grey CATACLASITE as described at 8.25 m.											0						

COMMENTS: 1) Groundwater level not recorded. 2)Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.

Hole Depth 12.5m

Scale 1:50

Rev.: B

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No.: SL1-A

SHEET: 2 OF 2

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: East side of culvert, adjacent to abandoned paintball stall and pedestrian access.

CO-ORDINATES: 5441219.11 mN, 1765107.63 mE (NZTM2000)

DIRECTION:

ANGLE FROM HORIZ.: -90°

R.L. GROUND: 26.10m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Cody Longstaff

LOGGED BY: TH

CHECKED: NCP

START DATE: 25/02/2021

FINISH DATE: 26/02/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm)	RQD (%)	Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
Rakaia Terrane	*10.70m:* Unweathered to slightly weathered, dark grey MUDSTONE and SILTSTONE. Weak to moderately strong, extremely closely spaced joints. Sheared rock. Discontinuities are filled with pale grey quartz. Recovered as gravel from 10.7 to 10.8. *11.30 - 11.40m:* Recovered as fine to coarse, angular gravel. *12.00 - 12.10m:* Recovered as fine to coarse, angular gravel. *12.40 - 12.50m:* Recovered as fine to coarse, angular gravel.			PQ3 PQ3 PQ3 PQ3 PQ3 PQ3 PQ3	100 100 86 69 100 100 100		16 15 14	10 11 12				0 0 0 0 0 0 0						Box 1, 8.00-10.55m Box 2, 10.55-12.50m
	12.5m: END OF BOREHOLE						13 12 11 10 9 8 7	13 14 15 16 17 18 19										

COMMENTS: 1) Groundwater level not recorded. 2)Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.

Hole Depth 12.5m

Scale 1:50

Rev.: B

Tonkin+Taylor

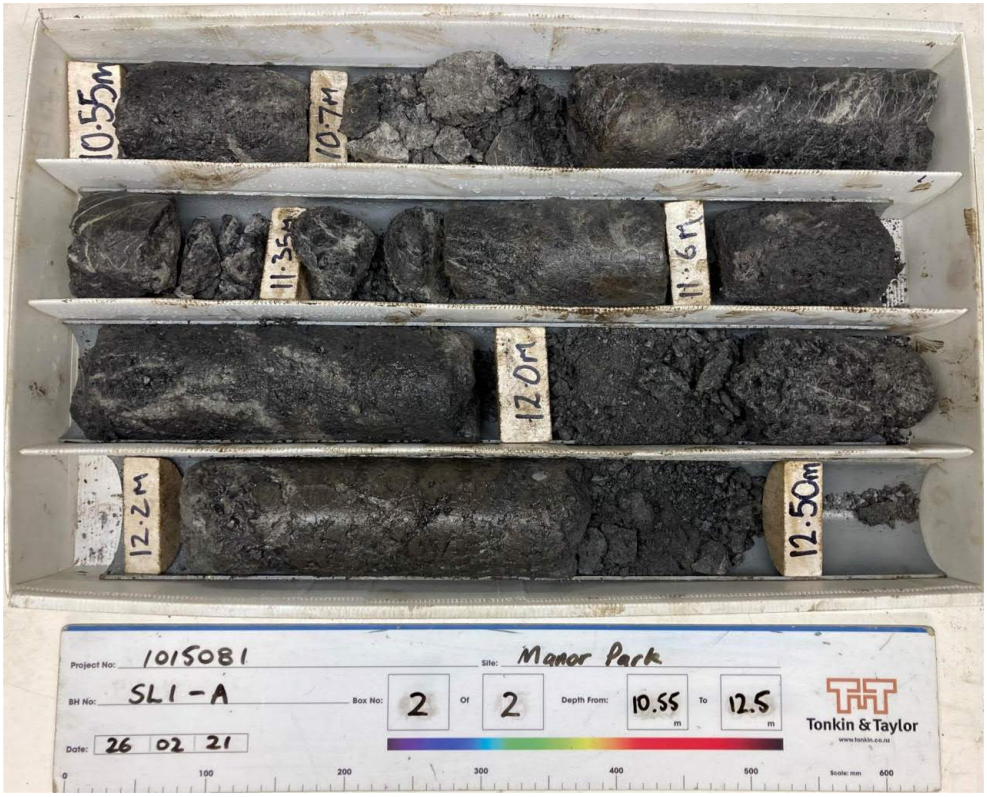
CORE PHOTOS

BOREHOLE No.: **SL1-A**

Hole Location: East side of culvert, adjacent to abandoned paintball stall and pedestrian access.

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441219.11 mN (NZTM2000) 1765107.63 mE R.L.: 26.10m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 25/02/2021 HOLE FINISHED: 26/02/2021 DRILLED BY: Webster Drilling LOGGED BY: TH CHECKED: NCP

8.00-10.55m



10.55-12.50m

BOREHOLE LOG

Tonkin+Taylor

BOREHOLE No.: SL1-B

SHEET: 1 OF 2

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: On driveway to abandoned paintball stall on a the vacant lot.

CO-ORDINATES: 5441208.38 mN, 1765118.18 mE (NZTM2000)

DIRECTION:

ANGLE FROM HORIZ.: -90°

R.L. GROUND: 25.50m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Jacob Fuller

LOGGED BY: TH

CHECKED: NCP

START DATE: 24/02/2021

FINISH DATE: 26/02/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW, EW, HW, MW, HW, CW)	Rock Strength (ES, VS, S, MS, M, W, VW, EW)	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm) (2000, 600, 200, 60, 20)	RQD (%)	Description & Additional Observations	Fluid Loss (%) (25, 50, 75)	Water Level	Casing	Installation	Core Box No
Rakaia Terrane	*0.00m:* Wash boring with no sample recovered.						25	0							26/02/2021; Morning reading.			
							24	1										
							23	2										
							22	3										
							21	4										
							20	5							25/02/2021; Time of reading not recorded.			
							19	6										
							18	7										
							17	8										
	8.50m: 8.5 to 8.6 m: Core loss.			HQ3	66							0						
	8.60m: Unweathered to slightly weathered, dark grey CATACLASITE. Moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of dark grey clay.			HQ3	100		16	9				0						
												0						

COMMENTS: Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.

Hole Depth 11.8m

Scale 1:50

Rev.: B

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No.: SL1-B

SHEET: 2 OF 2

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: On driveway to abandoned paintball stall on a the vacant lot.

CO-ORDINATES: (NZTM2000) 5441208.38 mN 1765118.18 mE

DIRECTION:

ANGLE FROM HORIZ.: -90°

R.L. GROUND: 25.50m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Jacob Fuller

LOGGED BY: TH

CHECKED: NCP

START DATE: 24/02/2021

FINISH DATE: 26/02/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW SW MW HW CW)	Rock Strength (ES VS S MS W VW EW)	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	ROCK DEFECTS: Fracture Spacing (mm) (2000 600 200 60 20)	ROCK DEFECTS: RQD (%)	ROCK DEFECTS: Description & Additional Observations	Fluid Loss (%) (25 50 75)	Water Level	Casing	Installation	Core Box No
Rakaia Terrane				HQ3	100		15											
				HQ3	100		14	11				0						Box 1, 8.50-11.40m
	11.8m: END OF BOREHOLE						13	12										
							12	13										
							11	14										
							10	15										
							9	16										
							8	17										
							7	18										
							6	19										

COMMENTS: Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.

Hole Depth 11.8m

Scale 1:50

Rev.: B

CORE PHOTOS

BOREHOLE No.: **SL1-B**

Hole Location: On driveway to abandoned paintball stall on a the vacant lot.

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441208.38 mN (NZTM2000) 1765118.18 mE R.L.: 25.50m DATUM: NZVD2016	DRILL TYPE: Tractor-Mounted Rig DRILL METHOD: RC	HOLE STARTED: 24/02/2021 HOLE FINISHED: 26/02/2021 DRILLED BY: Webster Drilling LOGGED BY: TH CHECKED: NCP

8.50-11.40m

11.40-11.80m

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No.: SL1-C

SHEET: 1 OF 5

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

CO-ORDINATES: (NZTM2000) 5441199.09 mN 1765127.21 mE

DIRECTION: 315°

ANGLE FROM HORIZ.: -45°

R.L. GROUND: 25.50m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Cody Longstaff

LOGGED BY: DAHE

CHECKED: NCP

START DATE: 01/03/2021

FINISH DATE: 10/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW, EW, HW, MW, SW, DW)	Rock Strength (ES, VS, S, MS, M, W, VW, EW)	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log (relative to inclination)	ROCK DEFECTS: Fracture Spacing (mm) (2000, 600, 200, 60, 20)	ROCK DEFECTS: RQD (%)	ROCK DEFECTS: Description & Additional Observations	Fluid Loss (%) (25, 50, 75)	Water Level	Casing	Installation	Core Box No
	0.00m: Wash boring with no sample recovered.						25 24 23 22 21 20 19	1 2 3 4 5 6 7 8 9							05/03/2021 08:03 09/03/2021; Morning reading. 10/03/2021; Morning reading.			

COMMENTS: Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.

Hole Depth 48m

Scale 1:50

Rev.: B

BOREHOLE LOG

BOREHOLE No.: SL1-C

SHEET: 2 OF 5

Tonkin+Taylor

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

CO-ORDINATES: (NZTM2000) 5441199.09 mN 1765127.21 mE

DIRECTION: 315°

ANGLE FROM HORIZ.: -45°

R.L. GROUND: 25.50m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Cody Longstaff

LOGGED BY: DAHE

CHECKED: NCP

START DATE: 01/03/2021

FINISH DATE: 10/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW, SW, MW, HW, CW)	Rock Strength (ES, VS, S, MS, W, VW, EW)	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log (relative to inclination)	Fracture Spacing (mm) (2000, 600, 200, 60, 20)	RQD (%)	ROCK DEFECTS: Description & Additional Observations	Fluid Loss (%) (25, 50, 75)	Water Level	Casing	Installation	Core Box No
Rakaia Terrane	*10.50m:* Core loss.			PQ3	70			18				0						
	10.65m: Unweathered to slightly weathered, grey CATACLASITE. Moderately strong, crushed. Fine to coarse, angular sandstone, siltstone and mudstone gravel in a pale grey clay matrix.							11										
	11.60 - 11.75m: Recovered as fine to coarse, angular gravel.			PQ3	100							0						
	12.00 - 12.80m: Bands of dark grey argillite within the siltstone dip at approximately 45°. The bands are estimated to be subvertical when in situ.							12										Box 1, 10.50-12.80m
	12.80 - 13.10m: Crushed siltstone is dark grey with argillite inclusions.			PQ3	100			13				0						
	14.55 - 14.65m: Argillite bands dip at approximately 45° in the core. Bands are estimated to be subvertical when in-situ. *14.75 - 14.80m:* Large argillite band within siltstone.			PQ3	100			15				0						Box 2, 12.80-14.85m
	15.75 - 15.95m: Thick, subvertical argillite band. Argillite is moderately weathered, dark grey, weak.			PQ3	100			16				0						
	16.80 - 17.00m: Argillite bands dip at approximately 45° in the core. Bands are estimated to be subvertical when in-situ.			PQ3	50			17				0						Box 3, 14.85-17.00m
	17.60m: Unweathered to slightly weathered, grey CATACLASITE. Moderately strong, crushed. Fine to coarse, angular sandstone, siltstone and mudstone gravel in a pale grey to dark grey clay matrix. Colour varies along the length of the core.			PQ3	100			18				0						
				PQ3	100			19				0						Box 4, 17.00-19.10m

COMMENTS: Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.

Hole Depth 48m

Scale 1:50

Rev.: B

BOREHOLE LOG

Tonkin+Taylor

BOREHOLE No.: SL1-C

SHEET: 3 OF 5

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

CO-ORDINATES: (NZTM2000) 5441199.09 mN, 1765127.21 mE

DIRECTION: 315°

ANGLE FROM HORIZ.: -45°

R.L. GROUND: 25.50m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Cody Longstaff

LOGGED BY: DAHE

CHECKED: NCP

START DATE: 01/03/2021

FINISH DATE: 10/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW, SW, MW, HW, CW, DW)	Rock Strength (ES, VS, S, MS, M, W, VW, EW)	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log (relative to inclination)	Fracture Spacing (mm) (2000, 600, 200, 60, 20)	RQD (%)	Description & Additional Observations	Fluid Loss (%) (25, 50, 75)	Water Level	Casing	Installation	Core Box No
Rakaia Terrane	*22.20m:* Unweathered to slightly weathered, dark grey MUDSTONE and SILTSTONE. Weak to moderately strong, extremely closely spaced joints. Sheared rock. Discontinuities are filled with pale grey quartz. *23.10 - 23.25m:* Recovered as fine to coarse, angular gravel.			PQ3	100		11	21				0						Box 5, 19.10-21.45m
				PQ3	118		10	22				0						
	23.25m: Unweathered to slightly weathered, grey CATACLASITE. Moderately strong, crushed. Fine to coarse, angular sandstone, siltstone and mudstone gravel in a pale grey to dark grey clay matrix. Colour varies along the length of the core. *23.40 - 23.60m:* Recovered as fine to coarse, angular gravel.			PQ3	100		9	23				0						Box 6, 21.45-23.50m
				PQ3	83		8	24				0						
	24.75m: Core loss.			PQ3	0			25				0						
	25.00m: Unweathered to slightly weathered, grey CATACLASITE. Moderately strong, crushed. Fine to coarse, angular sandstone, siltstone and mudstone gravel in a grey clay matrix.			PQ3	100							0						
	25.20m: Core loss.			PQ3	87							0						
	25.50m: Unweathered to slightly weathered, dark grey CATACLASITE. Weak, crushed. Fine to coarse, angular sandstone, siltstone and mudstone gravel in a dark grey clay matrix. *25.60 - 25.70m:* Sheared mudstone and siltstone. Moderately strong, extremely closely spaced joints. Abrupt transition at 45°. Transition is estimated to be subvertical when in-situ. *25.70 - 26.30m:* Cataclasite becomes dark grey and moderately strong *26.30 - 26.50m:* Cataclasite is black, slightly weathered and weak. Transition to black material is abrupt and at a 45°. Transition is estimated to be subvertical when in-situ.			PQ3	100		7	26				0						Box 7, 23.50-26.00m
				PQ3	0			27				0						
				PQ3	0							0						
					0							0						
	26.50m: Core loss.			PQ3	56		6	28				0						
	27.30m: Unweathered to slightly weathered, dark grey CATACLASITE. Weak, crushed. Fine to coarse, angular sandstone, siltstone and mudstone gravel in dark grey clay matrix. Recovered as angular, fine to coarse gravel.			PQ3	100							0						
	27.58m: Core loss.			PQ3	100							0						
	27.80m: Unweathered to slightly weathered, dark grey CATACLASITE. Weak to moderately strong, crushed. Fine to coarse, angular sandstone, siltstone and mudstone gravel in a dark grey clay matrix. *28.76 - 28.85m:* Recovered as fine to coarse, angular gravel. *28.85 - 29.30m:* Becomes more broken. Fine, white infill in joints. *29.30 - 29.70m:* Recovered as fine to coarse, angular gravel and sand.			PQ3	100		5	29				0						Box 8, 26.00-28.76m
	29.70m: Core loss.			PQ3	0							0						
					0							0						
					0							0						
					0							0						

COMMENTS: Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.

Hole Depth 48m

Scale 1:50

Rev.: B

BOREHOLE LOG

BOREHOLE No.: SL1-C

SHEET: 4 OF 5

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

CO-ORDINATES: (NZTM2000) 5441199.09 mN, 1765127.21 mE

DIRECTION: 315°

ANGLE FROM HORIZ.: -45°

R.L. GROUND: 25.50m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Cody Longstaff

LOGGED BY: DAHE

CHECKED: NCP

START DATE: 01/03/2021

FINISH DATE: 10/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE (SOIL: Classification, colour, consistency / density, moisture, plasticity; ROCK: Weathering, colour, fabric, name, strength, cementation)	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log (relative to inclination)	ROCK DEFECTS: Fracture Spacing (mm)	RQD (%)	Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
Rakaia Terrane	*31.10m:* Slightly weathered, dark grey CATACLASITE. Weak to moderately strong, crushed. Fine to coarse, angular sandstone, siltstone and mudstone gravel in a dark grey clay matrix.			PQ3	0		4	31				0						
	31.50m: Unweathered to slightly weathered, grey MUDSTONE and SILTSTONE. Weak, extremely closely spaced joints. Sheared rock.			PQ3	75		3	32				0						
	31.75m: Core loss.			PQ3	100							0						
	32.00m: Slightly weathered, dark grey CATACLASITE. Weak to moderately strong, crushed. Fine to coarse, angular sandstone, siltstone and mudstone gravel in a dark grey clay matrix.			PQ3	0							0						
	32.00 - 32.60m: Recovered as fine to coarse, angular gravel with some fine to coarse, angular sand.			PQ3	66							0						
	33.05 - 33.10m: Recovered as fine to coarse, angular gravel.			PQ3	100							0						
	33.35 - 33.50m: Recovered as fine to coarse, angular gravel with some fine to coarse, angular sand.			PQ3	100		2	33				0						
				PQ3	100							0						
				PQ3	100							0						
	34.15m: Unweathered to slightly weathered, dark grey to black SILTSTONE and MUDSTONE. Moderately strong, crushed and sheared, extremely closely spaced joints. Discontinuities are filled with pale grey quartz.			PQ3	100		1	34				0						
				PQ3	100			35				0						
				PQ3	100		0	36				0						
				PQ3	100							0						
				PQ3	88		-1	37				0						
				PQ3	100			38				0						
				PQ3	100		-2	39				0						
				PQ3	90							0						

Box 9, 28.76-32.40m

Box 10, 32.40-34.15m

Box 11, 34.15-36.20m

Box 12, 36.20-38.54m

COMMENTS: Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.

Hole Depth 48m

Scale 1:50

Rev.: B

BOREHOLE LOG

Tonkin+Taylor

BOREHOLE No.: SL1-C

SHEET: 5 OF 5

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

CO-ORDINATES: (NZTM2000) 5441199.09 mN, 1765127.21 mE

DIRECTION: 315°

ANGLE FROM HORIZ.: -45°

R.L. GROUND: 25.50m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Cody Longstaff

LOGGED BY: DAHE

CHECKED: NCP

START DATE: 01/03/2021

FINISH DATE: 10/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW, SW, MW, HW, CW)	Rock Strength (ES, VS, S, MS, W, VW, EW)	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log (relative to inclination)	ROCK DEFECTS: Fracture Spacing (mm) (2000, 600, 200, 60, 20)	ROCK DEFECTS: RQD (%)	ROCK DEFECTS: Description & Additional Observations	Fluid Loss (%) (25, 50, 75)	Water Level	Casing	Installation	Core Box No
Rakaia Terrane	*45.00m:* SILTSTONE and MUDSTONE become slightly weathered and weak.			PQ3	100		-3	41				0						Box 13, 38.54-40.71m
				PQ3	100							0						
				PQ3	100		-4	42				0						Box 14, 40.71-42.82m
				PQ3	100		-5	43				0						
				PQ3	100			44				0						
				PQ3	100		-6	45				0						Box 15, 42.82-45.00m
				PQ3	100		-7	46				0						
				PQ3	100			47				0						Box 16, 45.00-47.29m
							-8	48										Box 17, 47.29-48.00m
	48m: END OF BOREHOLE						-9	49										

COMMENTS: Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.

Hole Depth 48m

Scale 1:50

Rev.: B

Tonkin+Taylor

CORE PHOTOS

BOREHOLE No.: **SL1-C**

Hole Location: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441199.09 mN (NZTM2000) 1765127.21 mE R.L.: 25.50m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 01/03/2021 HOLE FINISHED: 10/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

10.50-12.80m

12.80-14.85m

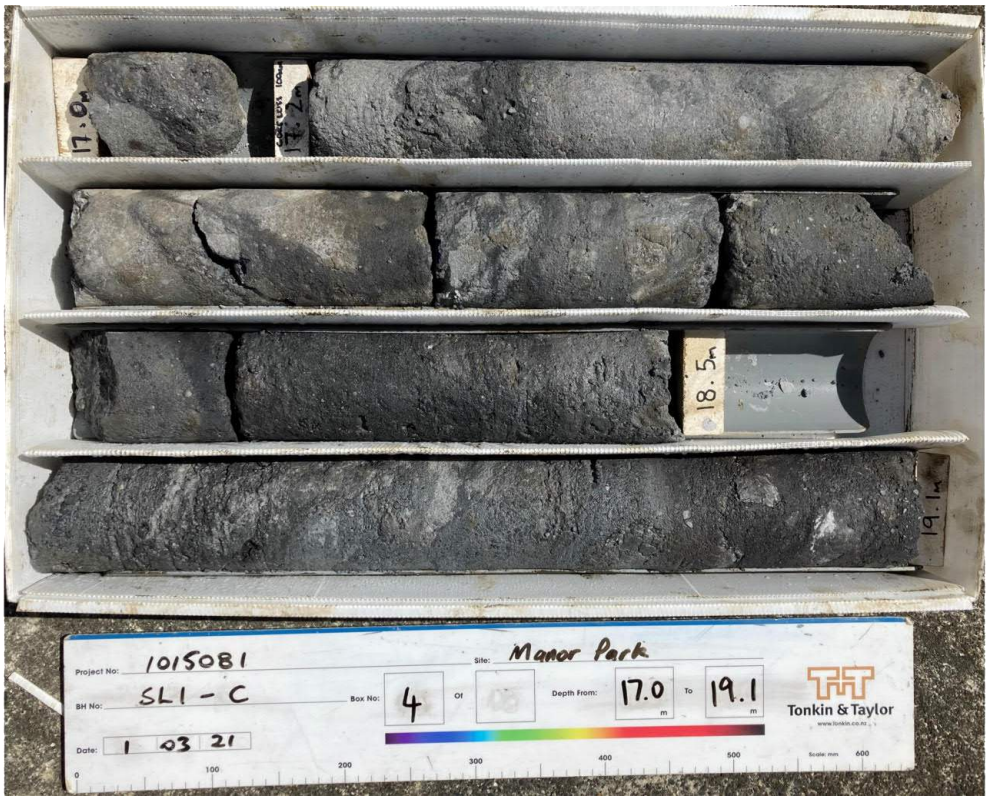
CORE PHOTOS

BOREHOLE No.: **SL1-C**

Hole Location: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441199.09 mN (NZTM2000) 1765127.21 mE R.L.: 25.50m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 01/03/2021 HOLE FINISHED: 10/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

14.85-17.00m



17.00-19.10m

CORE PHOTOS

BOREHOLE No.: **SL1-C**

Hole Location: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441199.09 mN (NZTM2000) 1765127.21 mE R.L.: 25.50m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 01/03/2021 HOLE FINISHED: 10/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

19.10-21.45m

21.45-23.50m

CORE PHOTOS

BOREHOLE No.: **SL1-C**

Hole Location: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441199.09 mN (NZTM2000) 1765127.21 mE R.L.: 25.50m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 01/03/2021 HOLE FINISHED: 10/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

23.50-26.00m

26.00-28.76m

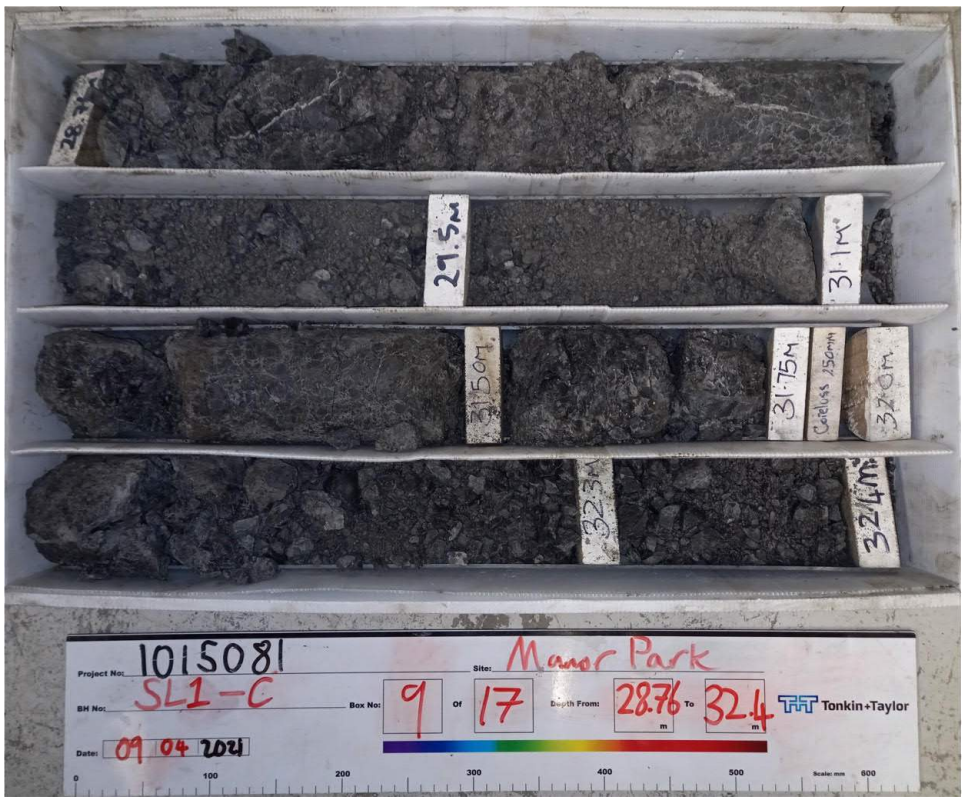
Tonkin+Taylor

CORE PHOTOS

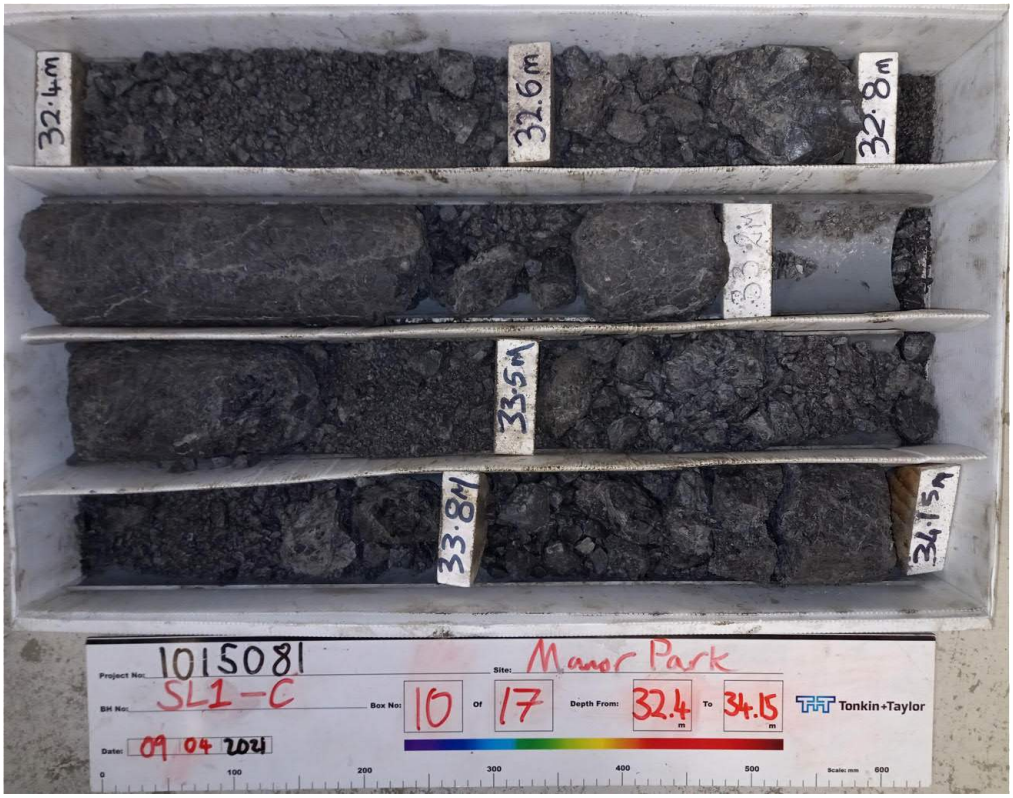
BOREHOLE No.: **SL1-C**

Hole Location: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

PROJECT: Manor Park Development		LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: (NZTM2000)	5441199.09 mN 1765127.21 mE	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 01/03/2021 HOLE FINISHED: 10/03/2021 DRILLED BY: Webster Drilling
R.L.:	25.50m		
DATUM:	NZVD2016		LOGGED BY: DAHE CHECKED: NCP



28.76-32.40m



32.40-34.15m

CORE PHOTOS

BOREHOLE No.: **SL1-C**

Hole Location: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441199.09 mN (NZTM2000) 1765127.21 mE R.L.: 25.50m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 01/03/2021 HOLE FINISHED: 10/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

34.15-36.20m

36.20-38.54m

CORE PHOTOS

BOREHOLE No.: **SL1-C**

Hole Location: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441199.09 mN (NZTM2000) 1765127.21 mE R.L.: 25.50m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 01/03/2021 HOLE FINISHED: 10/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

38.54-40.71m

40.71-42.82m

CORE PHOTOS

BOREHOLE No.: **SL1-C**

Hole Location: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441199.09 mN (NZTM2000) 1765127.21 mE R.L.: 25.50m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 01/03/2021 HOLE FINISHED: 10/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

42.82-45.00m

45.00-47.29m

CORE PHOTOS

BOREHOLE No.: **SL1-C**

Hole Location: In line with SL1-A and SL1-B, on the driveway to the abandoned paintball stall on the vacant lot.

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441199.09 mN (NZTM2000) 1765127.21 mE R.L.: 25.50m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 01/03/2021 HOLE FINISHED: 10/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

47.29-48.00m

BOREHOLE LOG

BOREHOLE No.: SL3-A

SHEET: 1 OF 2

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: At far western corner of the northernmost vacant industrial lot.

CO-ORDINATES: 5441432.76 mN, 1765339.49 mE (NZTM2000)

DIRECTION:

ANGLE FROM HORIZ.: -90°

R.L. GROUND: 32.80m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Jacob Fuller

LOGGED BY: DAHE

CHECKED: NCP

START DATE: 02/03/2021

FINISH DATE: 04/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm)	RQD (%)	Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
	0.00m: Wash boring with no sample recovered.						32 31 30 29 28 27 26 25 24 23	1 2 3 4 5 6 7 8 9							03/05/2021: Afternoon reading			

COMMENTS: Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.

Hole Depth 14.6m

Scale 1:50

Rev.: B

BOREHOLE LOG

BOREHOLE No.: SL3-A

SHEET: 2 OF 2

Tonkin+Taylor

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: At far western corner of the northernmost vacant industrial lot.

CO-ORDINATES: 5441432.76 mN, 1765339.49 mE (NZTM2000)

DIRECTION:

ANGLE FROM HORIZ.: -90°

R.L. GROUND: 32.80m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Jacob Fuller

LOGGED BY: DAHE

CHECKED: NCP

START DATE: 02/03/2021

FINISH DATE: 04/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW, SW, MW, HW, CW, DW)	Rock Strength (ES, VS, S, MS, W, VW, EW)	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm) (2000, 600, 200, 60, 20)	RQD (%)	Description & Additional Observations	Fluid Loss (%) (25, 50, 75)	Water Level	Casing	Installation	Core Box No
Rakaia Terrane	*11.60m:* Unweathered to slightly weathered, dark grey CATACLASITE. Weak. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of dark grey clay. *12.00 - 12.15m:* Pale grey vein. Weak. Subvertical. 5 to 10 mm across.			HQ3	100		22 21 20 19 18 17 16 15 14 13	11 12 13 14 15 16 17 18 19				0						
	12.40m: Unweathered to slightly weathered, black CATACLASITE. Very weak to weak. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of dark grey clay. Breaks down to silt and fine to coarse sand and gravel			HQ3	100							0						
	12.70m: Unweathered to slightly weathered, grey CATACLASITE. Weak. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of pale to dark grey clay. Colour of material varies along the core sample. *13.25 - 13.45m:* Unweathered to slightly weathered, pale grey CATACLASITE cobble. Moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of pale grey clay.			HQ3	100							0						Box 1, 11.60-14.30m
	14.6m: END OF BOREHOLE																	

COMMENTS: Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.

Hole Depth 14.6m

Scale 1:50

Rev.: B

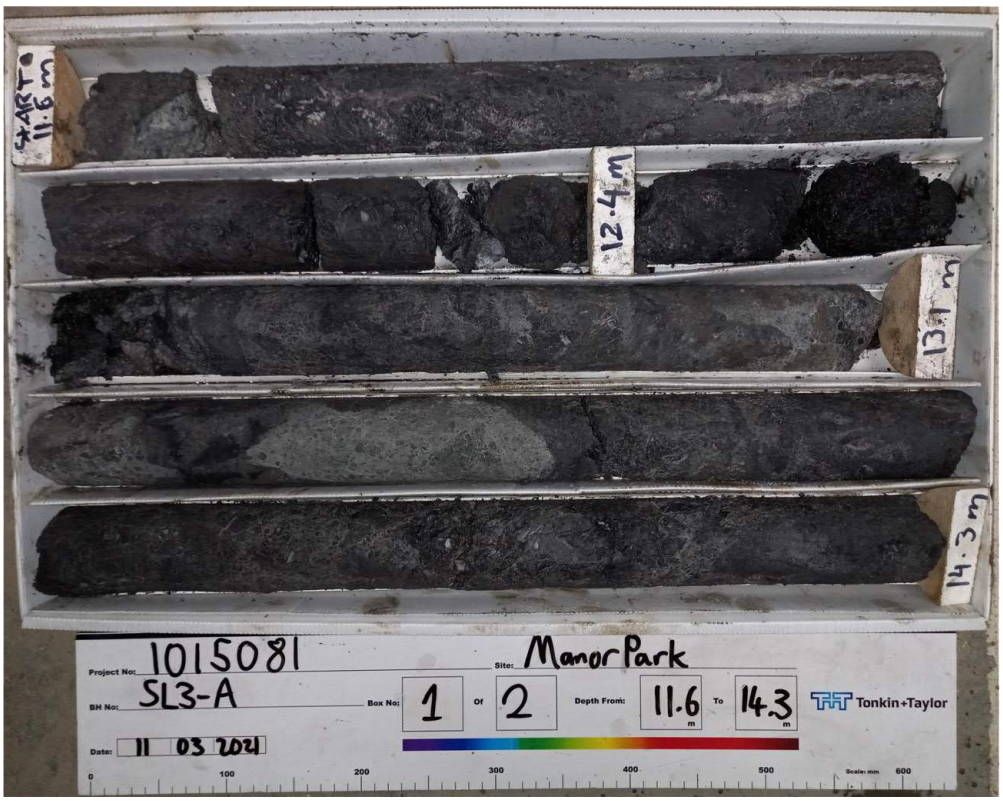
General Log - 6/05/2021 1:18:47 pm - Produced with Core-GS by GeRoc

CORE PHOTOS

BOREHOLE No.: **SL3-A**

Hole Location: At far western corner of the northernmost vacant industrial lot.

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441432.76 mN (NZTM2000) 1765339.49 mE R.L.: 32.80m DATUM: NZVD2016	DRILL TYPE: Tractor-Mounted Rig DRILL METHOD: RC	HOLE STARTED: 02/03/2021 HOLE FINISHED: 04/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP



11.60-14.30m

14.30-14.60m

BOREHOLE LOG

Tonkin+Taylor

BOREHOLE No.: SL3-B

SHEET: 1 OF 2

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: At far western corner of the northernmost vacant industrial lot.

CO-ORDINATES: 5441422.77 mN, 1765347.82 mE (NZTM2000)

DIRECTION:

ANGLE FROM HORIZ.: -90°

R.L. GROUND: 32.20m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Jacob Fuller

LOGGED BY: TH

CHECKED: NCP

START DATE: 01/03/2021

FINISH DATE: 02/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW, EW, HW, MW, HW, CW)	Rock Strength (ES, VS, S, MS, M, W, VW, EW)	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm) (2000, 600, 200, 60, 20)	RQD (%)	Description & Additional Observations	Fluid Loss (%) (25, 50, 75)	Water Level	Casing	Installation	Core Box No
	0.00m: Wash boring with no sample recovered.						32 31 30 29 28 27 26 25 24 23	0 1 2 3 4 5 6 7 8 9										

COMMENTS: 1) Groundwater level not recorded.2) Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.3) Borehole is vertical so angles of shear zones represent the angle from horizontal.

Hole Depth 14.8m

Scale 1:50

Rev.: B

BOREHOLE LOG

BOREHOLE No.: SL3-B

SHEET: 2 OF 2

Tonkin+Taylor

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: At far western corner of the northernmost vacant industrial lot.

CO-ORDINATES: 5441422.77 mN, 1765347.82 mE (NZTM2000)

DIRECTION:

ANGLE FROM HORIZ.: -90°

R.L. GROUND: 32.20m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Jacob Fuller

LOGGED BY: TH

CHECKED: NCP

START DATE: 01/03/2021

FINISH DATE: 02/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log	Fracture Spacing (mm)	RQD (%)	Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
							22	11										
	11.50m: Unweathered to slightly weathered, grey CATACLASITE. Moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of pale grey clay.			HQ3	66		21					0						
	12.70 - 12.73m: Shear zone at 80°. 3 mm across. Hard, dark grey.			HQ3	80		20	12				0						
	13.00m: Core loss.						19	13										
	13.30m: Unweathered to slightly weathered, grey CATACLASITE. Moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of pale grey clay.			HQ3	112		18					0						
	14.20 - 14.23m: Shear zone at 80°. 3 mm across. Hard, dark grey.			HQ3	100			14				0						Box 1, 11.50-14.60m
	14.8m: END OF BOREHOLE						17	15										
							16	16										
							15	17										
							14	18										
							13	19										

COMMENTS: 1) Groundwater level not recorded.2) Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.3) Borehole is vertical so angles of shear zones represent the angle from horizontal.

Hole Depth 14.8m

Scale 1:50

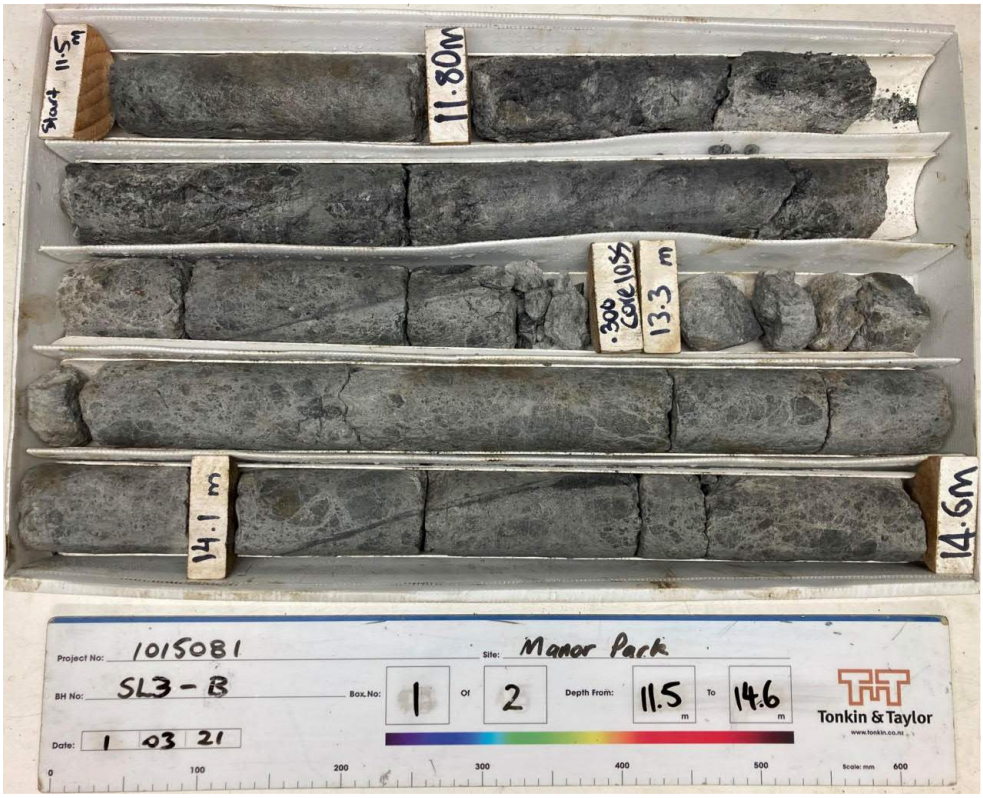
Rev.: B

CORE PHOTOS

BOREHOLE No.: **SL3-B**

Hole Location: At far western corner of the northernmost vacant industrial lot.

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441422.77 mN (NZTM2000) 1765347.82 mE R.L.: 32.20m DATUM: NZVD2016	DRILL TYPE: Tractor-Mounted Rig DRILL METHOD: RC	HOLE STARTED: 01/03/2021 HOLE FINISHED: 02/03/2021 DRILLED BY: Webster Drilling LOGGED BY: TH CHECKED: NCP



11.50-14.60m

14.60-14.80m

Tonkin+Taylor

BOREHOLE LOG

BOREHOLE No.: SL3-C

SHEET: 1 OF 5

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

CO-ORDINATES: (NZTM2000) 5441414.59 mN 1765355.11 mE

DIRECTION: 310°

ANGLE FROM HORIZ.: -45°

R.L. GROUND: 32.30m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Cody Longstaff

LOGGED BY: DAHE

CHECKED: NCP

START DATE: 12/03/2021

FINISH DATE: 23/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW, EW, HW, MW, HW, CW)	Rock Strength (ES, VS, S, MS, M, W, VW, EW)	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log (relative to inclination)	ROCK DEFECTS: Fracture Spacing (mm) (2000, 600, 200, 60, 20)	ROCK DEFECTS: RQD (%)	ROCK DEFECTS: Description & Additional Observations	Fluid Loss (%) (25, 50, 75)	Water Level	Casing	Installation	Core Box No
	0.00m: Dark. Wash boring with no sample recovered.						32 31 30 29 28 27 26	1 2 3 4 5 6 7 8 9							16/03/2021: Water level same over following two days.			

COMMENTS: 1) Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.2) Measurements of groundwater level on 5th and 8th March were both taken on the mornings of those days.

Hole Depth 48.5m

Scale 1:50

Rev.: C

General Log - 6/05/2021 6:07:49 pm - Produced with Core-GS by GeRoc

BOREHOLE LOG

BOREHOLE No.: SL3-C

SHEET: 2 OF 5

Tonkin+Taylor

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

CO-ORDINATES: 5441414.59 mN, 1765355.11 mE (NZTM2000)

DIRECTION: 310°

ANGLE FROM HORIZ.: -45°

R.L. GROUND: 32.30m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Cody Longstaff

LOGGED BY: DAHE

CHECKED: NCP

START DATE: 12/03/2021

FINISH DATE: 23/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE (SOIL: Classification, colour, consistency / density, moisture, plasticity; ROCK: Weathering, colour, fabric, name, strength, cementation)	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log (relative to inclination)	Fracture Spacing (mm)	RQD (%)	Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
Rakaia Terrane	*14.80m:* Unweathered to slightly weathered, grey CATACLASITE. Moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of pale grey clay.	UW SW MW HW CW	ES VS S MS M W VW EW	PQ3	83		25 24 23 22 21 20 19	11 12 13 14 15 16 17 18 19				0						
	16.40 - 16.42m: Colour changes to dark grey. Band of dark grey mudstone across sample.			PQ3	100							0						
				PQ3	90							0						Box 1, 14.80-17.00m
	17.80 - 17.85m: Colour changes to dark grey. Band of dark grey mudstone across sample.																	
	18.45 - 18.75m: Colour changes to dark grey. Matrix composed of dark grey clay. Weak.			PQ3	93							0						Box 2, 17.00-19.29m
	19.55 - 19.65m: Dark grey, weak.											0						

COMMENTS: 1) Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.2) Measurements of groundwater level on 5th and 8th March were both taken on the mornings of those days.

Hole Depth 48.5m

Scale 1:50

Rev.: C

BOREHOLE LOG

Tonkin+Taylor

BOREHOLE No.: SL3-C

SHEET: 3 OF 5

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

CO-ORDINATES: (NZTM2000) 5441414.59 mN, 1765355.11 mE

DIRECTION: 310°

ANGLE FROM HORIZ.: -45°

R.L. GROUND: 32.30m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Cody Longstaff

LOGGED BY: DAHE

CHECKED: NCP

START DATE: 12/03/2021

FINISH DATE: 23/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering (UW SW MW HW CW)	Rock Strength (ES VS S MS W VW EW)	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log (relative to inclination)	Fracture Spacing (mm) (2000 600 200 60 20)	RQD (%)	Description & Additional Observations	Fluid Loss (%) (25 50 75)	Water Level	Casing	Installation	Core Box No
Rakaia Terrane	*20.20 - 20.50m:* Colour changes to dark grey. Matrix composed of dark grey clay. *20.50 - 21.10m:* Material becomes weak. Partially recovered as fine to coarse sand and fine to coarse gravel; dark grey.			PQ3	100		18	21				0						Box 3, 19.29-21.70m
	22.05 - 22.25m: Dark grey. Cataclasite with dark grey matrix. Weak. Abrupt transition.			PQ3	100		17	22				0						
	25.00 - 25.20m: Partially recovered as fine to coarse, angular gravel and sand. *25.30 - 25.45m:* Rock is recovered as fine to coarse, angular gravel and sand. *25.45 - 25.90m:* Colour darkens to dark grey. *25.60 - 25.62m:* Pale grey band of cataclasite at 45°. Band is estimated to be subvertical when in-situ. *25.90 - 25.95m:* Recovered as fine to coarse, angular gravel.			PQ3	100		16	23				0						Box 4, 21.70-23.67m
	25.95m: Unweathered to slightly weathered, pale grey MUDSTONE and SILTSTONE. Moderately strong, extremely closely spaced joints. Sheared rock. Discontinuities are filled with pale grey quartz.			PQ3	100		15	24				0						
	26.55 - 26.65m: Recovered as fine to coarse, angular gravel. *26.80 - 26.85m:* Recovered as fine to coarse, angular gravel.			PQ3	80		14	25				0						Box 5, 23.67-25.88m
	27.00m: Unweathered to slightly weathered, grey CATACLASITE. Weak. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of pale grey clay. Partially recovered as fine to coarse, angular gravel from 27.0 to 27.15 m. *27.15 - 27.25m:* Recovered as fine to coarse, angular gravel. *27.45 - 27.50m:* Recovered as fine to coarse, angular gravel.			PQ3	100		13	26				0						
	27.50m: Core loss.			PQ3	77		12	27				0						
	28.20m: Unweathered to slightly weathered, grey CATACLASITE. Moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of pale grey clay. *28.90 - 29.10m:* Dark grey band of cataclasite at approximately 60°. Dip angle in the core implies an in-situ dip angle of approximately 15° from vertical. *29.15 - 29.25m:* Sheared rock. Very closely spaced joints.			PQ3	100		11	28				0						Box 6, 25.88-28.60m
				PQ3	100		10	29				0						
				PQ3	100							0						

COMMENTS: 1) Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.2) Measurements of groundwater level on 5th and 8th March were both taken on the mornings of those days.

Hole Depth 48.5m

Scale 1:50

Rev.: C

BOREHOLE LOG

Tonkin+Taylor

BOREHOLE No.: SL3-C

SHEET: 4 OF 5

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

CO-ORDINATES: (NZTM2000) 5441414.59 mN, 1765355.11 mE

DIRECTION: 310°

ANGLE FROM HORIZ.: -45°

R.L. GROUND: 32.30m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Cody Longstaff

LOGGED BY: DAHE

CHECKED: NCP

START DATE: 12/03/2021

FINISH DATE: 23/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log (relative to inclination)	ROCK DEFECTS: Fracture Spacing (mm)	RQD (%)	ROCK DEFECTS: Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
Rakaia Terrane	*33.25 - 33.45m:* Large, dark grey, argillitic band. Weak. 60° relative to core. Dip angle in core suggests an in-situ angle of approximately 15° from vertical.			PQ3	100		11	30				0						Box 7, 28.60-30.58m
				PQ3	100		10	31				0						
				PQ3	100		9	32				0						Box 8, 30.58-32.50m
				PQ3	100		8	33				0						
	34.95m: Unweathered to slightly weathered, dark grey CATACLASITE. Moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of dark grey clay.			PQ3	100		7	34				0						Box 9, 32.50-34.55m
	35.45m: Unweathered to slightly weathered, pale grey CATACLASITE. Moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of pale grey clay. *36.00 - 36.60m:* Colour becomes dark grey. Clay infill is dark grey.			PQ3	93		6	35				0						
				PQ3	100		5	36				0						
	38.51m: Core loss.			PQ3	44		4	37				0						Box 10, 34.55-36.81m
	38.90m: Unweathered to slightly weathered, pale grey CATACLASITE. Weak to moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of pale grey clay.			PQ3	75		3	38				0						
	39.05m: 39.05 to 39.3 m: Core loss.			PQ3	0		2	39				0						
	39.30m: Unweathered to slightly weathered, pale grey CATACLASITE. Description same as described at 38.9 m.			PQ3	100		1					0						Box 11, 36.81-39.45m
				PQ3	100							0						

COMMENTS: 1) Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.2) Measurements of groundwater level on 5th and 8th March were both taken on the mornings of those days.

Hole Depth 48.5m

Scale 1:50

Rev.: C

BOREHOLE LOG

BOREHOLE No.: SL3-C

SHEET: 5 OF 5

Tonkin+Taylor

PROJECT: Manor Park Development

JOB No.: 1015081.0000

LOCATION: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

CO-ORDINATES: 5441414.59 mN, 1765355.11 mE (NZTM2000)

DIRECTION: 310°

ANGLE FROM HORIZ.: -45°

R.L. GROUND: 32.30m

R.L. COLLAR:

DATUM: NZVD2016

SURVEY: Total Station\Surveyed

DRILLED BY: Cody Longstaff

LOGGED BY: DAHE

CHECKED: NCP

START DATE: 12/03/2021

FINISH DATE: 23/03/2021

CONTRACTOR: Webster Drilling

GEOLOGICAL UNIT	DESCRIPTION OF CORE SOIL: Classification, colour, consistency / density, moisture, plasticity ROCK: Weathering, colour, fabric, name, strength, cementation	Rock Weathering	Rock Strength	Sampling Method	Core Recovery (%)	Testing	RL (m)	Depth (m)	Graphic Log	ROCK DEFECTS: Defect Log (relative to inclination)	ROCK DEFECTS: Fracture Spacing (mm)	ROCK DEFECTS: RQD (%)	ROCK DEFECTS: Description & Additional Observations	Fluid Loss (%)	Water Level	Casing	Installation	Core Box No
Rakaia Terrane	*39.95 - 41.10m:* Recovered as fine to coarse, angular gravel and sand. *40.10 - 40.20m:* Recovered as fine to coarse, angular gravel and sand.			PQ3	100							0						
				PQ3	100			41				0						
	41.10 - 41.38m: Cataclasite is smeared with CLAY; pale grey. Very soft, saturated.			PQ3	100							0						Box 12, 39.45-41.38m
				PQ3	100			42				0						
				PQ3	100							0						
				PQ3	100			43				0						Box 13, 41.38-43.35m
				PQ3	57							0						
	44.30 - 44.40m: Recovered as fine to coarse, angular gravel.			PQ3	100			44				0						
				PQ3	100							0						
				PQ3	78			45				0						Box 14, 43.35-45.72m
	46.10m: Core loss.			PQ3	0							0						
	46.65m: Unweathered to slightly weathered, grey CATACLASITE. Moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of pale grey clay. *47.00 - 47.15m:* Recovered as fine to coarse, angular gravel and sand.			PQ3	100			46				0						
	47.15m: Core loss.			PQ3	0			47				0						
	47.80m: Unweathered to slightly weathered, grey CATACLASITE. Moderately strong. Comprises fine to coarse, angular sandstone, siltstone and mudstone gravel within a matrix of pale grey clay.			PQ3	100							0						
	48.05m: Unweathered to slightly weathered, pale grey MUDSTONE and SILTSTONE. Moderately strong, extremely closely spaced joints. Sheared rock. Discontinuities are filled with pale grey quartz. *48.45 - 48.50m:* Recovered as fine to coarse, angular gravel.							48										Box 15, 45.72-48.50m
	48.5m: END OF BOREHOLE							49										

COMMENTS: 1) Due to the significant crushing and shearing throughout the length of the core, no specific defect data has been recorded.2) Measurements of groundwater level on 5th and 8th March were both taken on the mornings of those days.

Hole Depth 48.5m

Scale 1:50

Rev.: C

CORE PHOTOS

BOREHOLE No.: **SL3-C**

Hole Location: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441414.59 mN (NZTM2000) 1765355.11 mE R.L.: 32.30m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 12/03/2021 HOLE FINISHED: 23/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

14.80-17.00m

17.00-19.29m

Tonkin+Taylor

CORE PHOTOS

BOREHOLE No.: **SL3-C**

Hole Location: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441414.59 mN (NZTM2000) 1765355.11 mE R.L.: 32.30m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 12/03/2021 HOLE FINISHED: 23/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

19.29-21.70m

21.70-23.67m

Tonkin+Taylor

CORE PHOTOS

BOREHOLE No.: **SL3-C**

Hole Location: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441414.59 mN (NZTM2000) 1765355.11 mE R.L.: 32.30m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 12/03/2021 HOLE FINISHED: 23/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

23.67-25.88m

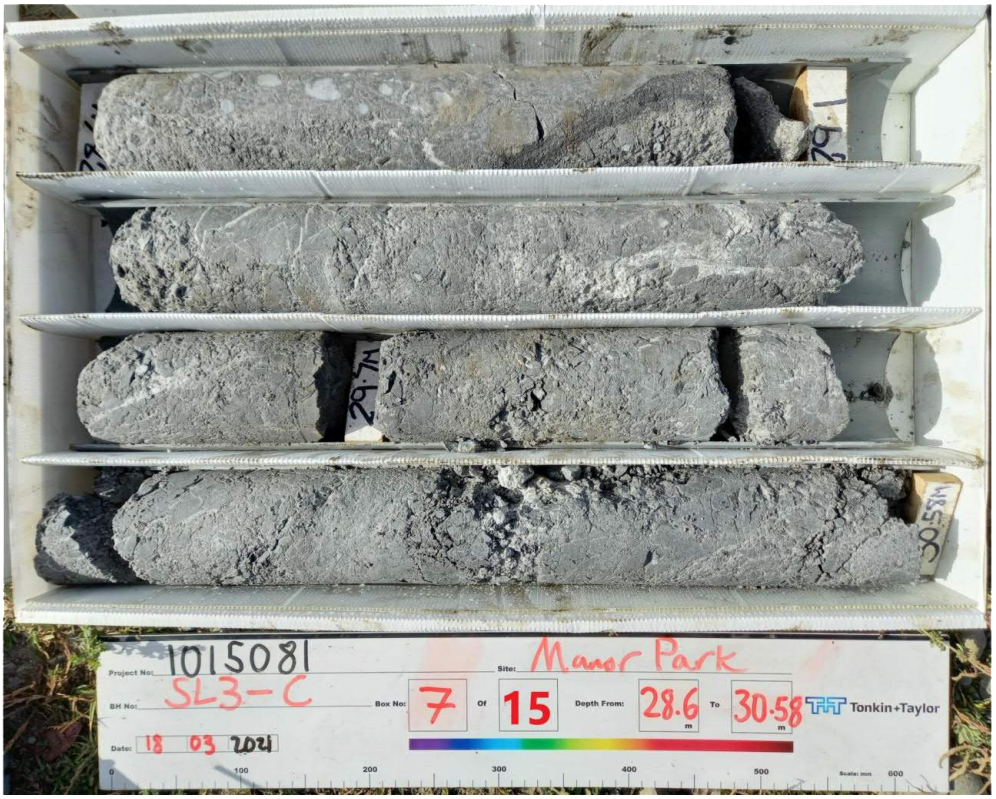
25.88-28.60m

CORE PHOTOS

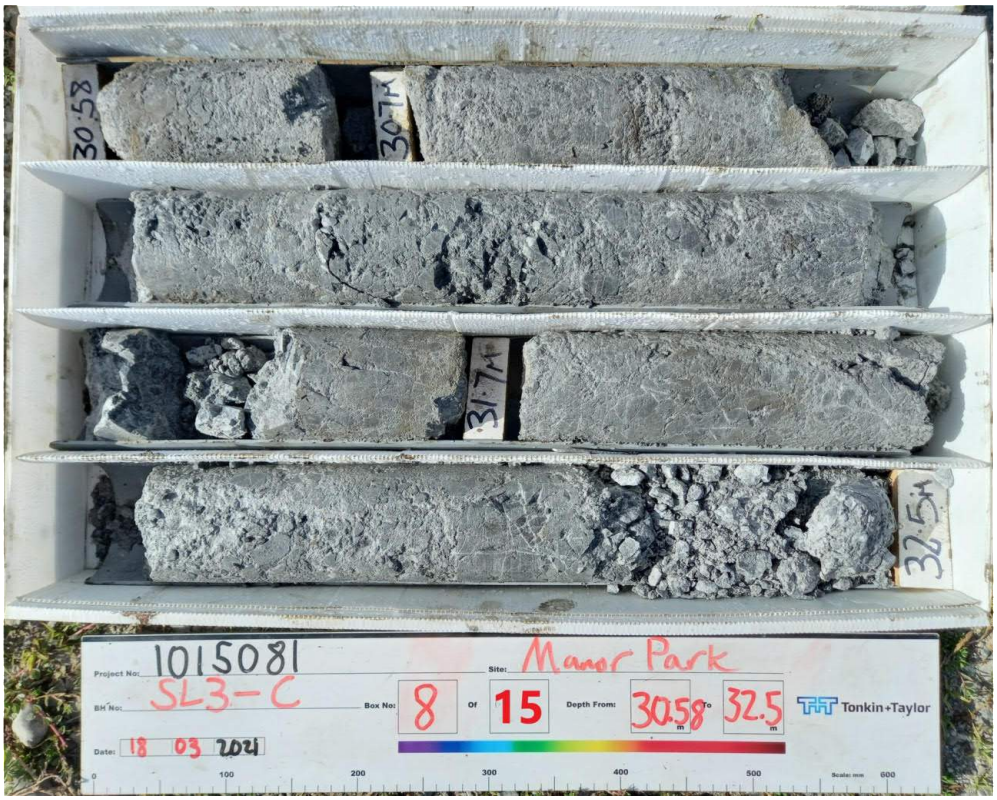
BOREHOLE No.: **SL3-C**

Hole Location: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

PROJECT: Manor Park Development		LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: (NZTM2000)	5441414.59 mN 1765355.11 mE	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 12/03/2021 HOLE FINISHED: 23/03/2021
R.L.:	32.30m		DRILLED BY: Webster Drilling
DATUM:	NZVD2016		LOGGED BY: DAHE CHECKED: NCP



28.60-30.58m



30.58-32.50m

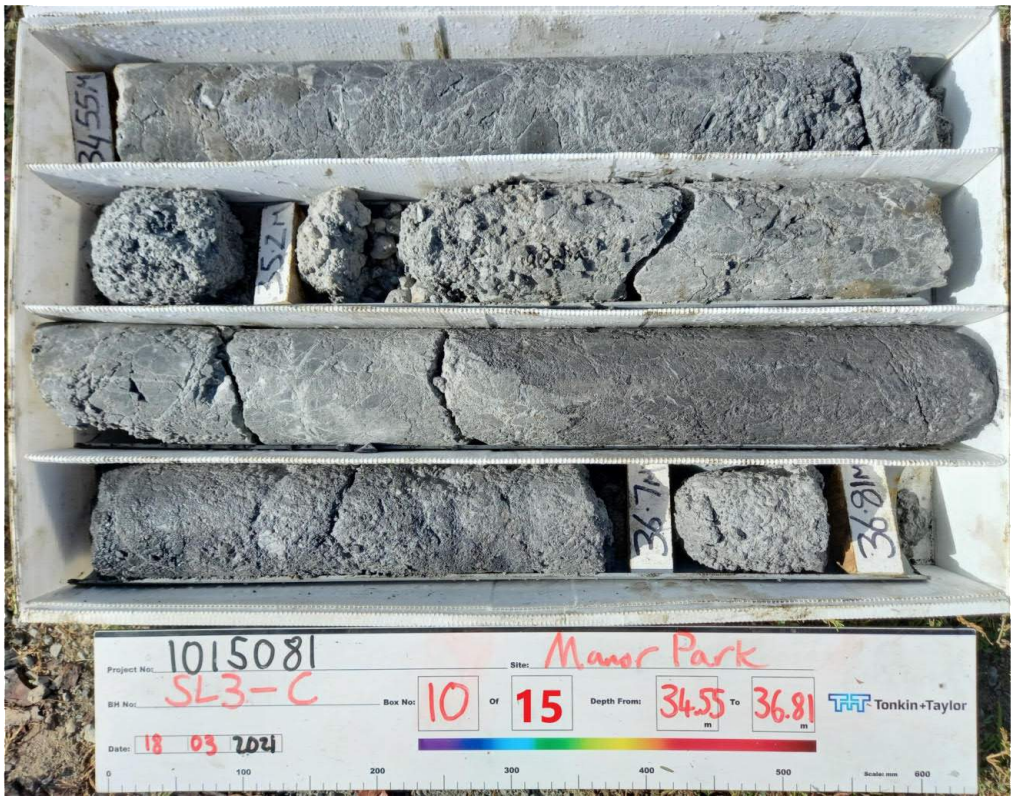
CORE PHOTOS

BOREHOLE No.: **SL3-C**

Hole Location: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

PROJECT: Manor Park Development		LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: (NZTM2000)	5441414.59 mN 1765355.11 mE	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 12/03/2021 HOLE FINISHED: 23/03/2021 DRILLED BY: Webster Drilling
R.L.:	32.30m		
DATUM:	NZVD2016		LOGGED BY: DAHE CHECKED: NCP

32.50-34.55m



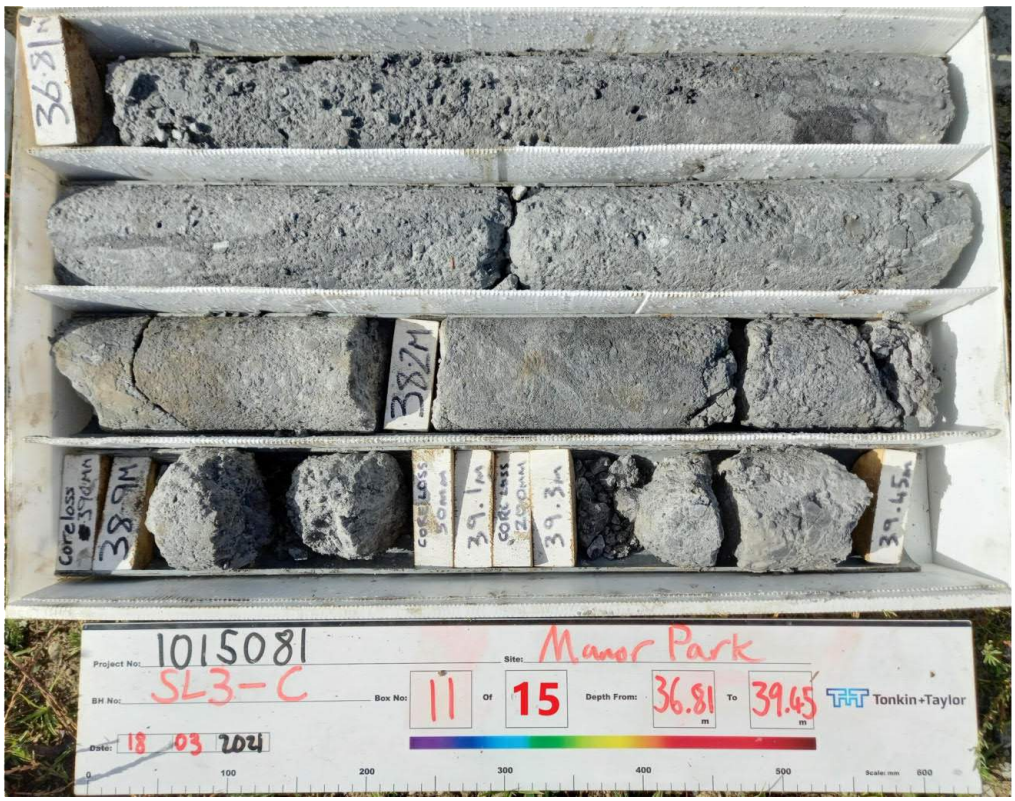
34.55-36.81m

CORE PHOTOS

BOREHOLE No.: **SL3-C**

Hole Location: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

PROJECT: Manor Park Development		LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: (NZTM2000)	5441414.59 mN 1765355.11 mE	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 12/03/2021 HOLE FINISHED: 23/03/2021 DRILLED BY: Webster Drilling
R.L.:	32.30m		
DATUM:	NZVD2016		LOGGED BY: DAHE CHECKED: NCP



36.81-39.45m

39.45-41.38m

CORE PHOTOS

BOREHOLE No.: **SL3-C**

Hole Location: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441414.59 mN (NZTM2000) 1765355.11 mE R.L.: 32.30m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 12/03/2021 HOLE FINISHED: 23/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

41.38-43.35m

43.35-45.72m

CORE PHOTOS

BOREHOLE No.: **SL3-C**

Hole Location: At far western corner of the northernmost vacant industrial lot. In line with SL3-A and SL3-B

PROJECT: Manor Park Development	LOCATION:	JOB No.: 1015081.0000
CO-ORDINATES: 5441414.59 mN (NZTM2000) 1765355.11 mE R.L.: 32.30m DATUM: NZVD2016	DRILL TYPE: Atlas Drill Rig DRILL METHOD: RC	HOLE STARTED: 12/03/2021 HOLE FINISHED: 23/03/2021 DRILLED BY: Webster Drilling LOGGED BY: DAHE CHECKED: NCP

45.72-48.50m

Appendix C: Supporting documentation

- **A J Sutherland Consulting. Manor Park seismic refraction survey, January 2021**

Manor Park
Seismic Refraction Survey

January 2021

A J Sutherland Consulting Ltd

Prepared for Tonkin and Taylor

Prepared by Alan Sutherland

Contents

1 Introduction

This report describes the test procedures and results of a seismic refraction survey, comprising three lines, at Manor Park. The site is accessed from Benmore Crescent.

The site work for these lines was completed between 10 November and 16 December 2020.

2 Seismic Refraction Surveying Procedures

The seismic refraction survey was carried out using small explosive charges (shots) placed in augered holes. The compression wave arrival times, for each shot, were measured on a spread of up to 24 geophones at a time, connected to cables laid along the ground. The lines were marked out by tape measure and pegged or marked on the ground. The end points of the lines were surveyed later. The survey data is shown in Appendix C.

Shots were placed at regular intervals along the line and offset from the end of each spread. A total of up to 6 shots were fired for each spread of 24 geophones.

Data were recorded on a 24 channel Geometrics Geode digital seismograph which was attached to the shot firing equipment. Shot firing was controlled by the geophysicist operating the seismograph after receiving an “all clear” from the geophysicist placing the charges. The explosive used in this survey was Senatel Magnum^{TM} emulsion explosive, initiated with instantaneous electric detonators.

3 Data Processing and Interpretation

The first stage of the data processing, involving measurement of the p-wave arrival times for each shot was carried out using LabView™ routines. Subsequent processing was carried out interactively using spreadsheet calculations, rather than by relying on semi-automatic processing software.

Seismic velocities and depths to shallow layers were determined using the Plus-Minus method, which is essentially the same as the GRM method for shallow refractors. The program GRAPHER™ was used plot the depth and velocity data and to measure the seismic velocities from the gradients of linear fits applied to appropriate segments of the data.

The calculations used to produce the profiles are based on some assumptions. For example, both velocity and depth calculations assume that seismic waves travel along the survey line in two dimensions (longitudinal and vertical). If there are major lateral variations in the refractor depth, then this assumption may be inaccurate and the calculated “depth” may in fact be a slope distance to a point on the refractor surface to the side of the seismic line.

The interpretation also assumes that layers will increase in velocity with depth. Any layer with a velocity lower than the layer above will not be detected and will lead to an error in the depth calculation.

Velocities calculated are the velocity at the top of a particular layer and these velocities may increase slightly within the layer.

Intercepts and delay times from either direction were also used to determine depths to rock to supplement the depths calculated by the Plus-Minus method. This was generally used where there was insufficient overlap to use the Plus-Minus method for all geophone positions.

Low velocity zones were identified on the minus times plot, where shots from opposite ends of the line are subtracted from each other. This is normally used to determine the velocity of the rock, but will also indicate low velocity zones within the rock.

In addition, the signal amplitude of the signal was looked at to determine whether there was an increase in the attenuation, coinciding with the low velocity zone. This was useful for lines SL2 and SL3, but on SL1 the location of the low velocity zone coincided with the edge of a concrete slab at the surface which influenced the signal amplitude.

4 Survey Results

Cross sections of each seismic line are attached in Appendix A and time distance plots are shown in Appendix B. The cross sections show:

- the estimated ground surface profile along each line,
- seismic compression wave (p-wave) velocity and thickness of the various surface layers and
- the compression wave velocity of the rock layer.

All velocities referred to are compression wave velocities measured in metres per second (m/s).

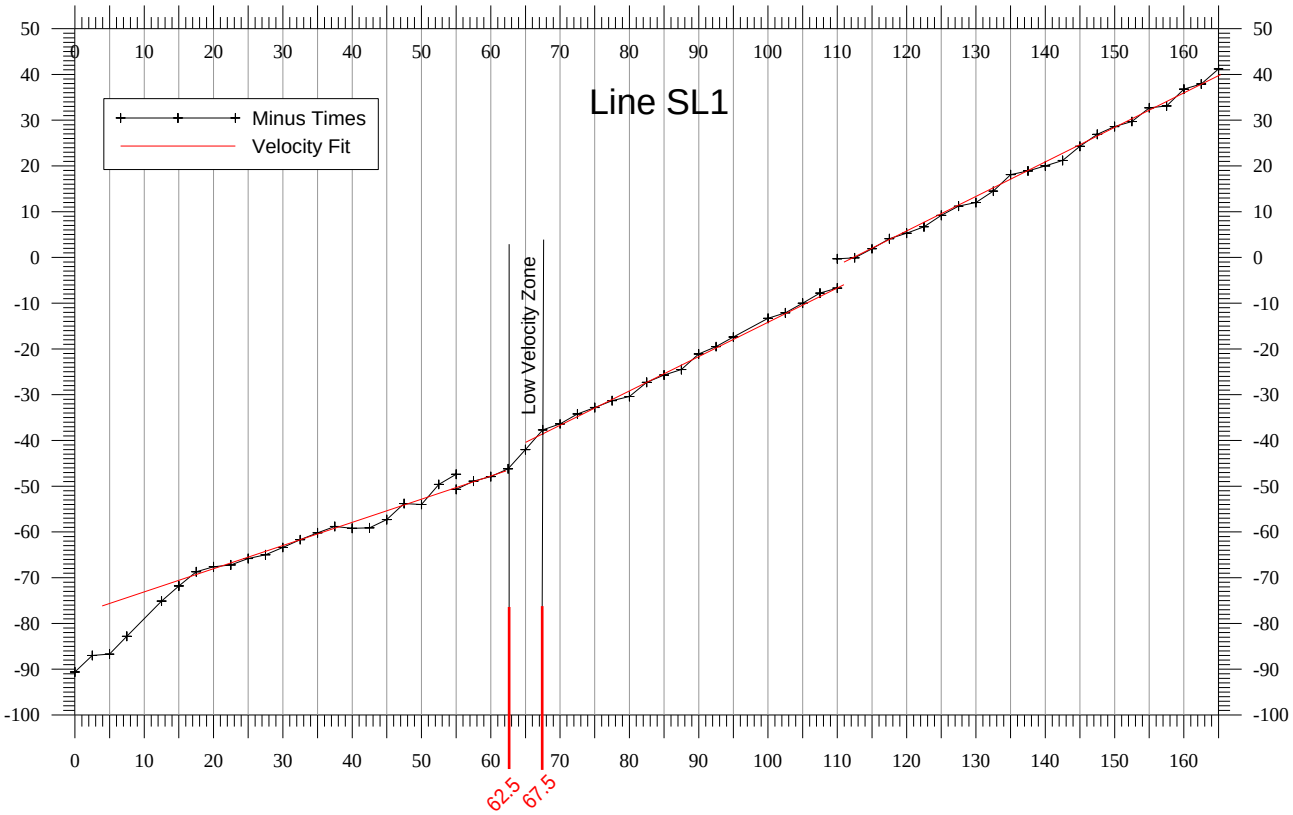
The following is a brief description of any features found on each of the seismic lines. The purpose of the survey was to locate low velocity zones and/or steps associated with the Wellington Fault.

4.1 Seismic Line 1

This line ran along an access track, starting on the grass slope up to SH2, at the end of Benmore Crescent. The total length of the line is 165 metres. The geophone spacing was 2.5m.

A surface layer of 300m/s is present along all of the line and an intermediate layer of 900m/s is also present. The rock layer has a velocity of 2750m/s along the eastern end of the line and 3900m/s at the western end of the line.

The plot below shows the times for the end shots at peg zero subtracted from the times for the offset shot at the far end of the line. The slope of the line is related to the velocity of the rock where the refraction is from the rock. A low velocity zone with a loss of 4 milliseconds was found between pegs 62.5 and 67.5m.



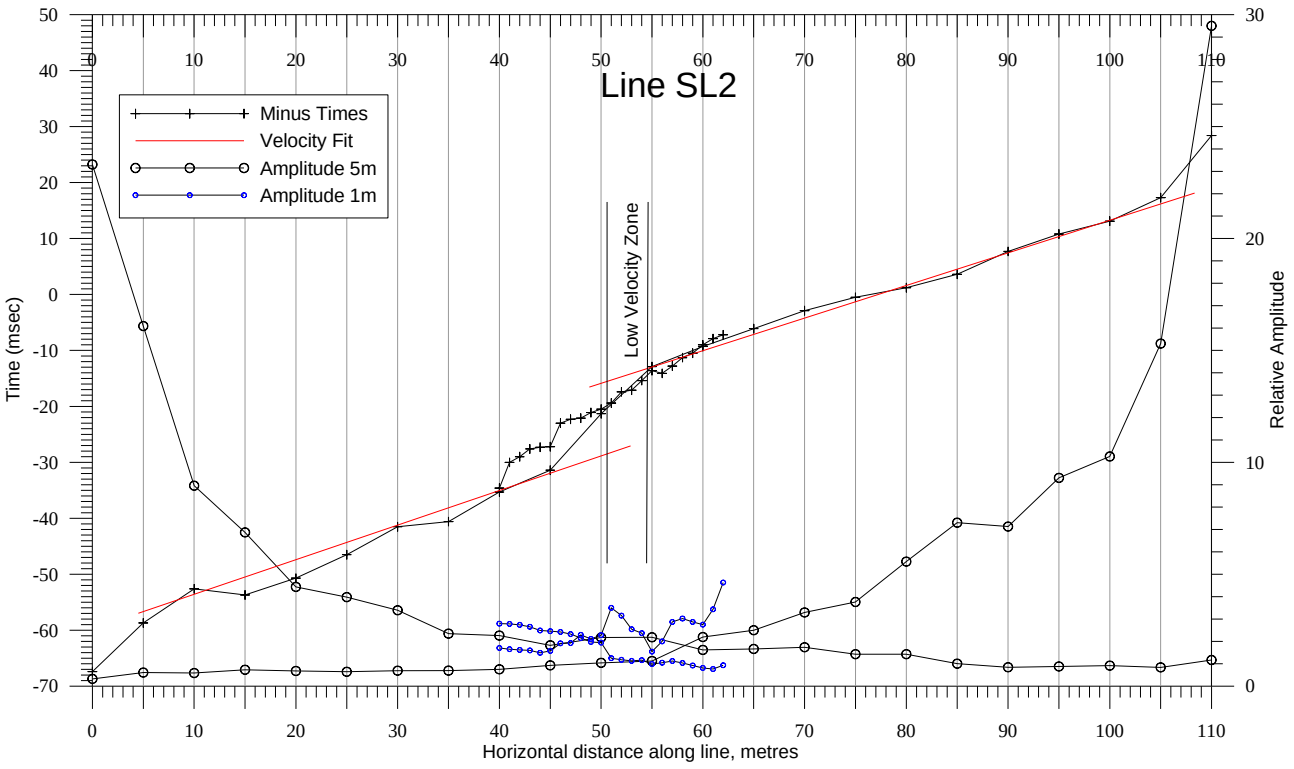
4.2 Seismic Line 2

This line to the east of Benmore Crescent, beside the stream, North of SL1, then crossed the stream and ran up the slope to a flat area of fill. The total length of the line is 110 metres. The geophone spacing was 5m.

After firing 6 shots, the arrival times for the two offset shots were picked and a velocity plot of the line was made to locate the likely position of the low velocity zone. The geophones were then placed at 1m spacing over the likely zone and two more shots, at the offset positions were fired.

A surface layer of 250 to 300m/s is present along all of the line and an intermediate layer of 700 to 800m/s is also present. The rock layer has a velocity of 2900m/s along the length of the line.

The plot below shows the times for the offset shots from peg zero subtracted from the times for the offset shot at the far end of the line. The slope of the line is related to the velocity of the rock where the refraction is from the rock. A low velocity zone with a loss of 6 milliseconds was found between pegs 45 and 55m. Additionally, the maximum amplitude of the signal at each geophone, for each offset shot is shown. The signal should be attenuated as it passes through the low velocity zone. The values of amplitude will be affected by background noise superimposed on the signal so may have some scatter in the values. The 1m spaced shot from the zero end of the shows a sudden step between 50 and 51m, with a relatively even attenuation either side.
Taking into account the velocity step and the amplitude changes the most likely position of the low velocity zone is between pegs 50 to 55m.



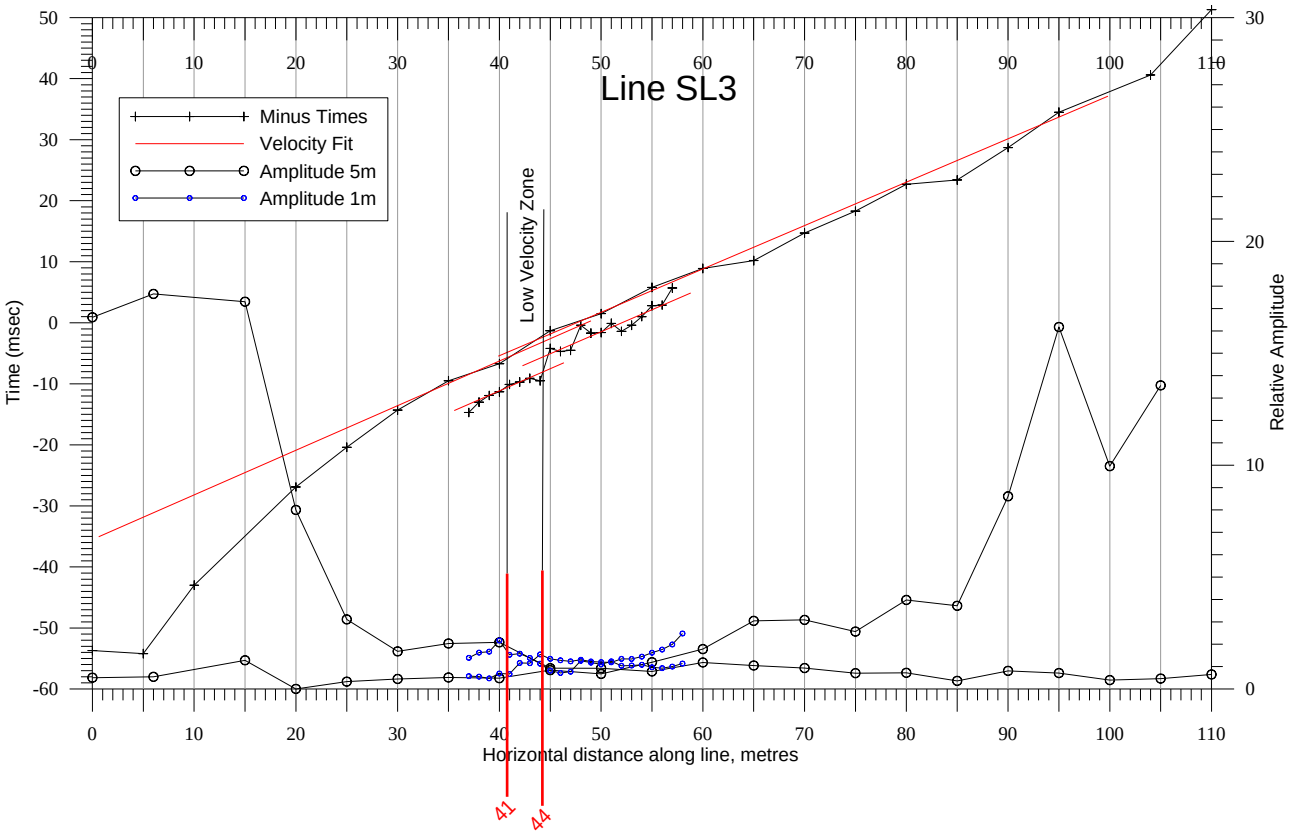
4.3 Seismic Line 3

This line to the east of Benmore Crescent, beside the stream, further North of SL2, then crossed the stream and ran up the slope to a flat area of fill. The total length of the line is 110 metres. The initial geophone spacing was 5m.

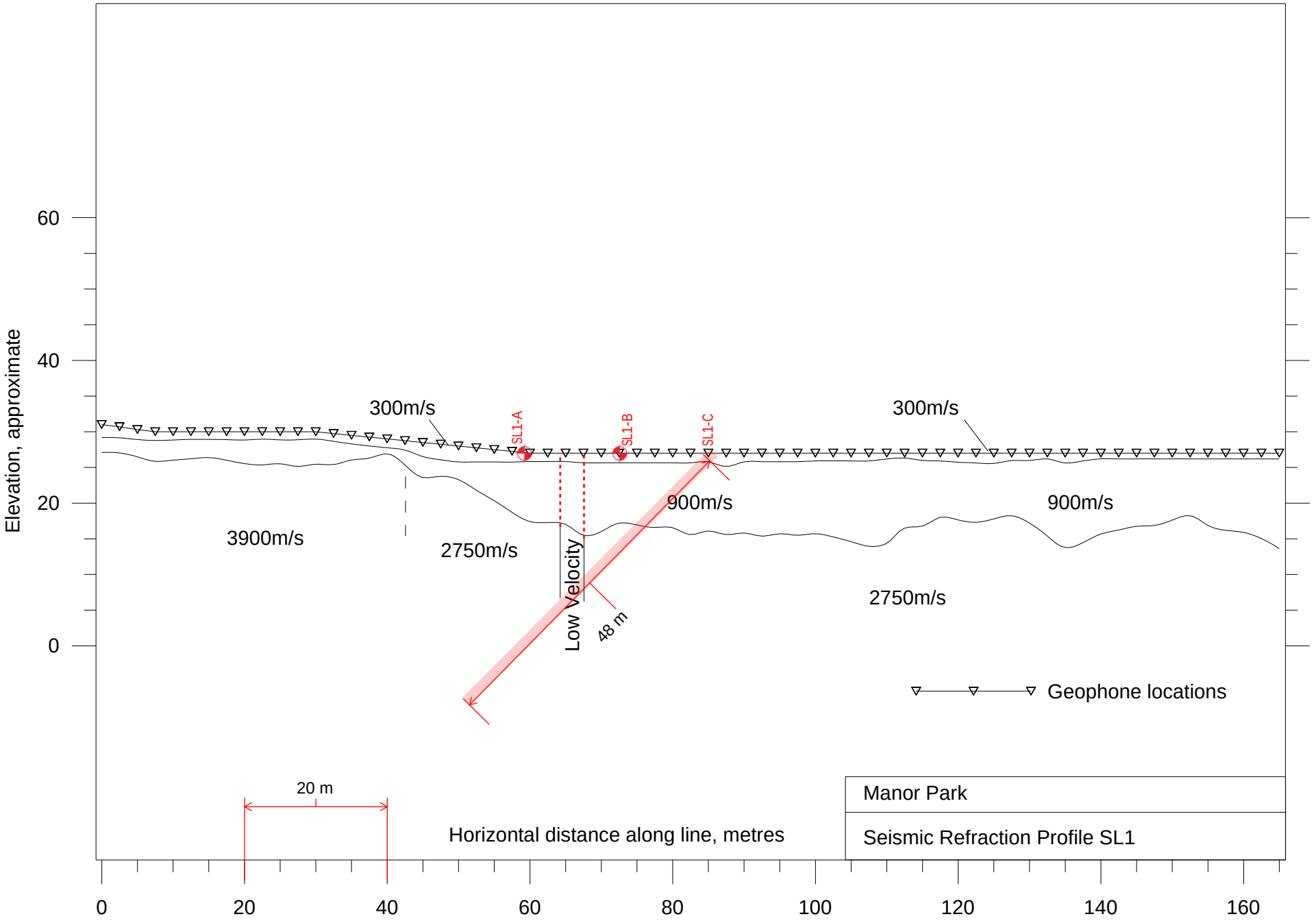
After firing 6 shots, the arrival times for the two offset shots were picked and a velocity plot of the line was made to locate the likely position of the low velocity zone. The geophones were then placed at 1m spacing over the likely zone and two more shots, at the offset positions were fired.

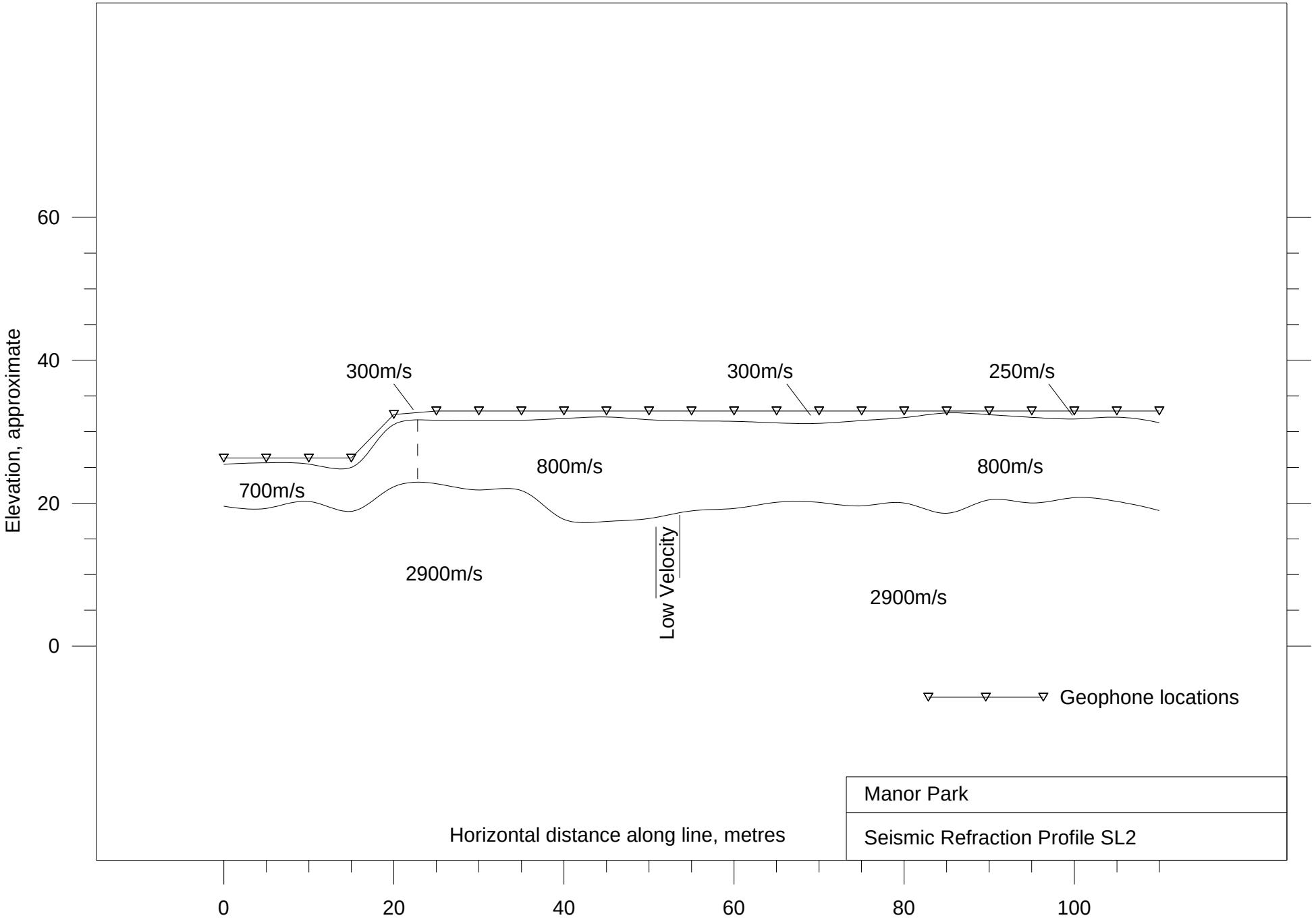
A surface layer of 300m/s is present along all of the line and an intermediate layer of 600 to 800m/s is also present. The rock layer has a velocity of 2900m/s along the length of the line.

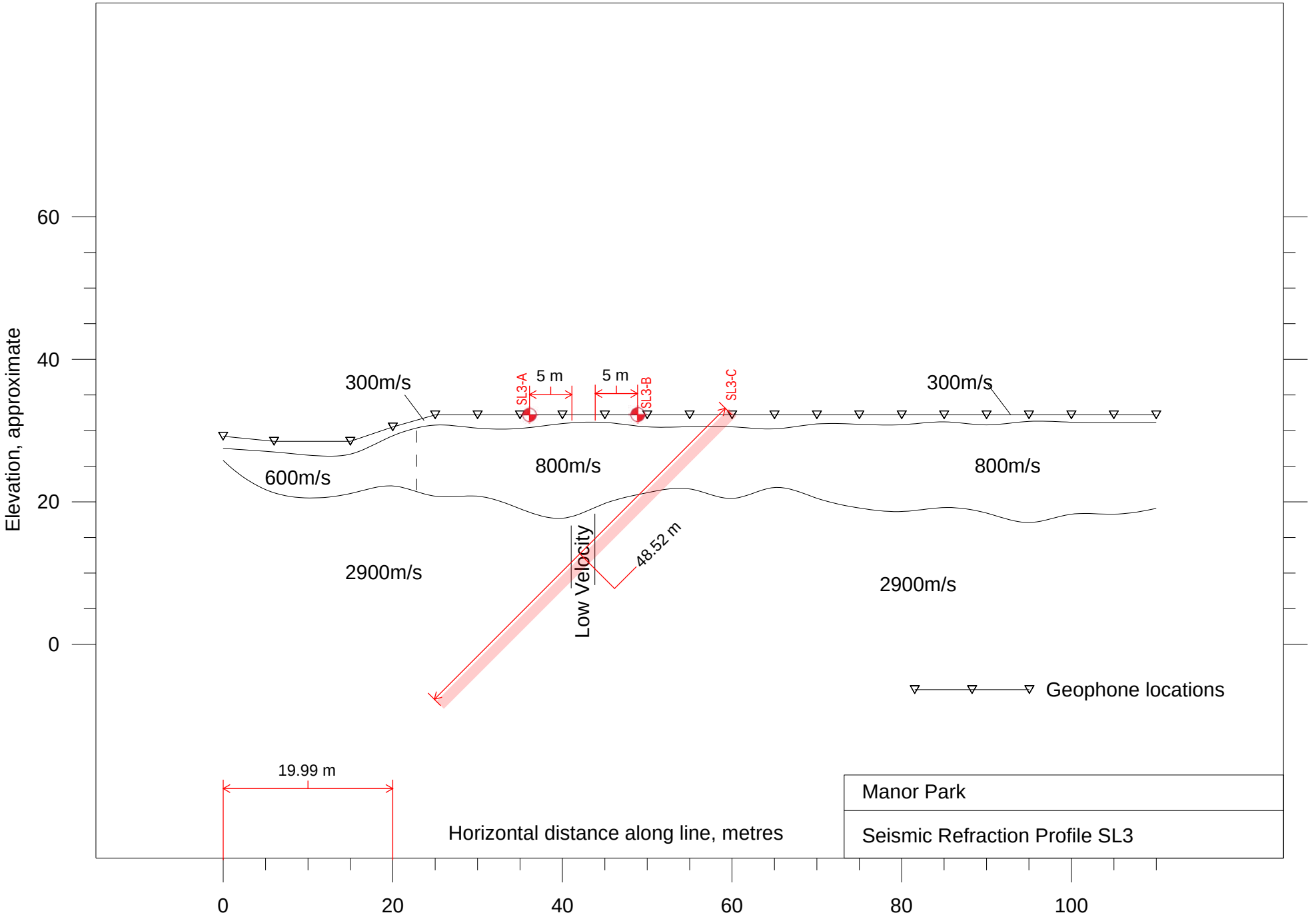
The plot below shows the times for the offset shots from peg zero subtracted from the times for the offset shot at the far end of the line. The slope of the line is related to the velocity of the rock where the refraction is from the rock. A low velocity zone with a loss less than 1 milliseconds was found between pegs 40 and 45m. Additionally the maximum amplitude of the signal at each geophone, for each offset shot is shown, as with line 2. Both of the 1m spaced shots and the 5m spaced offset from the zero end of the shows a step between 40 and 45m, which reinforces the small step seen on the velocity plot.



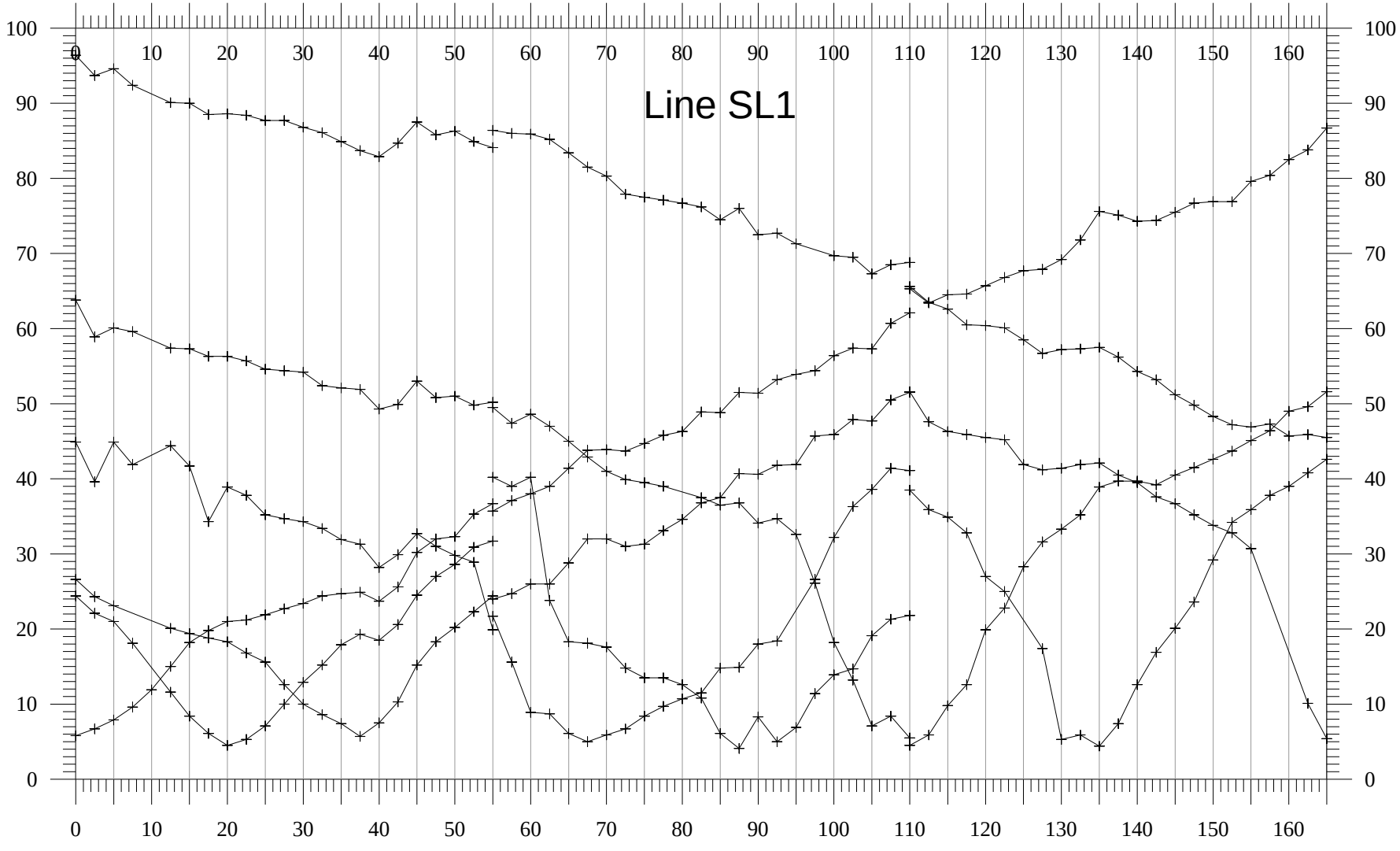
Appendix A: Seismic Refraction Cross Section

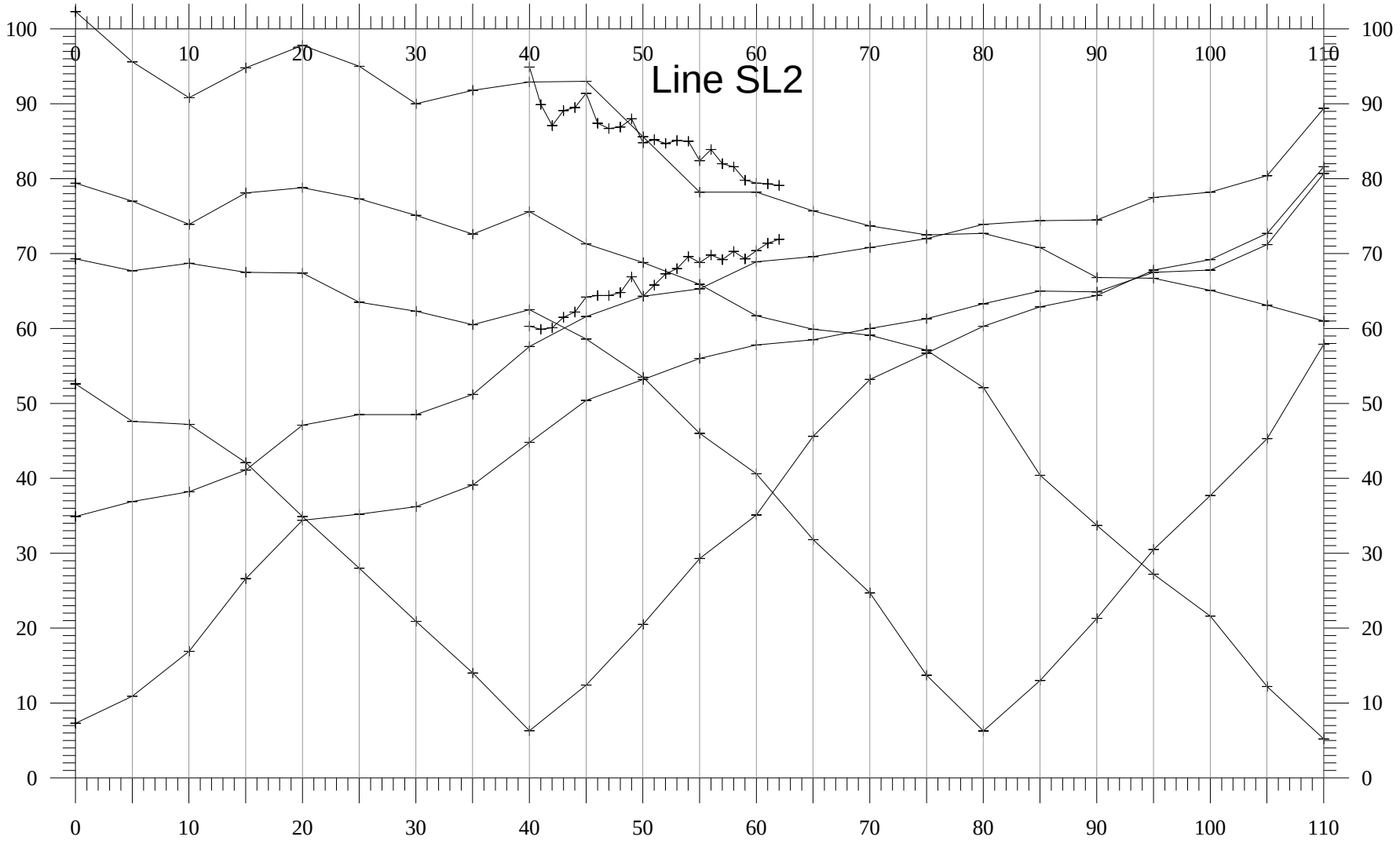

Elevation, approximate
60
40
20
0
300m/s
300m/s
SL1-A
SL1-B
SL1-C
900m/s
900m/s
3900m/s
2750m/s
2750m/s
Low Velocity
48 m
Geophone locations
20 m
Horizontal distance along line, metres
0
20
40
60
80
100
120
140
160
Manor Park
Seismic Refraction Profile SL1

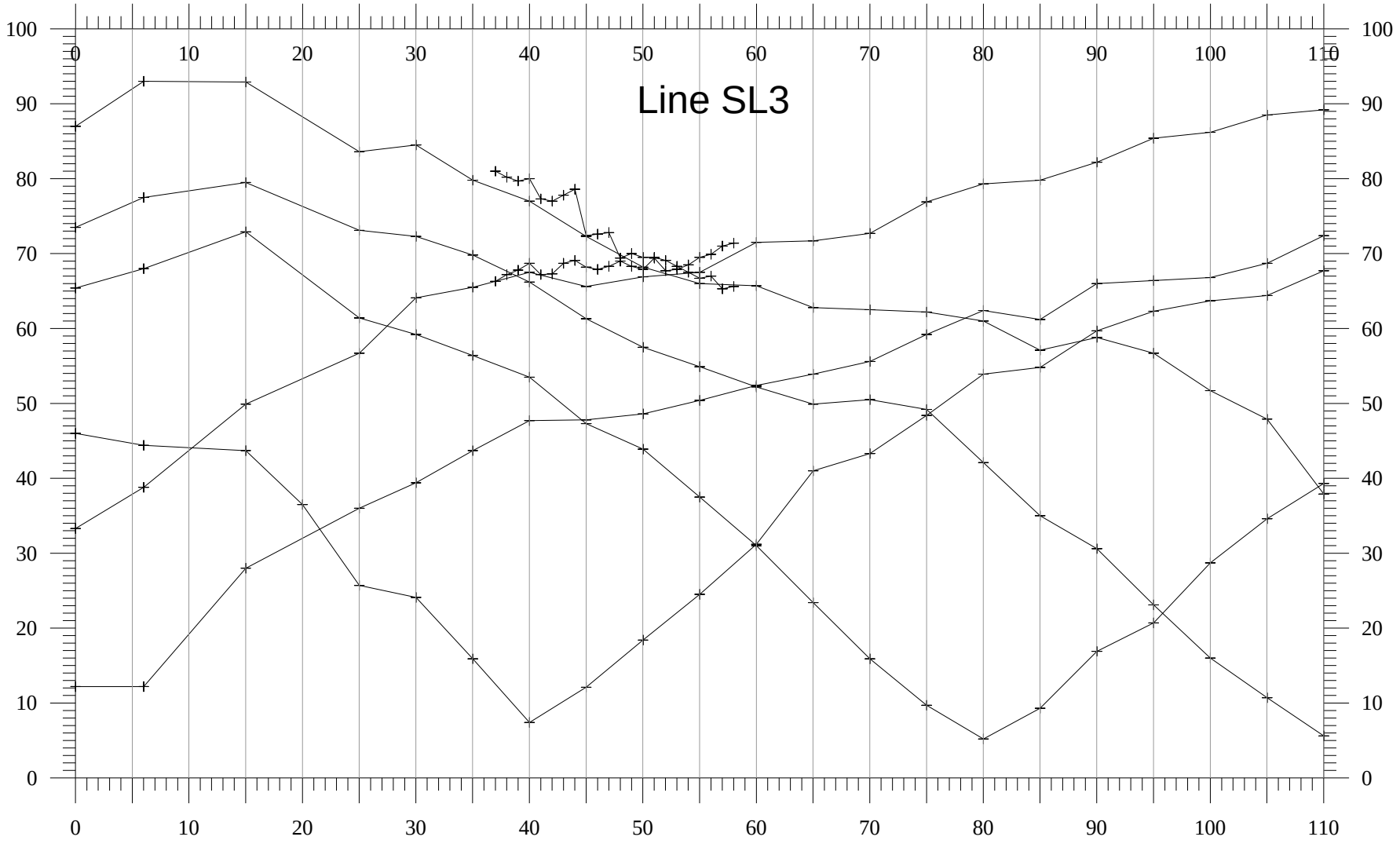

Elevation, approximate
60
40
20
0
300m/s
300m/s
250m/s
800m/s
800m/s
700m/s
2900m/s
2900m/s
Low Velocity
Geophone locations
Manor Park
Seismic Refraction Profile SL2
Horizontal distance along line, metres
0
20
40
60
80
100


Elevation, approximate
60
40
20
0
300m/s
SL3-A
5 m
5 m
SL3-B
SL3-C
300m/s
600m/s
800m/s
800m/s
2900m/s
Low Velocity
48.52 m
2900m/s
Geophone locations
19.99 m
Horizontal distance along line, metres
0
20
40
60
80
100
Manor Park
Seismic Refraction Profile SL3

Appendix B: Time Distance Plots


Line SL1
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160


Line SL2
0
10
20
30
40
50
60
70
80
90
100
110


Line SL3
0
10
20
30
40
50
60
70
80
90
100
110

Appendix C: Survey Data

Survey data,

Peg number	Eastings	Northings	Elevation
SL1 - 0	1765067	5441260	30.602
SL1 - 165	1765183	5441143	25.743
SL2 - 0	1765208	5441372	26.296
SL2 - 110	1765279	5441289	32.909
SL3 - 0	1765316	5441460	29.189
SL3 - 110	1765387	5441375	32.187

Appendix 6: Flood Assessment – River Edge Consulting

Memorandum

RIVER EDGE CONSULTING

To: Mark Cooney, Spencer Holmes Ltd

Cc: Alex Gifford, Tonkin + Taylor

From: Philip Wallace, River Edge Consulting

Date: 1 November 2022

Re: Benmore Crescent – Alternative culvert option

1. Introduction

In June 2022 I prepared a flood assessment report for the site and proposed Te Rangihaeata development at 30 Benmore Crescent. I subsequently carried out an assessment of a proposal for an alternative culvert arrangement and reported the findings in a memo dated 27 July.

I have now carried out a flood assessment of further refinements to the proposed layout of the developed site. The current assessment has also incorporated additional stream bed survey data collected by Spencer Holmes in September 2022, immediately downstream of the last culvert crossing within the site.

2. Modified proposal for site

2.1 Fill Platform and earthworks

The previous assessments of the proposal were based on a fill platform prepared by Tonkin + Taylor. Spencer Holmes has prepared a revised fill platform, the latest being dated 26 October 2022. That revised platform is shown in Figure 1.

The design leaves the existing stream channel untouched. A flood channel of at least 20 m width is also provided.

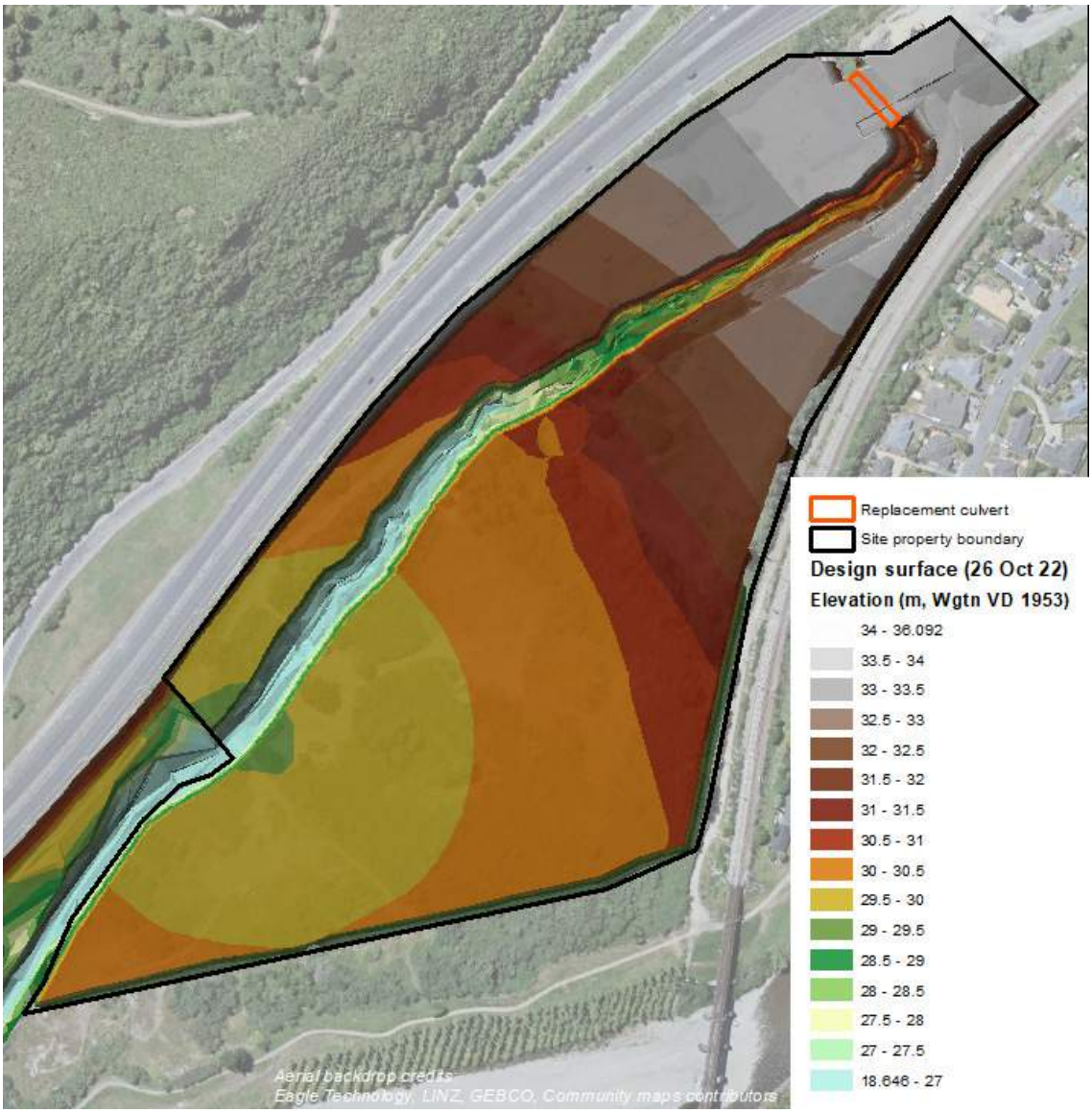


Figure 1 Design platform surface, 26 October 2022

2.2 Culverts

As with the option assessed in July, the proposal under consideration involves removal of all of the Dry Creek culverts within the site and replacement of only culvert 1. Figure 2 shows the location of the culverts.

Culvert 1 is proposed to be 35 m long (Figure 3). While the July assessment assumed culvert 1 would consists of twin 2.5 m wide x 2 m high box concrete culverts, the current assessment now assumes twin 3 m wide x 2 m high box concrete culverts. These would be embedded by around 500 mm, to provide a natural gravel bed and meet fish passage guidelines. Thus the effective height of the twin culverts would be 1.5 m.

An alternative of twin 3.5 m wide x 2 m high culverts has also been tested.

The new culvert is proposed to be laid a gradient (2.3%) reflecting the general gradient of the stream bed in the vicinity, although it is expected that stream gradient will adjust itself in light of

the much larger culvert opening proposed (compared to the existing culvert opening). Having an initial embedment of 500 mm will provide some leeway for the bed to adjust itself. Figure 4 shows the existing stream bed gradient and the culvert invert levels. The dotted red line shows the level at which the culvert invert would be laid while the solid red line, 500 mm higher, shows the bed level assumed through the culvert.

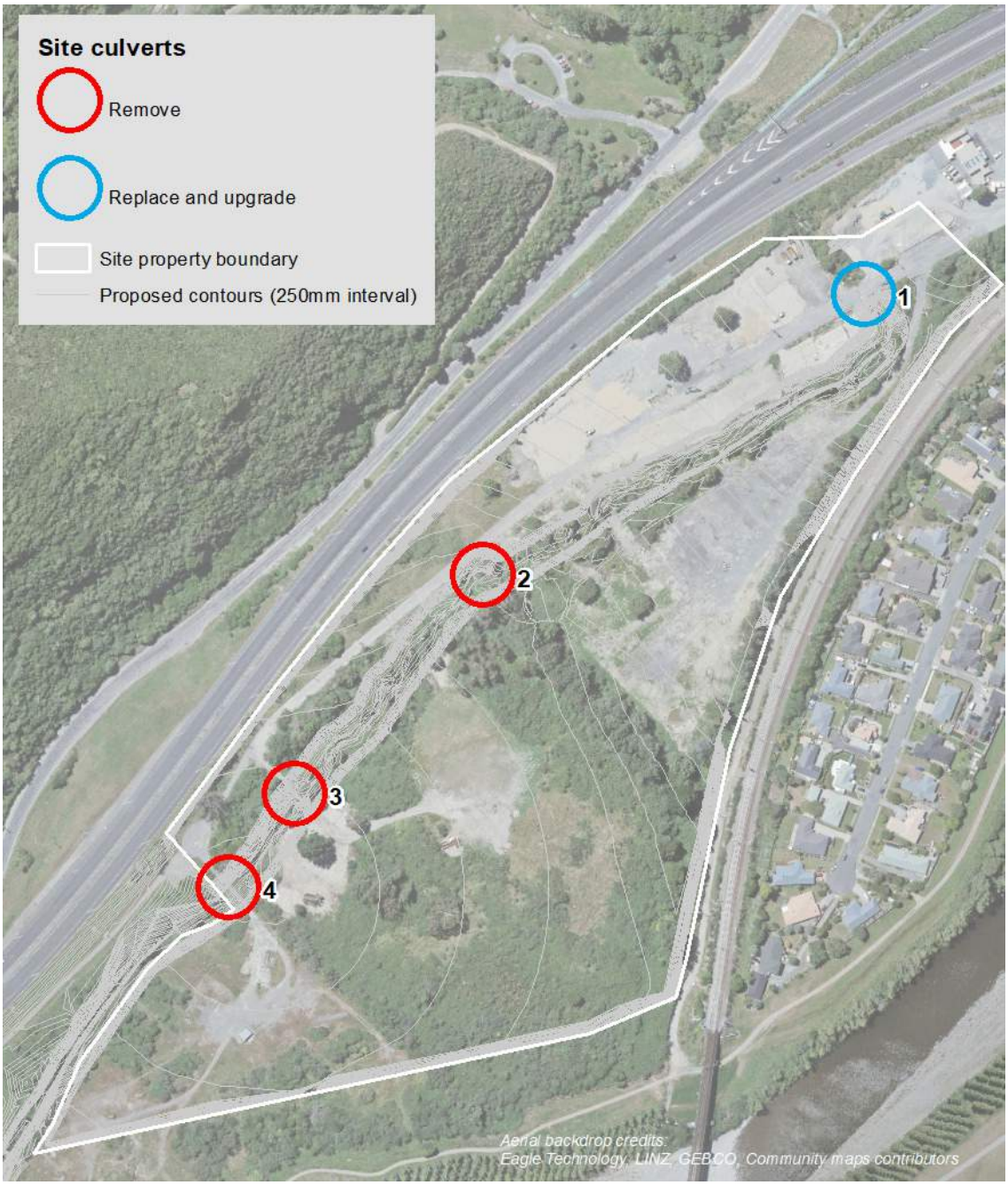


Figure 2 Culvert option, October 2022: removal and replacement

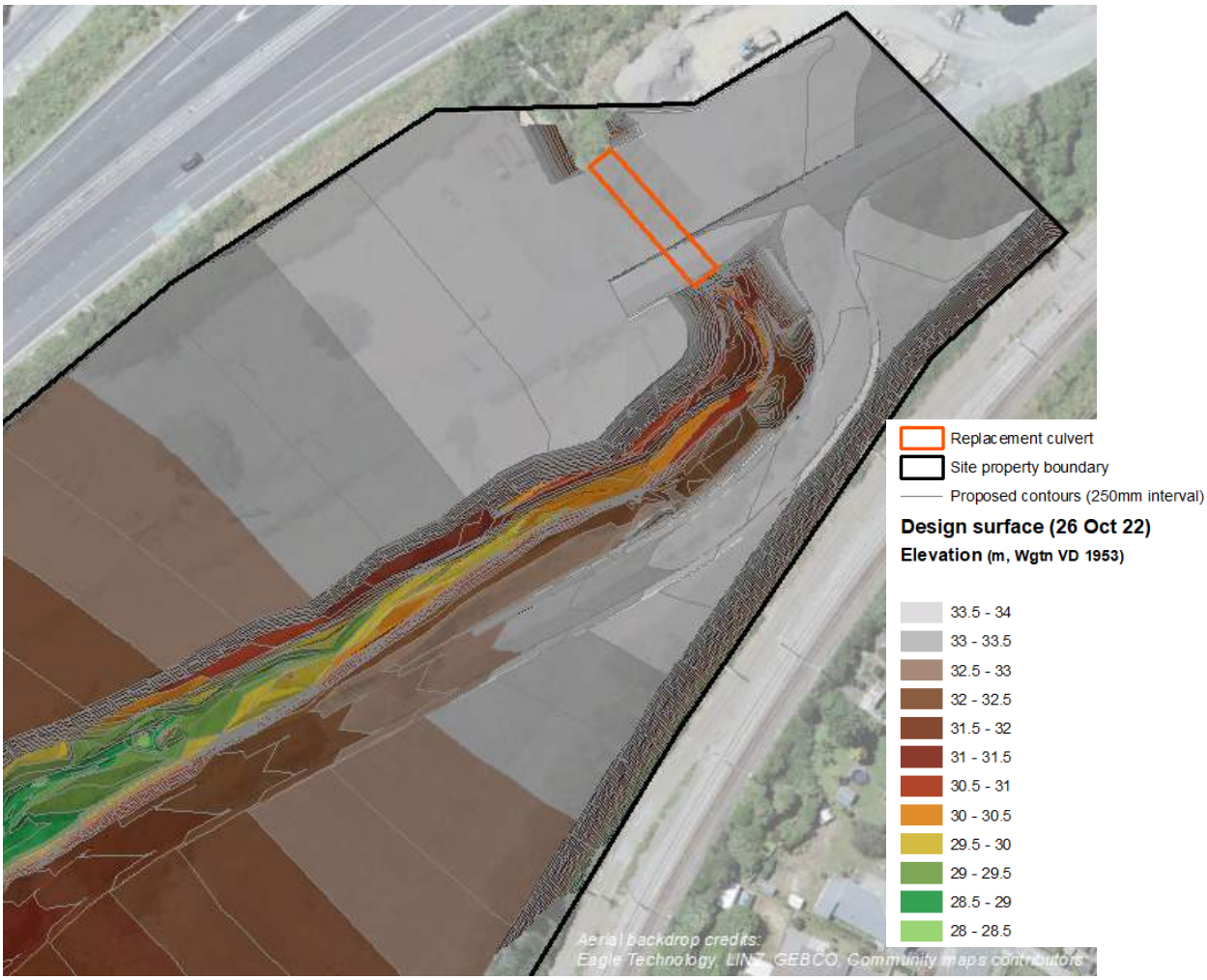


Figure 3 Alternative culvert option, October 2022: culvert 1 replacement

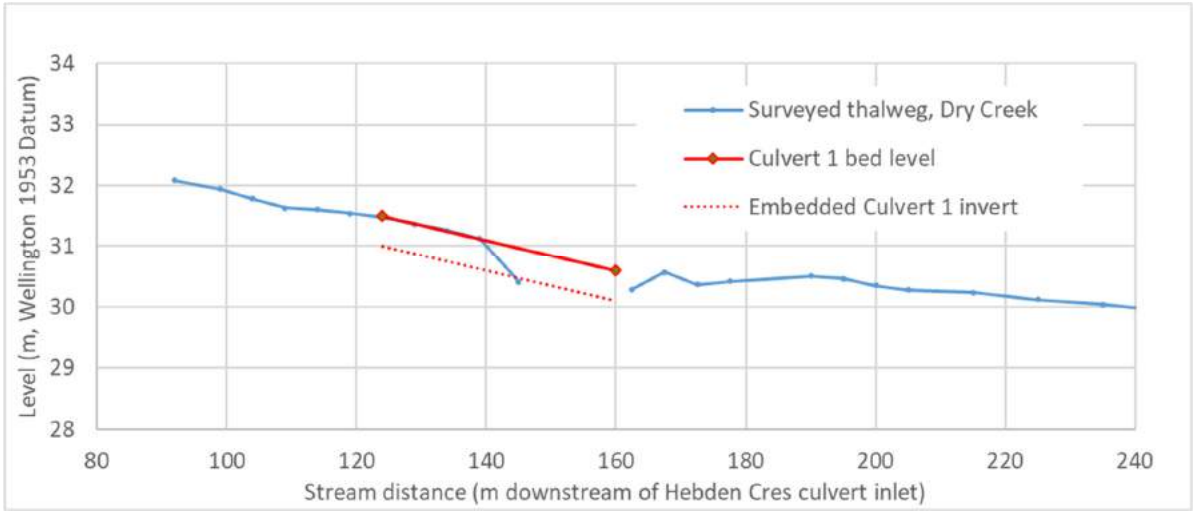


Figure 4 Alternative culvert option, October 2022: culvert 1 bed and invert levels

3. Model results

3.1 Existing situation

Flood depths for the existing situation are shown in Figure 5. Results have been reported previously, in the June 2022 report and the incorporation of the additional survey data made very little difference for the existing situation.

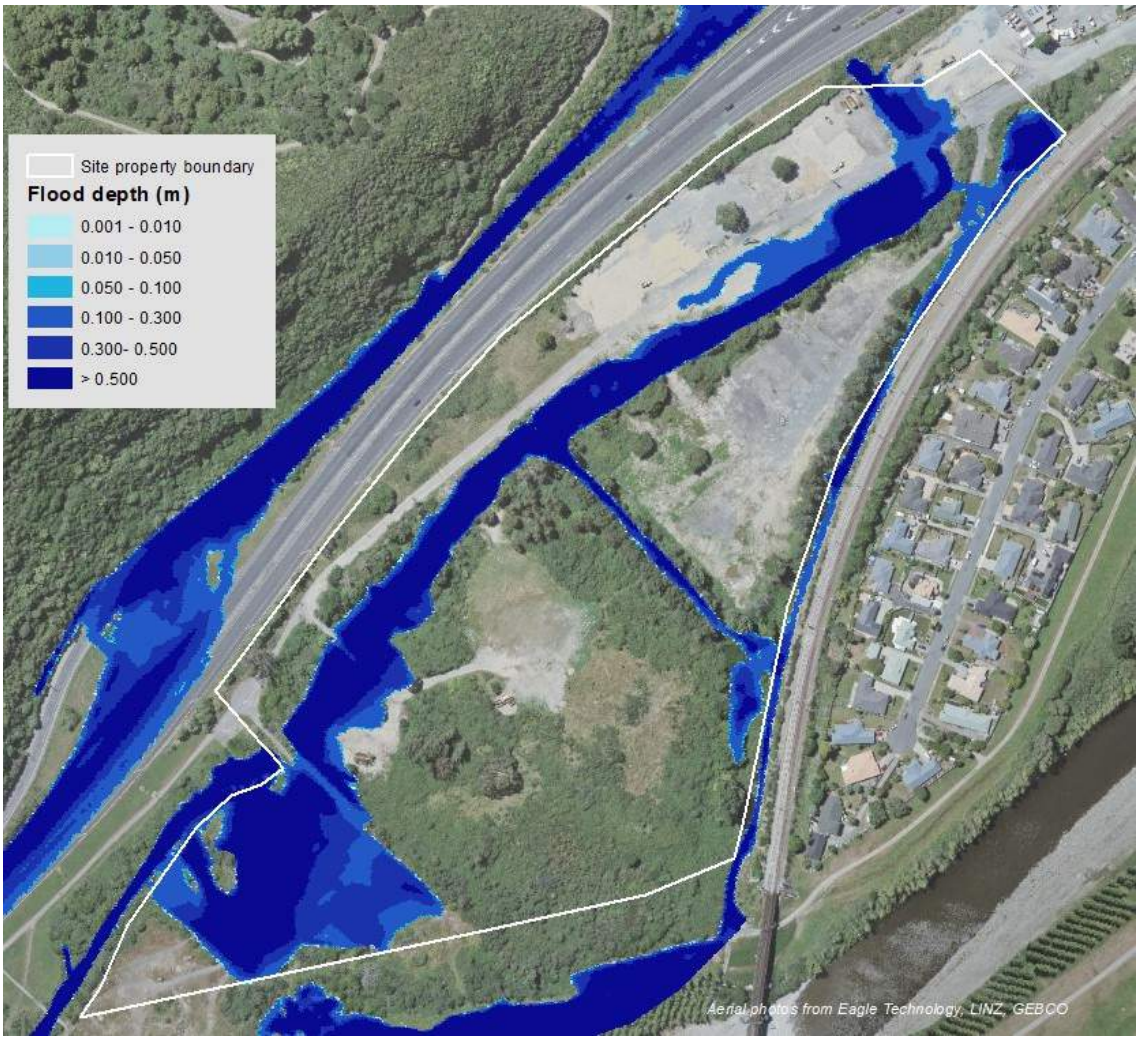


Figure 5 Predicted flood depths, existing situation

3.2 Proposed development situation - twin 3m wide replacement culverts under Benmore Ave

Flood depths for the proposed situation are shown in Figure 6. Floodwaters are contained within the wider stream corridor within the site.

Model results predict that the peak flow through culvert 1 would be 14.4 m3/s, with a velocity of 1.65 m/s.

Figure 7 shows the impact of the proposed development platform on flood levels. Increases of less than 300 mm are predicted in the incised stream channel downstream of where the existing culvert 4 is, which would pose no additional risk to people or assets. There is also a trivial

amount of additional flooding in the stream channel between the upstream end of the site and SH2 (Figure 8).

Otherwise, all increases in depth are contained within the site. Floodwaters are cut off along the KiwiRail access track alongside the railway, hence a small decrease in depth along the track is shown in Figure 7.

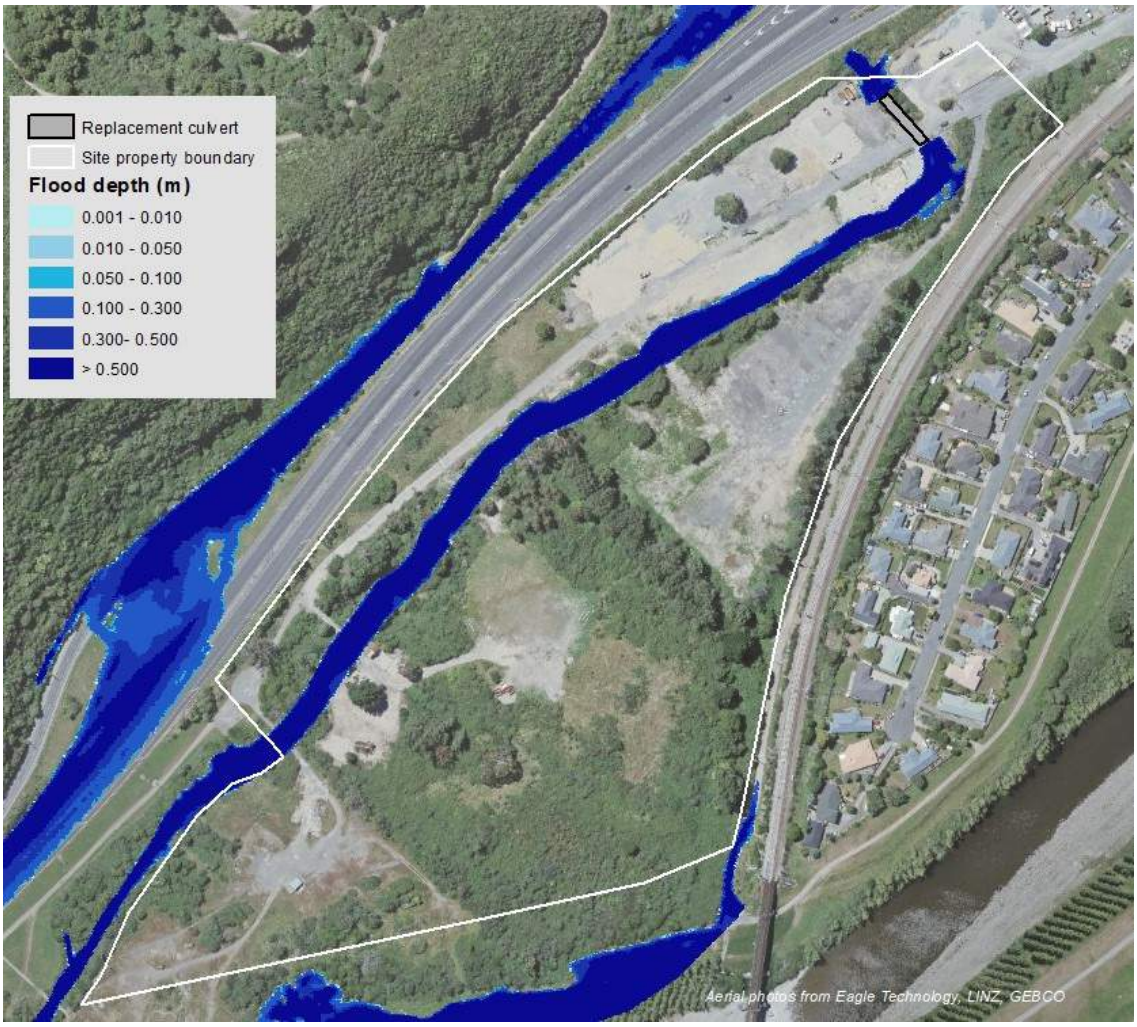


Figure 6 Predicted flood depths, developed situation

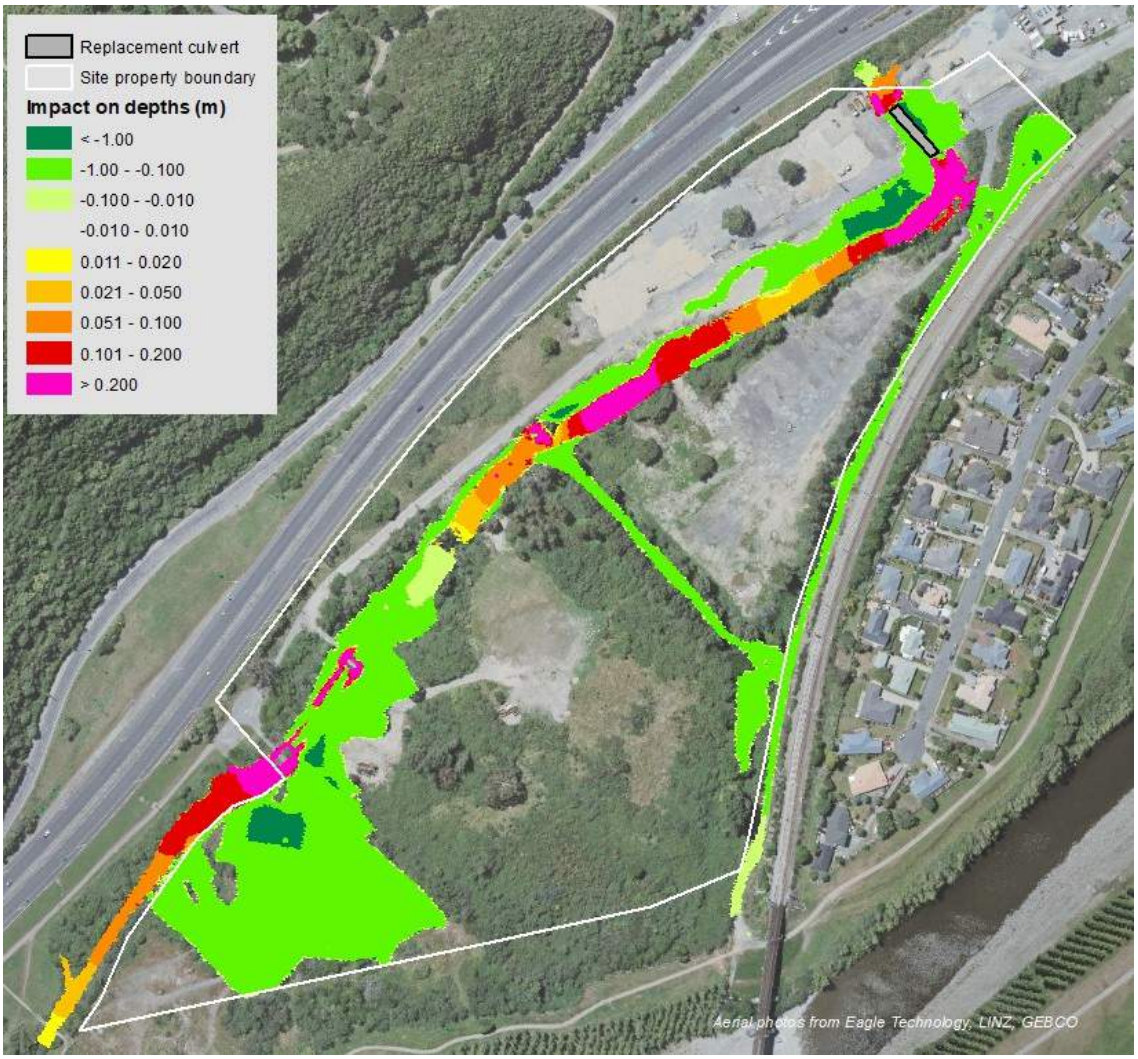


Figure 7 Impact of proposed development on peak flood depths

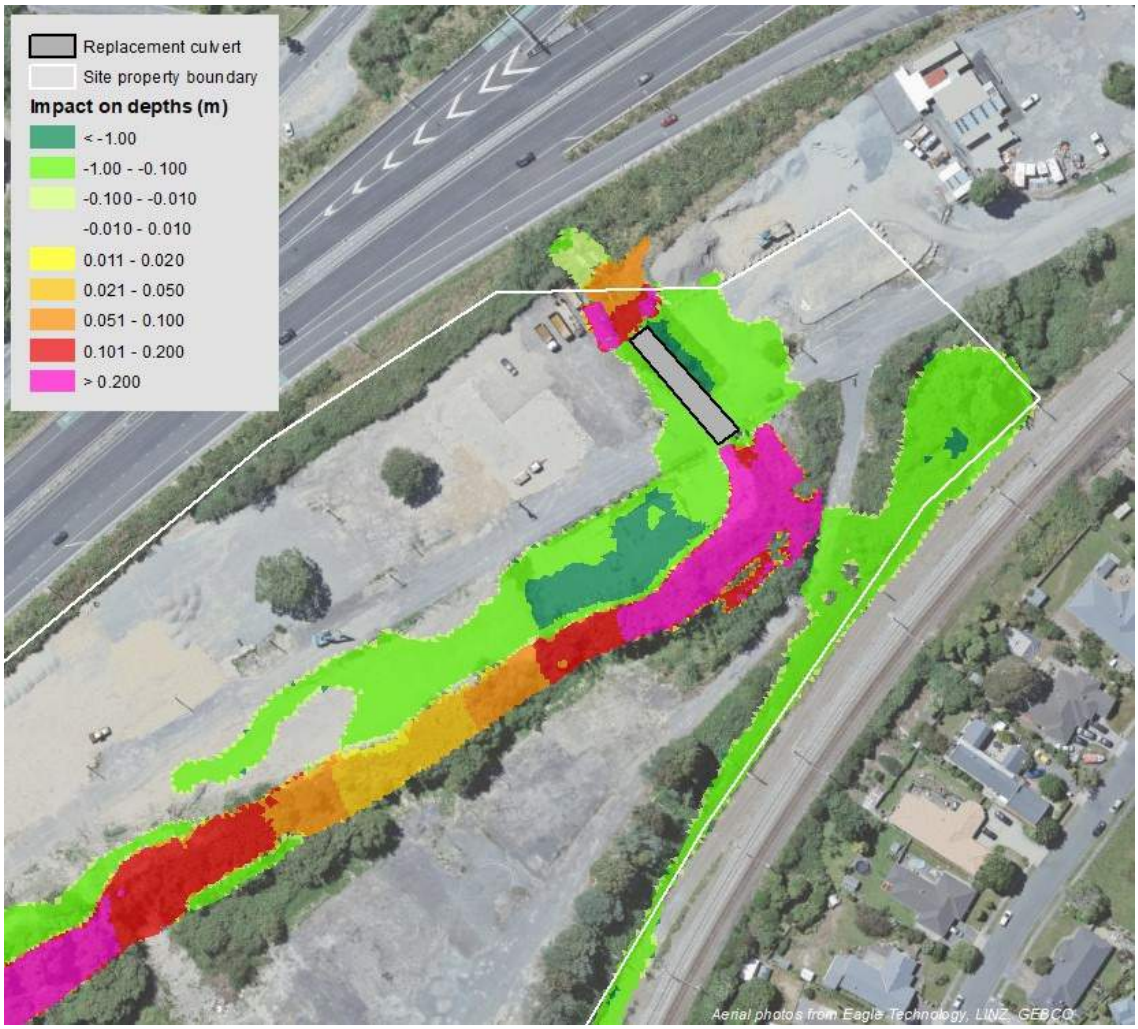


Figure 8 Impact of proposed development on peak flood depths, close-up at northern end of site

3.3 Proposed development situation - twin 3.5 m wide replacement culverts under Benmore Ave

A variation with twin 3.5 m culverts under Benmore Ave was also modelled. This showed a slight reduction of around 50 mm in flood levels upstream of the culvert, with no change to downstream flood levels. The predicted peak velocity through the culvert is 1.55 m/s.

As the reduction in water levels, compared to the twin 3 m wide culverts option is small, the flood depth map for the twin 3.5 m culverts option is not presented.

3.4 Freeboard

Results for the design scenario (twin 3 m culverts) have then had freeboard added. NZS 4404 specifies a minimum freeboard of 0.3 m for commercial or industrial buildings, but higher levels are suggested here, to provide greater protection for any high value assets. GWRC uses 0.9 m freeboard for Hutt River design levels, so that has been added to the Hutt River levels in this current study. A lesser amount, 0.5 m, has been applied to the Dry Creek flood levels, in recognition that this is a much smaller stream.

The model has been rerun with the freeboard applied. The resulting depths are as shown in Figure 9; it can be seen that the floodwaters do not reach the site platform and remain within the wider stream channel.

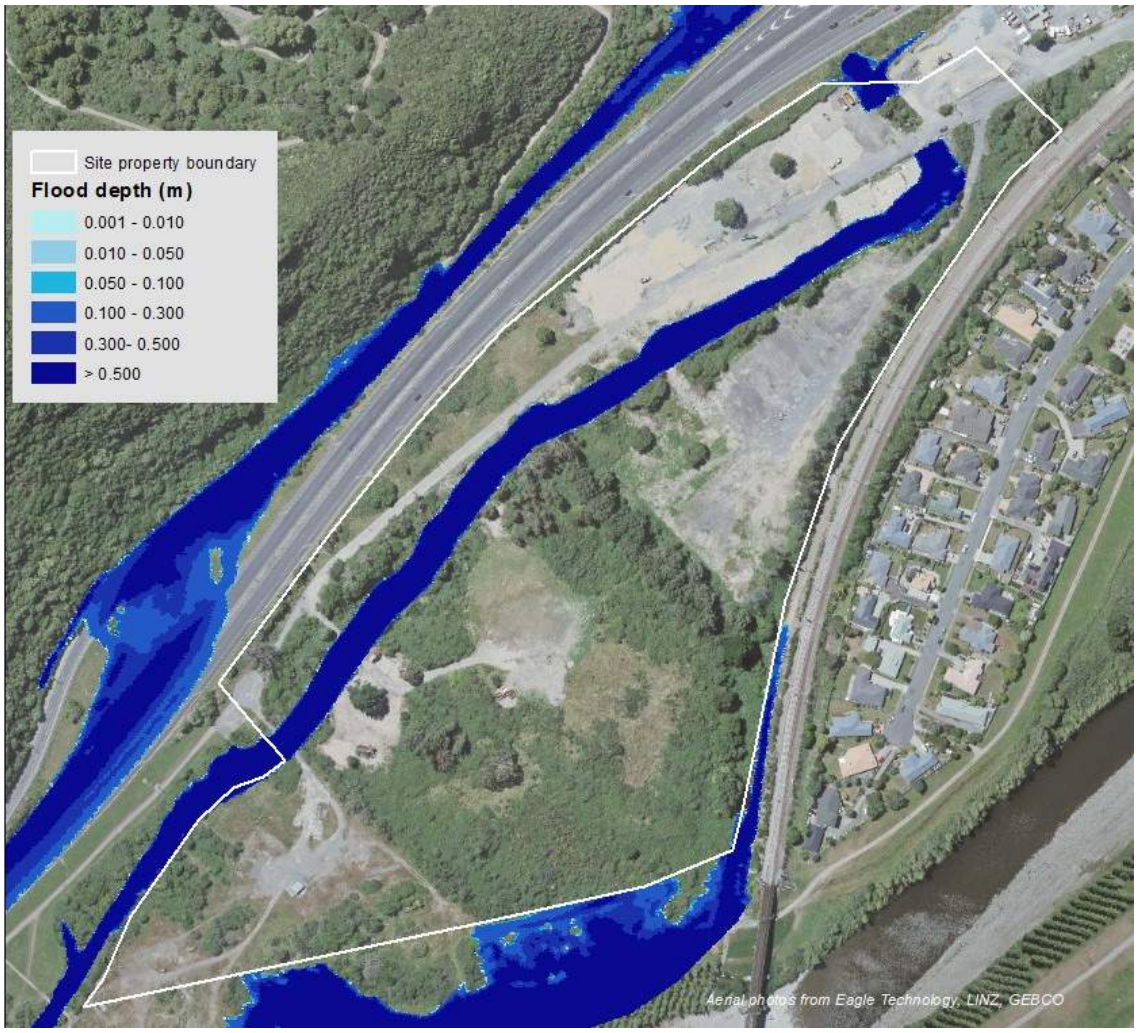


Figure 9 Predicted flood depths, developed situation with freeboard allowance

Figure 10 and Table 1 present a longitudinal profile of flood levels and the platform levels down the stream corridor; these are updates of Figure 7-6 and Table 7-1 in the original report.

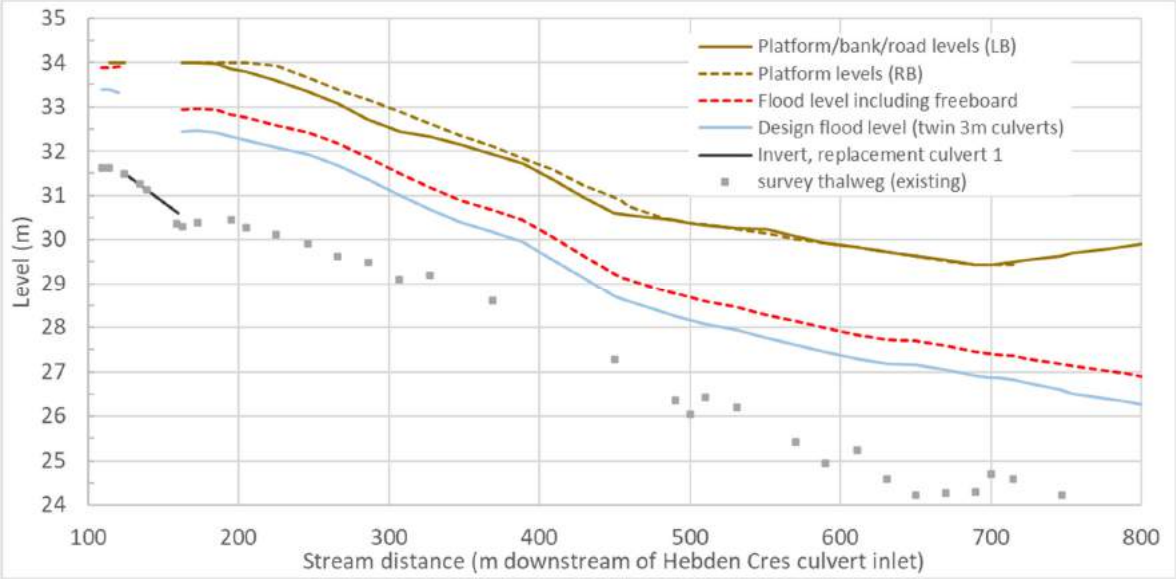


Figure 10 Longitudinal profiles along stream of bed levels, culvert invert levels, flood levels, conceptual fill platform levels (proposed case)

Table 1 Bed levels, culvert invert levels, flood levels, conceptual fill platform levels (proposed case) along stream

Stream chainage	Thalweg (surveyed)	Replacement culvert invert	Platform level		Flood level		
			Left bank	Right bank	Model prediction		incl. freeboard
					Twin 3m	Twin 3.5m	Twin 3m
109	31.63						
114	31.61		34.00	34.00	33.38	33.32	33.88
124	31.48	31.5	34.00	34.00	33.39	33.33	33.89
131							33.93
134	31.26						
139	31.13	culvert 1					
144							
149							
159	30.36	30.6					
163	30.29		34.00	34.00	32.44	32.44	32.94
166			34.00	34.00	32.46	32.46	32.96
173	30.39		34.00	34.00	32.43	32.43	32.93
185			33.96	34.00	32.32	32.32	32.82
195	30.46		33.86	34.00	32.25	32.25	32.75
205	30.28		33.78	34.00	32.07	32.07	32.57
225	30.12		33.59	33.92	31.93	31.93	32.43
246	29.91		33.34	33.65	31.68	31.68	32.18
266	29.62		33.07	33.39	31.37	31.37	31.87
286	29.49		32.71	33.16	31.00	31.00	31.50
307	29.11		32.44	32.89	30.69	30.69	31.19
327	29.19		32.34	32.62	30.39	30.39	30.89
347			32.14	32.36	30.16	30.16	30.66
369	28.61		31.93	32.11	29.95	29.95	30.45
389			31.72	31.84	29.55	29.55	30.05
409			31.37	31.58	29.13	29.13	29.63
429			30.96	31.23	28.72	28.72	29.22
450	27.28		30.60	30.95	28.64	28.64	29.14
455			30.57	30.87	28.33	28.33	28.83
459			30.55	30.76	28.27	28.27	28.77
484			30.46	30.47	28.18	28.18	28.68
485			30.46	30.47	28.09	28.09	28.60
490	26.35		30.43	30.44	27.94	27.94	28.46
500	26.04		30.38	30.38	27.76	27.76	28.28
510	26.42		30.33	30.34	27.60	27.60	28.14
531	26.20		30.26	30.24	27.46	27.46	27.99
551			30.24	30.14	27.29	27.29	27.84
570	25.41		30.07	30.02	27.19	27.19	27.73
590	24.95		29.92	29.93	27.15	27.15	27.69
611	25.23		29.83	29.83	27.05	27.05	27.59
631	24.59		29.73	29.72	26.91	26.91	27.45
650	24.23		29.63	29.63	26.89	26.89	27.43
670	24.28		29.54	29.52	26.87	26.87	27.41
690	24.30		29.44	29.44	26.86	26.86	27.39

Table 1(cont). Bed levels, culvert invert levels, flood levels, conceptual fill platform levels (proposed case) along stream

Stream chainage	Thalweg (surveyed)	Replacement culvert invert	Platform level		Flood level		
			Left bank	Right bank	Model prediction		incl. freeboard
					Twin 3m	Twin 3.5m	Twin 3m
695			29.42	29.43	26.82	26.82	27.35
697			29.42	29.43	26.75	26.75	27.29
700	24.69		29.42	29.42	26.60	26.60	27.19
715	24.58		29.49	29.42	26.50	26.50	27.13
719			29.51		26.38	26.38	27.03
724			29.55		26.33	26.33	26.96
747	24.23		29.64		26.21	26.21	26.84
754			29.69				
777	22.43		29.79				
791			29.85				
795	23.27		29.94				
808	22.89		29.94				

Appendix 7: Bulk Earthworks and Vegetation Removal Consent

Hutt City Council
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Private Bag 31912
Lower Hutt 5040
New Zealand
www.huttcity.govt.nz
T 04 570 6666
F 04 569 4290

RM number: RM220258
Date: 21 December 2022
Applicant: Rosco Ice Cream Ltd
Agent: Tonkin Taylor
Address: Rosco Ice Cream Ltd
111 Brougham Street, Mt Victoria
WELLINGTON, 6011
Attention: Alex Gifford

Zachery Montgomery
Environment and Sustainability
Mobile: 027 361 0186
zachery.montgomery@huttcity.govt.nz
Our reference:RM220258

APPROVAL OF RESOURCE CONSENT FOR BULK EARTHWORKS, VEGETATION CLEARANCE AND UPGRADE OF CULVERTS AT 30 BENMORE CRESCENT MANOR PARK (SEC 1 SO 493901)

Council granted consent for the following reasons:

- Onsite earthworks will be staged and controlled such that adverse effects on amenity values will be acceptable.
- The site is not visually prominent as observed from the wider environment.
- The contaminated land thresholds are below the human health index and the applicant has submitted to council a Detailed Site Investigation which concludes that disposal of the proposed material is appropriate.
- The building within the fault study overlay setback is non-habitable and will be utilised in a transient fashion, with the building to be removed upon completion of the work.
- No persons are deemed affected by the works to an extent that warrants notification.
- Conditions imposed on the consent under section 108 of the Resource Management Act 1991 will control, mitigate and remedy any environment effects caused by the subdivision.
- The property does not appear on Greater Wellington Regional Council's selected land use register as a contaminated site or as having been the site of a verified hazardous activity. As a result, Council considers the likelihood of earthworks uncovering contamination at the site to be negligible.
- The proposal is consistent with the policies and objectives of the city's District Plan.
- Council has given due regard to the New Zealand Coastal Policy Statement, any national, regional or proposed regional policy statement and any other regulations in reaching its decision. Council considers there are no other relevant matters that need to be dealt with.
- The proposal is consistent with the purposes and principles of Part II of the Resource Management Act 1991.

1. PROPOSAL

The applicant is seeking resource consent to undertake bulk earthworks across a 13.1ha rural property in Manor Park. The earthworks will include a cut volume of approximately 130,000m^3 and a fill volume of approximately 160,000m^3. The proposal will also include the importation of fill, if suitable material is not available on site, which could compose approximately 100,000m^3 of imported fill.

The proposal will also include an onsite temporary office which may be located within 20m of the fault line study zone pending the construction management plan. Vegetation removal associated with the bulk earthworks is a permitted activity and can be undertaken as of right and hence will not be considered further throughout this report. The proposal will also include the demolition and removal of the onsite abandoned buildings which is a permitted activity under the District Plan. The proposal does not include the formation of roads or trenching for services as a part of this resource consent.

The earthworks and vegetation removal will occur across the majority of the site to form a platform for future use and development. The platform will range from approximately RL 35m in the northeast of the site to RL 26m in the southwest of the site. The earthworks will include a maximum vertical alteration of up to 6m. No detonations are proposed for the earthworks. The proposal will also include a remedial action plan to manage the asbestos and heavy metal removal of land identified as contaminated and includes appropriate disposal in accordance with the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 (NES).

The proposal will also involve instating a 20m riparian margin along dry creek and native planting. The proposal will also allow for up to four culverts to be built along Dry Creek to provide for vehicle crossings.

Figure 1. Earthworks Cut and Fill Plan

2. SITE DESCRIPTION

The applicant has included the following site description which I have accepted as accurate and adopt noting the following:

The site is located at Benmore Crescent, Manor Park, Lower Hutt.

The majority of the site is undeveloped and is comprised of grasses, vegetation and open gravel areas. There are several abandoned buildings onsite and remnants of old buildings. There is evidence of historic filling to create raised earth platforms and access tracks and dumping of waste.

There is a cycling/walking trail on land owned by GWRC along the southern boundary of the site and adjacent to the Hutt River. The Wairarapa railway line runs along the eastern site boundary and residential dwellings are present beyond this. State Highway 2 (SH2) is located to the west of the site. Access to Benmore Crescent and the site is available off SH2 via the existing Manor Park intersection.

The topography onsite is varied due to the historic filling that has occurred. There are large flat yard areas, raised fill platforms, embankments and low-lying areas. Overall, the site topography slopes from approximately r34m (Wellington Datum 1953) adjacent to SH2 down towards the Hutt River, where, at the site boundary, the land height is approximately RL 26m.

Dry Creek runs through the site and discharges into the Hutt River. At the northern extent of the site the stream channel is shallow with low, poorly defined, banks. The channel becomes more incised with taller banks as it flows through the site to the Hutt River. There are four existing culverts within Dry Creek.

Static water level measurements were recorded during the drilling of four fault investigation boreholes. Groundwater beneath the site is located within the overlying alluvial deposits between approximately 21 to 24 m RL. The groundwater level is shallowest along the southeast margin of the site nearest the Hutt River (approximately 3 m below ground level), and deepest at the northern end (approximately 8 m below ground level).

Native vegetation is present onsite including kawakawa, mahoe, seven finger, ngaio, karamu and cabbage tree. However, the site is largely dominated by exotic species such as blackberry, tradescantia, popular, gorse, tree lucerne, fennel and willow. Northern grass skink may be present onsite and New Zealand Peripatus was observed at the site in October 2021. No observations of bats have been made in the vicinity of the site. However, their temporary presence cannot be ruled out. Indigenous bird species are likely to utilise the site for breeding and foraging; and two wetlands were identified onsite. These wetlands have formed in areas where earthworks occurred between 2005-2018. The ecological investigation concluded that the two wetlands onsite met the definition of a 'natural wetland' under the National Policy Statement for Freshwater and NESF.

The District Plan does not identify any archaeological or heritage features onsite. A review of the ArchSite3 archaeological database has been undertaken to identify if there are any

registered archaeological features present. Site R27/536 is located in the northern area of the site. It is the location of the former Wellington-Wairarapa railway line built between 1874 and 1880. The notes on the database indicate that "Sections of the old line have been converted to roadways and cycle lanes. Most of the railway features have been removed/destroyed, though some subsurface features may exist". The former rail bed can be regarded as a historical route, rather than a detailed, archaeological feature.

The site is not included within the Wellington Regional Council SLUS/HAIL database. However, a DSI has been prepared for the proposed works which notes:
Overall, the soil onsite is contaminated above background levels, but below the relevant commercial/industrial human health criteria.

30 Benmore Crescent is legally described as Section 1, 6 SO 493901 and held in Record of Title Identifier 738223. The Record of Title includes the following interests

- *Subject to Part IV A Conservation Act 1987*
- *Subject to Section 11 Crown Minerals Act 1991*
- *B645270.1 Gazette Notice (1997/1066) declaring that portion of State Highway 2 adjoining hereto to be a Limited Access Road*
- *11032732.1 Gazette Notice (2018- In 656) declaring Section 6 SO 493901 to be set apart for Local Purpose Reserve (Soil conservation and river control purposes) and shall remain vested in Her Majesty the Queen*
- *Fencing Covenant in Transfer 11676592.2*
- *11676592.3 Encumbrance to New Zealand Transport Agency - 5.3.2020 at 2:08 pm*

3. RELEVANT PLANNING RULES AND REGULATIONS

Operative District Plan
The District Plan is the appropriate planning instrument with which to assess the proposal. Rules relating to the General Residential Activity Area, which this proposal falls within, are contained in chapters 8B (Rural), 11 (Subdivision) and 14 (General Rules). The Lower Hutt District Plan 'Wellington Faultline Study Zone' overlay extends across the site.

District Plan as modified by Plan Change 56:

On 18 August 2022 Plan Change 56 (PC56) was notified which introduces 'medium density residential standards' (MDRS) as required by the Intensification Planning Instrument of the Resource Management Act 1991 (RMA). Under PC56 the application site is located within the Rural Zone. The application site is not newly zoned for residential activity, nor is it within a qualifying matter area, whereby in accordance with s86BA(1) of the RMA, the MDRS permitted rules as incorporated by PC56 have taken legal effect from the time the plan change was notified. The non-compliances with the District Plan (including any MDRS standards incorporated within PC56) for which resource consent is required and any relevant assessment matters of the Operative District Plan are identified in the following assessment.

The proposal requires resource consent for the following District Plan non-compliance:
The proposal will comply with the new permitted standards which have taken legal effect.

Operative District Plan permitted rules and standards which continue to have legal effect:

Rule 14H 2.1(a) All structures and buildings on any site where the whole site or a portion of the site falls within the Wellington Fault Special Study Area, excluding proposed accessory buildings which are not required for habitable or working purposes.
The proposal includes a site office which is located within 20m of the fault line study area.

Rule 14I 2.1(a): Earthworks in all activity areas, except Hill Residential and others specified activity areas, are permitted activities up to a maximum volume of 50m^3 and vertical alteration of 1.2m.
The proposed earthworks will exceed the allowable volume by approximately 390,000m^3, of which 130,000m^3 is proposed as cut, 160,000m^3 as fill, with potentially up to 100,000m^3 of imported fill with a cut depth of up to 6m and fill height of up to 6m.

I consider the proposal to be a restricted discretionary activity under Rules 14H 2.1(a) and 14I 2.2.(a).

Matters of Discretion:

- Effects on visual amenity values
- Effects on natural features and topography
- Natural hazard effects
- Effects on surrounding cultural or historical features of significance
- Safe Separation Distance of Structures and Buildings from the Wellington Fault

National Environmental Standards (NES)
The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 is implemented in order to ensure that land affected by contaminated soil is appropriately assessed and made safe for human use. The Regulation is applicable to all proposals involving the following activities which will occur on land that is being used, has been used, or is more likely than not to have been used for hazardous activity or industry use (HAIL):

- Removal of fuel storage systems and associated soil from a piece of land or replacement of a fuel storage system in or on a piece of land.
- Soil sampling
- Soil disturbance
- Subdivision of land
- A change in land use

Via a check of the Greater Wellington Regional Council SLUS database, Council can conclude that the subject site is not recorded as affected by historical HAIL activity. The applicant has however prepared a Detailed Site Investigation (DSI) for the subject site which notes:

The site is currently a mixture of commercial, industrial, farmland, and scrub land with some open grassed areas and it is proposed to undertake bulk earthworks over the site in preparation for future land development for likely mixed use activities; some of the earthworks have already begun. Additional fill will be imported to various portions of the site to increase its elevation above the flood plain.

A Preliminary Site Investigation was completed in September 2020 which identified eight potential site activities included on the Hazardous Activities and Industries List, specifically the following:

- *Horticulture/ nursery activities*
- *Potential fuel storage for quarrying*
- *Timber storage yard*
- *Metal blasting and protective coating*
- *Uncontrolled demolition of former buildings*
- *Concrete truck storage, quarrying vehicles and equipment*
- *Clean-fill operations, undocumented fill*
- *Burn-off Areas*

The report identifies nine categories included on the Hazardous Activities and Industries List, namely the following:

- *HAIL ID A10 – Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass house or spray sheds; Chemical manufacture, application and bulk storage;*
- *HAIL ID A17 – Storage tanks or drums for fuel, chemicals or liquid waste; Chemical manufacture, application and bulk storage;*
- *HAIL ID A18 - Wood treatment or preservation including the commercial use of anti-sapstain chemicals during milling or bulk storage of treated timber outside; Chemical manufacture, application and bulk storage;*
- *HAIL ID D1 – Abrasive blasting including abrasive blast cleaning (excluding cleaning carried out in fully enclosed booths) or the disposal of abrasive blasting material); Metal extraction, refining and reprocessing, storage and use;*
- *HAIL ID D3 – Metal treatment or coating including polishing, anodizing, galvanizing, pickling, electroplating, or heat treatment or finishing cyanide compounds; Metal extraction, refining and reprocessing, storage and use;*
- *HAIL ID E1 – Asbestos products manufacture or disposal including site with building containing asbestos products known to be in a deteriorated condition; Mineral extraction, refining and reprocessing, storage and use;*
- *HAIL ID E8 – Transport depots or yards including areas used for refuelling or the bulk storage of hazardous substances; Mineral extraction, refining and reprocessing, storage and use;*
- *HAIL ID G5 – Waste disposal to land (excluding where biosolids have been used as soil conditioners); Cemeteries and waste recycling, treatment and disposal; and*
- *HAIL ID I – Any land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment*

A land use change, soil disturbance and subdivision on sites where an activity included on the HAIL is, has, or is more likely than not to have occurred, requires an environmental assessment under the NES. As the proposal includes bulk earthworks, the proposal is considered to be disturbing soils.

The permitted standards pursuant to Regulation 8(3) Disturbing Soil under the NES allow for a volume of disturbance of 25m^3 per 500m^2 as a permitted activity. The proposal is in excess of this volume across the site and therefore is a Restricted Discretionary Activity in accordance with Regulation 10 of the NES, as Regulation 10(2) is considered satisfied.

Matters of Discretion

- The adequacy of the detailed site investigation, including—
  - (i)site sampling:
  - (ii)laboratory analysis:
  - (iii)risk assessment:
- The suitability of the piece of land for the proposed activity, given the amount and kind of soil contamination:
- The approach to the remediation or ongoing management of the piece of land, including—
  - (i)the remediation or management methods to address the risk posed by the contaminants to human health:
  - (ii)the timing of the remediation:
  - (iii)the standard of the remediation on completion:
  - (iv)the mitigation methods to address the risk posed by the contaminants to human health:
  - (v)the mitigation measures for the piece of land, including the frequency and location of monitoring of specified contaminants:
- The adequacy of the site management plan or the site validation report or both, as applicable:
- The transport, disposal, and tracking of soil and other materials taken away in the course of the activity:
- The requirement for and conditions of a financial bond:
- The timing and nature of the review of the conditions in the resource consent:
- The duration of the resource consent.

Both the proposed earthworks and disturbance of contaminated soils are intrinsically tied to one another for the proposed bulk earthworks and therefore assessing the application separately is not considered appropriate as the contamination is fixed to the underlying allotment. The proposal is therefore considered to be bundled as a **Restricted Discretionary Activity.**

4. PERMITTED BASELINE

It is appropriate to disregard adverse effects of the activity on the environment or on any persons, if the effects are comparable to an activity or development that is permitted by the District Plan; this is known as the permitted baseline.

In this instance, a relevant permitted baseline would include earthworks up to 50m^3 in volume and up to 1.2m in vertical alteration. This permitted baseline is of limited relevance considering the scope of the proposed earthworks and therefore will not be taken into consideration throughout this decision report.

The permitted baseline for the Rural Zone however does not include restrictions with regard to vegetation clearance and therefore the vegetation onsite can be cleared as part of the permitted baseline, which can be included within the permitted baseline with regard to effects relating to amenity. It is our understanding that the applicant has applied for a land use consent with Greater Wellington Regional Council (GWRC) for the vegetation clearance on erosion prone land.

5. NOTIFICATION ASSESSMENT UNDER THE DISTRICT PLAN

Council must assess any resource consent application under section 95 of the Resource Management Act 1991 to determine whether a resource consent application should be notified. The Resource Management Act 1991 details a four step process that must be followed, and triggers or precludes notification of applications in certain circumstances. The sections below follow the four step process for public notification (under section 95A) and limited notification (under section 95E).

5.1 - PUBLIC NOTIFICATION STEPS – SECTION 95A

Pursuant to section 95A of the Resource Management Act, this section follows the 4 step process to determine if public notification is required.

Step 1 - Public notification is mandatory in certain circumstances

Public notification is mandatory in certain circumstances.

Has the applicant requested public notification?	No
Is public notification required under s95C?	No
Is the application made jointly with an application to exchange recreation reserve land under s15AA of the Reserves Act?	No

Public notification is not mandatory under step 1.

Step 2 - Public notification is precluded in certain circumstances

If public notification is not required under step 1 it may be precluded in certain circumstances (unless special circumstances apply under step 4).

Are all activities in the application subject to a rule in a Plan or National Environmental Standard precluding public notification?	No
Is the application for one or more of the following (but no other) activities? ▪ A controlled activity ▪ A boundary activity with a restricted discretionary, discretionary or non-complying activity status	No

Rule 14H 2.1(a) is excluded from public notification pursuant to 14H2.1(a)(i) and hence will not be considered in the public notification assessment. However, breaching the earthworks rules is not precluded from public notification. Therefore, Public notification is not precluded under step 2.

Step 3 - Public notification is required in certain circumstances

If public notification is not precluded under step 2, public notification may be required in certain circumstances.

Is any activity in the application subject to a rule in a Plan or National Environmental Standard that requires public notification?	No
Does the activity have, or is likely to have, adverse environmental effects that are more than minor in accordance with s95D?	No (see assessment below)

Does the activity have, or is likely to have, adverse environmental effects that are more than minor in accordance with s95D?

Public notification is required under step 3 if the activity will have or is likely to have adverse effects on the environment that are more than minor.

In considering if the adverse effects on the environment are more than minor, the effects on persons who own or occupy the land in, on, or over which the activity will occur; or any land adjacent to that land must be disregarded. I have therefore disregarded the effects on the persons who own or occupy properties at the following properties in making an assessment under s95D:

- 10 Benmore Crescent
- 50 Benmore Crescent
- 8 Hutt Rail Way Central
- Properties on the western side of Mary Huse Grove (from number 27 to 70)

The adverse effects on the environment are considered to be less than minor for the following reasons:

Amenity Values

Adverse effects resulting from earthworks can occur during construction and following works if the site is not appropriately remediated or finished. Construction activity can result in adverse temporary construction effects such as noise, dust, vibration, sedimentation or traffic. Temporary construction effects are the cumulative effects resulting from construction activity for the duration construction is underway. This usually corresponds to the scale and complexity of the construction activity. The proposal involves the cut and fill of a cumulative 390,000m^3 of earth and a vertical alteration of up to 6m to create a level platform for future development on the site.

The applicant has not applied to breach construction noise, vibration, high trip generator vehicle movement thresholds or dust standards of the District Plan, and therefore the effects resulting from this will be consistent with the permitted baseline. Construction effects associated with these works will be temporary, noting that the District Plan allows for some additional noise during such times in accordance with NZS 6803P “Measurement and Assessment of Noise from Construction, Maintenance and Demolition Work”. The applicant has also noted that sediment control measures will be installed for the duration of the site development works. Vibrations will be managed on site through the earthworks management plan, which will include controls for reducing the effects to an appropriate level. The proposal will result in less than 500 vehicle movements per day, both to and from the site, with access primarily being via the adjacent state highway, which will appropriately limit the effects as vehicle movements will be absorbed by background traffic levels. Dust will be managed through the earthworks management plan, with the applicant identifying several methods in the application, including textile covering, wetting and polymer binding, with the final methodology to be submitted as part of this management plan. With the exception of the

proposed scale of works, the effects of the proposal will be largely consistent with the permitted baseline.

Amenity effects arising from earthworks will also be managed through the earth worked areas being built over, landscaped or sealed as soon as practicable. The applicant has proposed to submit to council, an earthworks management plan which includes the staging of the proposed earthworks prior to the works being undertaken. The staging of the proposed earthworks will result in the activity being localised to parts of the site at any one time, reducing adverse effects associated with long term scarring of the site, in consideration of the scale of earthworks proposed. This will mean there are no areas of exposed cuts, reducing the appearance of scarring onsite, and scope for amenity effects relating to dust and sedimentation. Further the vertical alteration is to make the site more consistent in terms of topography, as presently the site is characterised by an inconsistent, rugged design, which is out of character with the surrounding area. It is also noted that the current terrain is not a natural formation, and the subject site has already been heavily impacted by human activity over time. Potential adverse amenity effects associated with the proposed earthworks will be less than minor.

Finally, A condition of consent will be included under s.108 that will require erosion and sediment control measures to be implemented during the earthworks phase of the proposal in accordance with the Greater Wellington Regional Council's guide "Erosion and Sediment Control Guideline for Land Disturbing Activities in the Wellington Region" and will include specific measures to reduce the effects of the proposal to an appropriate scale that will not adversely impact the amenity as experienced by the wider community.

Existing Natural Features and Topography

The proposal will result in the disturbance of 390,000m^3 of soil across an area of 130,455m^2, consisting of bulk earthworks to create a level platform on the site for future activities, which will either be permitted or assessed independently of this report. Upon completion of earthworks, the area will be seeded, sealed, stabilised or covered by landscape treatments meaning there will be no permanent scarring or obvious changes to the site topography. The key site feature being that the site is rugged and overgrown will be lost, however the proposed design will result in the site being flat and of a more functional form. It is also noted that the site in the past was flat in nature during the 90's where the site was utilised for agricultural activities, and that the changes to the site, are not the result of the fault zone, or tectonic activity but human influence which has resulted in the current shaping of the site. As discussed in the application and permitted baseline, the site does include vegetation however none of the trees are of an iconic or protected status, and as per the rules of the Rural Activity Area can be cleared as of right. Therefore, the site lacks any existing vegetation which would require preservation. Finally, no changes to significant ridgelines, hilltops, or areas visible from public spaces are proposed. The site is partially visible from the State Highway, however it is noted that due to the fall only limited amounts of the area are visible.

On this basis, effects associated with changes to the natural topography and features of the site will be less than minor.

Historical or Cultural Significance

The site is not identified in the District Plan as being of cultural or historical significance, nor is it identified by Heritage New Zealand as being a site of archaeological significance. On this basis, works are unlikely to disrupt or destroy any artefacts or values of historical or cultural significance.

The applicant has included within the application an archaeological report prepared by Capital Heritage Limited, an archaeology and heritage consultancy. The report concludes the following from the site visit and conclusion of the report:

No probable or likely archaeological materials or features were seen during the site visit.

The general property shows numerous signs of demolition and soil disturbance and there has clearly been a great deal of activity there in recent years. Little in the way of topsoil has survived over most of the site which mostly shows mixed alluvial soils and gravels at surface.

Although this general area was surveyed out for pastoral and railway purposes during the 1850s and 1870s, it appears that there was little in the way of direct, pre 1900 archaeological activities carried out here that are likely to have left tangible, physical remains today

Although the railway line ran through this area from the early 1870s, the 1950s removal of the line and subsequent grading and asphalting of the former rail bed will have substantially obscured and altered the original railbed. The former rail bed can be regarded as an historical route, rather than a detailed, archaeological feature. There is also no evidence to suggest that there was additional railway related activity in the area such as construction of a railway station or siding.

It is therefore concluded that the site is of limited historical or archaeological significance and it is determined that a General Archaeological Authority (as per the Heritage New Zealand Pouhere Taonga Act) will not be required in this instance as the site.

As the Council does not recognise the site as being of historic value, the archaeology report prepared by Capital Heritage Limited, Archaeology and Heritage Consultancy is considered appropriate and the conclusion of the report is accepted. An Accidental Discovery Protocol will also be included within the conditions of the consent that the council has proferred and been accepted by the applicant which will ensure that the discovery of any material of a historic nature will be preserved.

The site is owned by Te Runanga O Toa Rangatira Incorporated, who have provided written approval for the proposal as the owners of the land. Cultural effects upon are also not considered in accordance with s. 95D(e) of the RMA. The site is also not included in a cultural overlay, nor recognised in the District Plan. Cultural effects have therefore been assessed as less than minor.

Natural Hazards

The proposed earthworks will alter the topography of the site. The applicant has prepared a flood assessment report, prepared by River Edge Consulting Limited, which concludes that where the flood design proposed in the report is included within the design of the site, future

development of the site will protect the existing site, whilst causing no adverse effects off-site. Models of the existing and proposed flooding depths are included within the report in figures 7-1 and 7-2 which appropriately show that flooding can be controlled on the site in association with the proposed development. The proposal will not result in flooding which will affect the wider community. The proposal will therefore not create, accelerate, worsen or exacerbate the natural hazards associated with flooding.

The site also includes the fault hazard of the district plan running through the north-western portion of the site. The applicant at this stage has solely applied for bulk earthworks to level the site. The proposal therefore does not include the provision of structures either habitable or inhabitable and therefore there is no risk to human life, resulting in the proposal being consistent with the provisions of Chapter 14H as a permitted activity. Further the levelling of the site will not result in changes to the site which could adversely affect the public or wider community. The proposal will therefore not create, accelerate, worsen or exacerbate the natural hazards associated with earthquakes or liquefaction.

The site is currently rugged, with the proposal to create a platform for future works on the site. The proposal will involve the flattening of mounds, reducing the risk of erosion or slips as a result of the proposed alteration. The proposed earthworks will also be carried out in accordance with the earthworks management plan, which will reduce the risks of the proposed earthworks including compliance with the Health and Safety At Work Act of 2015 which will appropriately mitigate any risk to human life associated with slips or erosion. The proposal will also include a restricted work site, which will not allow for public access which will reduce any risk to the wider community or public to an acceptable level. The proposal will therefore not create, accelerate, worsen, or exacerbate the natural hazards associated with slips or erosion.

Overall effects associated with the proposed earthworks with respect to natural hazards will be less than minor, and do not warrant public notification.

Contaminated Land.

The proposal is taking place on land that has been assessed as likely to have been used for HAIL activities in the past, despite not being on the Greater Wellington Regional Council SLUS Database. The Detailed Site Investigation (DSI) has been carried out by a separate party from the applicant, which included laboratory analysis and a recommendations. The findings of the report show that the subject site does include contamination; however, no human health criteria were exceeded. The proposal also included five bulk PACM samples, two of which contained chrysotile (white asbestos), which were also below the human health criteria.

The DSI identifies that a remedial action plan will be provided to Council prior to the works taking place which will be prepared in accordance with the Ministry for the Environment (MfE) Guideline which will address the timing of remediation, and standard upon completion. A condition of consent will also require that the remedial action plan earthworks and the remaining site development shall be overseen by a suitably qualified an experienced individual who is familiar with identifying asbestos containing material and other contaminated soils. A site validation report shall also be submitted to council upon completion of the works, with evidence that the site has been made safe for the intended future use.

The soil requiring disposal will be removed to a Class A landfill subject to approval from the landfill manager. The proposal is therefore consistent with the restricted discretionary matters in controlling the adverse effects that contaminated land can cause with management plans in place, which will ensure that the works are carried out in a professional manner. The proposal will therefore not result in public harm or risk public exposure to the contaminants of the site. Overall, the effects from the use of the site are less than manner, and disturbance of the land will be undertaken in a controlled manner.

Public notification is not required under step 3.

Step 4 – Public notification is required in special circumstances
If public notification is not required under step 3 it may still be warranted where there are special circumstances.

Do special circumstances exist that warrant public notification?	No

Special circumstances have been defined as circumstances that are unusual or exceptional, but may be less than extraordinary or unique. The proposal relates to bulk earthworks consent to prepare the subject site for future development. The proposed earthworks are of a considerably large scale, however the District Plan is considered to provide clear policy direction and assessment matters relevant to the proposal, and it is considered that public notification will not reveal any new information relevant to determination.

On this basis, it is not considered necessary to publicly notify the application due to special circumstances.

Conclusion
Public notification is not required.

5.2 - LIMITED NOTIFICATION STEPS - SECTION 95B

As determined in section 5.1, public notification is not required. Pursuant to section 95B of the Resource Management Act, a 4 step process must therefore be followed to determine if limited notification is required.

Step 1 – Certain affected groups/persons must be notified
Limited notification is mandatory for certain groups/persons.

Are there affected customary rights groups?	No
Are there affected customary marine title groups (for accommodated activities)?	No
Is the proposal on or adjacent to, or may affect, land that is subject to a statutory acknowledgement and whether the person to whom the statutory acknowledgement is made affected under section 95E?	Yes

The subject site is adjacent to Te Ati Awa (Hutt River), and is owned by Te Runanga O Toa Rangatira Incorporated. Ngati Toa have provided written approval for the proposal. Port Nicholson Block Settlement Trust have been notified of the application. It is also noted that the site is setback approximately 80m from the river bed. Further as identified above in section

5.1 the effects of the proposal are limited in scope to the underlying allotment, and is not considered that limited notification is necessary considering the localised scale of works with regard to the adjacent statutory acknowledgement area.

Limited notification is not required under step 1.

Step 2 – Limited notification is precluded in certain circumstances

Limited notification to any other persons not referenced in step 1 is precluded in certain circumstances (unless special circumstances apply under step 4).

Are all activities in the application subject to a rule in a Plan or National Environmental Standard precluding limited notification?	No
Is the application for the following, but no other activity: ▪ A controlled activity (other than a subdivision) under the District Plan	No

Rule 14H 2.1(a) is excluded from limited notification pursuant to 14H2.1(a)(i) and hence will not be considered in the limited notification assessment. However, breaching the earthworks rules is not precluded from limited notification. Therefore, limited notification is not precluded under step 2.

Step 3 – Certain other persons must be notified

If limited notification is not precluded under step 2, limited notification is required for any persons found affected under s95E.

Are any of the following persons 'affected' under s95E? ▪ For 'boundary activities' an owner of an allotment with an 'infringed boundary'	No
For all other activities, are there any affected persons in accordance with s95E?	No (see below assessment)

In accordance with s95E are there any affected persons?

Section 95E(3)(a) stipulates that those individuals who give written approval to a proposal cannot be considered to be an affected person/s. The following persons have given written approval:

- Naomi Solomon on behalf of Te Runanga O Toa Rangatira Incorporated

In accordance with section 95E, I have considered whether the proposal could adversely affect any other persons. This assessment has considered the owners and occupiers of the following properties:

- 27, 29. 31, 32, 34, 36,37, 38. 39, 40, 41, 42, 43, 44, 45, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68 and 70 Mary Huse Grove
- 8 Hutt Rail Way Central
- 10 Benmore Crescent
- 50 Benmore Crescent

I consider there to be no affected persons as the potential environmental effects will be less than minor for the following reasons.

27, 29. 31, 32, 34, 36,37, 38. 39, 40, 41, 42, 43, 44, 45, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68 and 70 Mary Huse Grove

The above properties are each dwellings located along the western side of Mary Huse Grove and are the closest to the proposed development site. The dwellings are separated from the subject site by the railway, which provides an approximately 35m buffer between the sites.

Potential earthworks effects on the environment relating to visual amenity, natural features and topography, historical and cultural sites of significance, and natural hazards were discussed in detail in Section 5.1 above in relation to effects on the environment. In particular the noxious effects that can be associated with large scale earthworks were discussed, and it was noted that the applicant has applied to meet the permitted standards with regard to noise, dust, vibration, and vehicle movement standards, and due to the context of the permitted baseline the effects assessment in 5.1 is considered applicable to these properties.

The proposal will change the amenity as observed by these properties particularly with regard to outlook; however, it is noted that the permitted baseline allows for the removal of vegetation in the Rural Zone as a permitted activity. Further no notable vegetation is proposed to be removed. The proposal is largely consistent with the permitted baseline with regard to effects, with the notable failure being due to the scale of the proposed works. The works are proposed to be staged over 6-8 months but may take place over two earthworks seasons depending upon the timing of the proposed works. The proposal includes stabilising earthworks upon completion, such that the effects will be retained to the underlying allotment and will not result in long term scarring or exposed cuts on the site. Further due to the topography of the site in relation to Mary Huse Grove and their separation from the subject site by the railway, the occupants of the site will have limited views of the proposed earthworks. The site is also large with only a small portion being visible to the occupants of the above properties, such that the bulk of the proposed works will not be visible to the above properties and will occur internally within the site. The effects as visually observed will have less than minor impacts with regard to the effects upon amenity.

As identified above in the natural hazards assessment in section 5.1 the proposal will not create, accelerate, exacerbate or worsen the natural hazards as experienced by the wider environment, and the assessment is also considered applicable to the above properties, as per the reports included in the application.

Overall, the effects on the above properties is considered less than minor.

Waka Kotahi (NZTA)

The subject site is adjacent to the State Highway corridor (SH2). The applicant has volunteered transport conditions to mitigate any adverse effects on the State Highway designation. Waka Kotahi supports the proposal based on those volunteered conditions.

KiwiRail

The subject site is adjacent to the KiwiRail rail corridor, however the applicant provided confirmation that the proposed works will not involve the disruption of the railway corridor. The proposal will not involve vehicle movements over the railway, nor will works encroach into this property. The site is characterised by a clear distinction along the boundary, due to the cut into the topography of the railway. The proposal is also not considered to be a sensitive activity, whereby reverse sensitivity is unlikely to be an issue, considering the time limited

nature of the proposed works and that no human habitation of the site is proposed as a part of this resource consent.

The noxious effects of the proposal has been confirmed to be in accordance with the permitted activity standards of the District Plan, with the applicant proffering a condition of consent that an earthworks management plan is submitted to council prior to works taking place, that will include appropriate controls, such that the effects of the proposal are localised to the underlying allotment. The proposal will therefore not interfere with the railway activity or result in discernible adverse effects. The effects in relation to earthworks have been assessed above in Section 5.1 with regard to effects on amenity and the public and these are considered to be true in relation to the Kiwi Rail site.

50 Benmore Crescent

The above property is located to the south of the subject site and is currently vacant. The site is a thin vegetated strip that is located around the approximate site of the existing stream, which then runs through the subject site. The site is not habited, nor includes any physical improvements, with the land held by Greater Wellington for soil conservation and river control purposes. As the property does not include any improvements, it is considered appropriate that the assessment made under section 5.1 is applicable, particularly with regard to amenity and natural hazard effects.

10 Benmore Crescent

10 Benmore Crescent is located to the north of the subject site, sharing a common boundary with the subject site. The site includes fenced off storage of machinery and includes an onsite container. The property is not habited.

Potential earthworks effects on the environment relating to visual amenity, natural features and topography, historical and cultural sites of significance, and natural hazards were discussed in detail in Section 5.1 above in relation to effects on the environment. In particular the noxious effects that can be associated with large scale earthworks were discussed, and it was noted that the applicant has applied to meet the permitted standards with regard to noise, dust, vibration, and vehicle movement standards, and due to the context of the permitted baseline the effects assessment in 5.1 is considered applicable to these properties. The most notable change for the above property will be with regard to vehicle movements, which will be a noticeable departure from the existing use of the site, which is presently vacant, however it is anticipated that the scale of works will be readily absorbed by the receiving environments. Further the proposed work is for a period of 6-8 months and will therefore be of a time limited nature which will not have ongoing effects. Further it is anticipated that traffic levels may be higher during construction works of a site, and be of a temporary nature.

The proposal includes a staged approach which will reduce the amenity effects of the proposal to an acceptable level, as the proposal will be incremental, with only portions of the proposed design being visible from the above property. Further as the above property is utilised for storage it is not anticipated that the change in amenity upon completion of the earthworks will have effects that would warrant notification.

All Other Persons

- Effects associated with earthworks, construction, subdivision and servicing have been assessed as having less than minor effect on all persons for the reasons set out in section 5.1 above. This assessment is applicable to the owners and occupiers of the above adjacent sites and persons beyond adjacent properties.
- Onsite earthworks required for the development will be managed through adherence to the proposed conditions of consent requiring erosion and sediment control measures to be designed, implemented and maintained in accordance with the Greater Wellington Regional Council's guide "Erosion and Sediment Control Guideline for Land Disturbing Activities in the Wellington Region" and will include specific measures to reduce the effects of the proposal to an appropriate scale that will not adversely impact the amenity as experienced by the wider community. Other conditions of consent are proposed to manage the noise and vibration effects associated with the earthworks and construction of the proposed dwellings. Consequently, earthwork and construction effects are considered to be less than minor on all persons.
- Effects associated with Natural Hazards have been assessed in section 5.1 and concluded that the effects will be less than minor. This assessment is applicable to the owners and occupiers of the above adjacent sites and persons beyond adjacent properties.
- The contamination of the site is limited to the underlying property and matters associated with the contaminated spoil will be addressed in the remedial action plan and subsequent plans submitted to council, with the soil being removed and disposed of in a Class A landfill. The conditions of consent will ensure there will be no exposed contaminants and that the site will be appropriately remediated such that there will be no public risk or risk to the above and adjacent properties is anticipated as a part of this disposal process.
- All other persons are sufficient setback or screened such that effects will be less than minor.

Overall, the effects on the above property is considered less than minor.

Limited notification is not required under step 3.

Step 4 – Limited notification is required under special circumstances

If limited notification is not required under step 3, limited notification may still be warranted where there are special circumstances.

Do special circumstances exist that warrant notification of any persons to whom limited notification would otherwise be precluded?	No

For the reasons outlined under step 4 in section 5.1 above I do not consider there to be any special circumstances that warrant limited notification of this proposal.

Conclusion

Limited notification is not required.

5.3 - NOTIFICATION DECISION

In accordance with the notification steps identified in section 5.1 and 5.2 the application shall proceed on a non-notified basis

6. DETERMINING THE APPLICATION

Section 104 requires, when considering a resource consent application, that Council must, subject to Part 2, have regard to any actual or potential effects on the environment; any measure agreed or proposed by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any negative effects; any relevant provisions of a National Environmental Standard; other regulations; a National Policy Statement; a New Zealand Coastal Policy Statement; a Regional Policy Statement or proposed Regional Policy Statement; a plan or proposed plan; and any other matter the consent authority considers relevant and reasonably necessary to determine the application.

6.1 - ASSESSMENT OF ACTUAL OR POTENTIAL EFFECTS ON THE ENVIRONMENT UNDER S104(1)(A)

Amenity

Regarding visual amenity effects, the consent will be subject to conditions which manage earthworks nuisance effects, such as dust, sedimentation, tracking, construction noise and traffic and vibration. Amenity effects arising from earthworks will also be managed through the earth worked areas being built over, landscaped, or sealed as soon as practicable. The staging of the proposed earthworks will result in the activity being localised to parts of the site at any one time, reducing adverse effects associated with long term scarring or exposure of the site, such that the amenity effects are appropriately reduced. Further due to the size of the site in comparison to the neighbouring allotments and the topography of the site in relation to adjacent land parcels the visible works proposed on the site are limited. Overall, the amenity effects are to be managed onsite and there will be no long-term scarring.

Existing Natural Features and Topography

The site has no notable features or topography which could be affected by the proposal, being rugged and having no onsite notable vegetation. Section 5.1 assessed that the changes to the subject site proposed via this resource consent is not a loss of natural topography as the subject site has been substantially altered over time to the current topographical formation. The excavated area will be stabilised and subsequently hydroseeded or covered upon completion of the earthworks such that no areas of exposed cut will remain, and while there will be a loss of vegetation it is noted that this is consistent with the permitted standards for the Rural Zone. Overall, the effects of the change in topography will be appropriately managed and will not adversely affect the receiving environment.

Historical or Cultural Significance

As identified in section 5.1 the site is not of a known cultural site, nor is the site of archaeological or heritage value as per the archaeological report prepared by the applicant.

Natural Hazards

As identified in s.5.1 of this Report the site is located in close proximity to the wellington fault zone, however as identified the proposal does not include the construction of buildings or

physical improvements, which means that there will be no risk to human life. The proposal is also unlikely to result in a change in flooding as per the report prepared by River Edge Consulting Limited which notes that where the recommendations of the report are observed the consent will not result in flooding upon the adjacent area. The site is not included within the flood or inundation overlay of the District Plan.

The proposal also includes a geotechnical report prepared by Tonkin & Taylor for the application in which it includes a natural hazards assessment. Specifically it notes the following:

A significant geotechnical issue concerning future development of the site is the proximity to the Wellington Fault and the consequences of fault rupture. The Wellington-Hutt Valley segment of the Wellington Fault lies within the site and therefore presents a risk of future development. Estimates suggest that there is a 10-15% likelihood of fault rupture in the next 100 years that could result in the order of 5 m horizontal and up to 1 m vertical displacements.

The alluvial soils that underly the site may be susceptible to liquefaction particularly where they are non-cohesive and lie below the groundwater table (are saturated). Liquefaction could result in ground deformation (sand boils, settlement, undulation, and cracking), damage to infrastructure, buildings, and foundations

The alluvial deposits that underly the site may contain isolated zones of compressible cohesive and organic material that may result in settlement of the ground surface when loaded by the proposed fill platform, buildings or structures. Similarly, the uncontrolled fill soils present at the ground surface may also present a settlement risk due to the nature of the material and uncontrolled method of placement. Settlement of the alluvial deposits or uncontrolled fill soils at depth below the proposed fill platform may result in subsidence of the fill surface levels and may result in damage to building or structures. Ground settlement can be mitigated through specific engineering foundation design of any proposed buildings or structures

With regard to the above information supplied with the Geotechnical report it is noted that the proposal is solely for bulk earthworks, and no human occupation or activities which could include a human risk are included within the scope of this resource consent. Further the report concludes that these matters can be specifically managed through adherence to building and engineering standards, which will be a matter of consent for future use of the site.

<u>Wellington Fault Zone</u>

The proposal will include the establishment of a site office within the 20m fault line setback. As per the conditions of consent which have been proffered by council and subsequently accepted by the applicant, the applicant is to submit to council an earthworks management plan which will include the final location of the proposed office and where necessary engineering design to confirm that the building design is acceptable and in accordance with the Building Act. It is noted that the office is a non-habitable building which will be occupied on a temporary basis during the proposed bulk earthworks and is to be removed upon completion of the proposed works. The risk to human safety is considered minimal.

<u>Contaminated Land</u>

As identified in s. 5.1 of this report the subject site includes contaminated areas, as per the findings included in the DSI, however it is also noted that no human health criteria were exceeded. The DSI is held on record at council and should be read in conjunction with this report, which includes the adopted methodology for 66 sampling points taken across the site. The report concludes that where a remedial action plan is provided to council prior to the works in accordance MfE Guidelines, the use of the contaminated land is appropriate. These effects will be appropriately managed through the conditions of consent which have been provided and reviewed by the applicant and subsequently accepted. The proposed works will limit public access to the site, and works will be overseen by a suitably qualified individual skilled in the identification and management of contaminants such that the risk to human health is minor.

Conclusion
I consider the actual or potential effects on the environment to be acceptable for the reasons outlined above.

6.2 - ASSESSMENT OF THE RELEVANT PROVISIONS OF THE DISTRICT PLAN UNDER S104(1)(B)

Objectives and policies of the District Plan
I consider the proposal is consistent with the relevant District Plan objectives and policies identified below:

14H Natural Hazards

Objective
To avoid or reduce the risk to people and their property from natural hazards associated with seismic action, landslides, flooding and coastal hazards.

Policy

a) *That the area at risk from fault rupture causing permanent ground deformation along the Wellington Fault be managed by the Wellington Fault Special Study Area to address the effects of subdivision and development on the safety of people and their property.*
b) *That suitable engineering and emergency management measures be adopted to safeguard people and their property from liquefaction, groundshaking and tsunami hazards.*
c) *That where areas susceptible to landslide have been identified, appropriate conditions of compliance will be provided to mitigate the adverse effects of subdivision and development on the vulnerability of people and their property.*
d) *That suitable engineering, emergency management and land use control measures be adopted to reduce the vulnerability of people and their property to flood hazards.*
e) *That suitable engineering, emergency management and land use control measures be adopted to reduce vulnerability of development along the coast.*

<u>Assessment</u>
The proposal will include the establishment of a site office within the 20m fault special study area, which will be temporary and removed upon the completion of works. As per the District

Plan rule, due to the purpose of the office being in association with the proposed bulk earthworks it fails the above standard.

The engineering design for the proposed office will be submitted to Council. It is also noted that the office will be occupied on a transitory basis, with limited occupation, as such the proposal is unlikely to result in risk to human health or safety. Further as a temporary structure that is an accessory building and is set to be removed, the building will not have permanent fixtures to ground.

A geotechnical assessment has also been submitted as part of this resource consent which concludes that the chance of an earthquake occurring is relatively low, and that while the site is at liquefaction risk this is dependent upon the earthquake and the bulk of works are occurring outside of the buildings with further geotechnical investigation to be undertaken for future developments on the site. A condition of consent will also provide for an emergency management measures to be provided within the scope of the proposed earthworks management plan. The site is also not susceptible to landslides and as identified in the flooding report where the recommendations are observed the proposal will not result in flooding of the surrounding area. The proposal is therefore consistent with the above provisions.

14I Earthworks

14I 1.1 Natural Character

Objective
To ensure that earthworks are designed to maintain the natural features that contribute to the City's landscape.

Policy

a) *To ensure that earthworks are designed to be sympathetic to the natural topography.*

14I 1.2 Amenity, Cultural and Historical Values

Objective
To ensure earthworks do not affect adversely the visual amenity values, cultural values or historical significance of an area, natural feature or site.

Policy

a) *To protect the visual amenity values of land this provides a visual backdrop to the City.*
b) *That rehabilitation measures be undertaken to mitigate adverse effects of earth upon the visual amenity values.*
c) *To protect any sites with historical significance from inappropriate earthworks.*
d) *To recognise the importance of cultural and spiritual values to the mana whenua associated with any cultural material that may be disinterred through earthworks and to ensure that these values are protected from inappropriate earthworks.*

<u>Assessment</u>

The proposal will result in the cut of 390,000m^3 of soil across an area of 131,121m^2, which consists of altering the topography of the entire site to create a level platform for future works on the site. The proposal is an alteration of the topography of the site, from the present rugged terrain, however it is noted through aerial images over time that the site has been influenced through human intervention to the present state, and therefore the levelling of the site is not considered as a loss of important or natural terrain.

The site is also not of historical significance with the archaeological report noting that pre-1900's activity has been removed from the site and a number of land uses have taken place on the site since. The applicant has also proffered an accidental discovery protocol such that any accidental discoveries will be appropriately managed. The proposal includes affected party approval from Ngati Toa with regard to the cultural effects on land owned by Te Runanga O Toa Rangatira Incorporated.

The proposal will also not create, accelerate, exacerbate, or worsen natural hazards, as identified in the geotechnical or flooding report included within the application. The existing environment contains little topsoil material, and is predominantly covered with gravel or vegetation, with the vegetation being removed as a permitted activity. The proposal will result in the site being immediately filled over by material such that the proposal will not result in exposed cuts and there will be no long-term visual impact from the works. The application area is also not visible from surrounding public areas, and thus is not considered to be an area forming the 'backdrop of the city'. Overall, the proposal is considered to be consistent with the provisions identified above.

6.3 - ASSESSMENT OF THE RELEVANT PROVISIONS OF OTHER STATUTORY PLANNING DOCUMENTS UNDER S104(1)(B)

National Policy Statement for Freshwater Management

The revised National Policy Statement for Freshwater Management (NPSFM) came into effect on the 3rd of September 2020. It sets out the objectives and policies for freshwater management and provides direction for local planning and decision-making in regard to managing freshwater under the RMA.

The NPSFM contains one overall objective which seeks to ensure that natural and physical resources are managed in a way that prioritises the health and well-being of waterbodies and freshwater ecosystems, the health needs of people, and the ability of people and communities to provide for their social, economic, and cultural wellbeing, now and in the future.

The proposal is considered as to affect the above policy statement due to the location of the stream which flows through the property, which will be affected by the proposed works. The proposal includes erosion and sediment controls will be developed in conjunction with the contractor. The installation of erosion and sediment controls will avoid or minimise sediment discharges to surface water as far as practicable. With the installation of erosion and sediment controls, the proposal is not expected to further reduce freshwater quality such that it will be detrimental to the habitat of freshwater species or impinge on their protection, while allowing the applicant to provide for the communities social and economic well-being. The proposed culverts for site layout 1 are upgrades to the existing culverts in the same locations, with

larger culverts. Therefore, the loss of river extent and values has been avoided to the extent practicable while ensuring crossings are available. Additionally, fish passage upstream/downstream will be retained. Overall, the proposal is considered to be consistent with the NPSFM.

6.4 – PURSUANT TO S104(1)(C) ARE THERE ANY OTHER MATTERS RELEVANT AND REASONABLY NECESSARY TO DETERMINE THE APPLICATION?

I consider there are no other matters relevant and reasonably necessary to determine the application.

6.5 - PART 2 OF THE RESOURCE MANAGEMENT ACT

(5) The proposal will allow for earthworks across the site to level the property creating a platform, which will allow for subsequent development or use of the site. This will allow for appropriate use and development of the existing physical resource in a way that will provide for the applicants economic and social wellbeing without unacceptably compromising the life supporting capacity of the surrounding environment.

(6) Section 6(h) provides for the management of significant risks from natural hazards. The proposal is considered to be in line with the above provision as the proposal is solely for bulk earthworks at this stage, with the applicant identifying that engineer approaches will be undertaken with respect to future development or use of the site. The applicant has also provided evidence that the subject site, while subject to risk from natural hazard at this stage will not involve a risk to human life, as the proposal sis solely for earthworks across the site. The proposal will also not create, accelerate, exacerbate or worsen the existing natural hazards. The proposal is considered consistent with meeting this section of the Act.

(7) The proposal will not unacceptably affect established amenity values for surrounding land. The proposal is for bulk earthworks which have an expected duration of works of 6-8 months thus being temporary in nature, and while it will change the amenity of the site as observed from the surrounding environment it is noted that this change in use is in line with historical uses of the site, and will alter the topography in a beneficial manner which is more aesthetically pleasing rather than the current environment which is characterised by overgrown vegetation, rugged topography abandoned buildings and large gravel areas. The site is also not visually prominent as observed from the wider environment, with views toward the site being transient due to the viewpoint being from SH2 or via the bike tracks. The proposal will also include grassing such that no exposed areas of cuts will remain exposed. The proposal is considered consistent with the matters of s.7 of the RMA.

(8) The Principles of the Treaty of Waitangi have been taken into account as a part of this assessment. It is considered that the proposal will not be contrary to the relevant principles and consultation with local Tangata Whenua has been appropriately undertaken.

6.6 - SUBSTANTIVE DECISION

In accordance with section 104C, I have considered those matters over which discretion is restricted in a national environmental standard or other regulations or plan or proposed plan and have decided to grant the application subject to conditions under s108 relating to those matters over which discretion is restricted.

7. CONDITIONS OF RESOURCE CONSENT

In accordance with s108 of the Resource Management Act, resource consent has been granted subject to the following conditions:

General

1. That the proposal is carried out generally in accordance with the information and approved plans submitted with the application and the further information request of which includes information supplied on the following dates:
   - 8 September 2022 (s92(1) response regarding earthworks)
   - 12 December 2022 (updated earthworks information and confirmation of Wellington Regional Council consent granted)
   - 14 December (updated earthworks volumes)

   And the following plans of which includes
   - Earthworks Levels, Benmore Crescent, Manor Park, Prepared for Rosco Ice Cream Ltd by SpencerHolmes, Drawing Number S20-0280-EW2, Revision A, Dated 12 November 2022.
   - Earthworks Cut and Fill Plan, Benmore Crescent, Manor Park, Prepared for Rosco Ice Cream Ltd by SpencerHolmes, Drawing Number S20-0380-EW1, Revision A, Dated 12 November 2022.

2. That the consent holder advises Council (enforcement@huttcity.govt.nz or 04 560 1044) a minimum of five working days before any work starts on site to arrange a pre-commencement meeting; and that the consent holder also supplies the name, phone number and address of the main contractor and, if applicable, the same details for the earthworks company.
   Important notes:
   - *When given notice of a start date, a compliance officer will suggest an on-site meeting to run through a checklist of things to make sure the project runs as smoothly as possible. This service is included in the resource consent application fee. Using it could avoid difficulties later on. Please note that additional monitoring visits will be charged at $180 per hour.*
   - *Notification of work commencing is separate to arranging building inspections.*

3. The consent holder shall maintain a permanent record of any complaints received alleging adverse effects from or related to the works. This record shall include:
   - The name and address of the complainant (if provided);
   - The date and time that the complaint was received;
   - Details of the alleged event;
   - Weather conditions at the time of the complaint; and
   - Any measures taken to mitigate/remedy the cause of the complaint.
   - This record shall be made available to the Council on request.

Earthworks

4. Prior to the commencement of any works on site, the consent holder shall submit details of how stormwater and surface water run-off will be controlled during site works to ensure they do not affect adjoining properties. The consent holder shall alert council within 48 hours of any changes to the stormwater and surface water controls and cease all works should this affect the neighbouring allotments.
   Note: *Compliance with this condition can be achieved by the consent holder submitting the approved Erosion and Sediment Control Plan as required by Greater Wellington Regional Council consent WGN230031 [38481] [38483]*

5. That the consent holder undertakes all earthworks in such a way that no sediment enters the HCC stormwater system, will not exacerbate effects flooding effects on the surrounding properties; and that the consent holder installs and maintains sediment control measures in compliance with Greater Wellington Regional Council's Erosion and Sediment Control Guide for Land Disturbing Activities in the Wellington Region.

6. That the consent holder paves, metals, re-grasses, hydro-seeds or plants all areas exposed by earthworks trenching or building work as soon as possible after excavation or, at the latest, within a month of completing earthworks to the satisfaction of Council subdivision engineer; and that the consent holder repeats any seeding or planting that fails to become fully established within 12 months of the completion of earthworks.

7. That the consent holder ensures vehicles and machinery leaving the site do not drop dirt or other material on roads or otherwise damage road surfaces; and that if such spills or damage happen, the consent holder cleans or repairs roads to their original condition, being careful not to discharge the material into any stream, stormwater system or open drainage channel in the process. (The term "road" includes footpaths, vehicle crossings and berms.)

8. That the consent holder takes into account the geotechnical report prepared by Tonkin Taylor Ltd dated May 2022 and engages a qualified geotechnical engineer or engineering geologist who shall supervise construction of earthworks and that all works are in general accordance with the considerations outlined within the site-specific geotechnical report. The engaged engineer must make sure the site is in a safe condition at the end of all works.

<u>Contaminated soils</u>

9. That the consent holder undertakes the works in general accordance with the Site Management Plans prepared by ENGEO and submitted with the application, and any subsequent amendments. A qualified professional with experience with contaminated sites shall supervise the earthworks.

10. That prior to any soil disturbance the applicant shall erect a notice which shall be visible to all persons entering the site noting the contamination hazard. The sign shall be a minimum of A3 size, laminated and replaced as necessary such that it remains onsite until the disturbance of earth and soil stabilisation is completed.

11. That upon completion of the earthworks a site validation report or a long-term site management plan will be prepared in general accordance with the Contaminated Land

Management Guidelines No. 1- Reporting on Contaminated sites in New Zealand and provided to Council to hold on Record.

Landscaping

12. Prior to earthworks commencing onsite, a suitably qualified and experienced Landscape Architect shall prepare a planting plan for the reach of Dry Creek within the property identified as Fee Simple, 1/1, Section 1, 6 Survey Office Plan 493901. The planting plan shall, as a minimum, cover an area extending 10 m outwards over both banks when measured from the centre of the Dry Creek channel. The objective of the planting plan is to enhance the natural character values of the riparian margin and shall address the following as a minimum:
    a) *Pest plant removal;*
    b) *Native planting to be undertaken, including species and composition; and*
    c) *Ongoing maintenance of pest plants and native planting undertaken. The consent holder shall complete the planting outlined within the planting plan within 2 years of the earthworks being completed; and*
    d) *Any plantings which fail to establish or dying or diseased plants within 12 months of the initial planting will be replaced.*

Office

13. That upon completion of the proposed earthworks the site office is to be removed from the site within 3 months, or moved internally, such that the office is more than 20m outside of the fault study overlay area.

Transport

14. All earthworks shall be carried out in general accordance with the drawings and assumptions included in the conclusions of the Memo from Tonkin and Taylor title 'Te Rangihaeata Development – Proposed earthworks Slope Stability – Rev B' dated 1 December 2022; and the Spencer Holmes design plans titled 'Earthworks Cut & Fill Plan – drawing number S20-0380-EW1 REVA, dated 12.10.2022' and 'Earthworks Levels – drawing number S20-0380-EW2 REVA, dated 12.10.22'.

15. Should the consent holder identify discrepancies between the existing contours on the drawings and the actual ground contour when setting out the works, then they shall immediately (within 24 hours) bring such discrepancies to the notice of Hutt City Council.
    Note: *any notification under this condition must also be raised to Waka Kotahi (via the Wellington Transport Alliance).*

16. Should the consent holder identify any unexpected ground conditions during the earthworks, then they shall immediately (within 24 hours) bring such discrepancies to the notice of Waka Kotahi (via the Wellington Transport Alliance) so that Waka Kotahi's geotechnical engineers can be informed; undertake a site visit if required; and approve of any alternative design solution if required. Any further design and construction work deemed necessary to protect State Highway 2 assets (including the carriageway) shall be carried out by the consent holder at their cost.

17. To achieve the requirements of the Bridge Manual (v3.4), Table 6.1 Total settlement, differential settlement and horizontal displacement limits for DCLS (ULS) event, for a 1:1000-year event, cut slopes shall not exceed 6m in height from actual existing ground levels (on the land between the western side of Dry Creek and adjacent to State Highway 2). Should actual ground contours or actual ground conditions give rise to the need for cuts of greater than 6m, Hutt City Council shall be notified (within 24 hours) so that the Waka Kotahi geotechnical engineers can undertake a site visit if required; and approve any alternative design solution. Any further design and construction work deemed necessary to protect State Highway 2 assets (including the carriageway) shall be carried out by the consent holder at their cost.
    Note: *any notification under this condition must also be raised to Waka Kotahi (via the Wellington Transport Alliance).*

18. Hutt City Council shall be immediately notified (within 2 hours) of any damage to State Highway 2 resulting from the earthworks and all damage shall be remedied by the consent holder at their cost.
    Note: *any notification under this condition must also be raised to Waka Kotahi (via the Wellington Transport Alliance).*

19. Dust from carrying out the earthworks shall be reduced through appropriate means so that dust does not become a nuisance to motorists or the state highway pavement surface. Dust will be deemed a nuisance if either the contractor or Waka Kotahi receive complaints from the motoring public about dust; or if advised by the Wellington Transport Alliance.

20. Hutt City Council shall be informed when works commence, and when works are completed.
    Note: *any notification under this condition must also be raised to Waka Kotahi (via the Wellington Transport Alliance).*

21. Finalised as built drawings of the earthworks platform shall be provided to Hutt City Council at the completion of the works.
    Note: *the as built drawings under this condition must also be provided to Waka Kotahi (via the Wellington Transport Alliance).*

<u>Accidental Discovery Protocol</u>

22. That in the event of an “accidental discovery” of suspected archaeological material, the consent holder is to undertake the following steps:
    a. All activity affecting the immediate area (work within 20m of the discovery) shall cease and the Regional Archaeologist of Heritage New Zealand, Port Nicholson Block Settlement Trust, Ngāti Toa Rangatira Incorporated and Heritage New Zealand shall be notified;
    b. Steps shall be taken to secure the site and ensure that archaeological matter remains undisturbed;
    c. Works at the site shall not recommence until an archaeological assessment has been made and archaeological material has been dealt with appropriately;
    d. If any archaeological remains or sites of interest to Maori are identified, no further modification of those remains shall occur until Heritage New Zealand

Regional Archaeologist and Tangata Whenua have been consulted and appropriate response has been advised. 22 of 23

e. For burials/koiwi, steps a) to d) above shall be taken and the Regional Archaeologist Heritage New Zealand, the New Zealand Police, and the Iwi representative(s) for the area contacted immediately. The Consent Holder must allow the above parties to inspect the site and in consultation with them, identify what needs to occur before Construction Works can resume

Note: The consent holder is advised that under the Heritage New Zealand Pouhere Taonga Act (2014) an archaeological site is defined as a place associated with pre-1900 human activity where there may be evidence relative to the history of New Zealand. For pre-contact Maori sites this evidence may be in the form of bones, shells, charcoal, stones etc. In later sites of European origin artefacts such as bottle glass, crockery etc. may be found, or evidence of old fountains, wells, drains or similar structure. Burials/koiwi tangata may be found from any historic period.

Note: This condition is required to mitigate any adverse effects upon potential sites of historical, cultural or archaeological significance

Processing Planner:

Zachery Montgomery
Intermediate Resource Consents Planner

Peer reviewer:

Nancy Gomez
Senior Resource Consents Planner

Application lodged: 29 July 2022
Application approved: 21 December 2022
No of working days taken to process the application: 99

Application on s92(1) hold: 30 August 2022
Application off s92(1) hold: 08 September 2022
Application on applicant agreed hold: 28 September 2022
Application off applicant agreed hold: 21 December 2022
S37A(4)(b)(i) days added to timeframe due to special circumstances: 20 days*

**Note: Assessment timeframes were extended by 20 working days in accordance with S37A(4)(b)(i). Due to cumulative factors including the high volume of applications, an increase in the size and complexity of applications and staff shortages, workloads have exceeded Council's processing capacity. Council have taken every possible step to outsource the excess workload.*

8. NOTES:

- In accordance with section 357 of the Resource Management Act 1991, the consent holder is able to object to the conditions of the consent. The consent holder must submit reasons in writing to Council within 15 working days of the date of this decision.

- In accordance with section 120 of the Resource Management Act 1991, the applicant, on the review of consent conditions may appeal to the Environment Court against the whole or any part of this decision by the consent authority.

- The consent lapses, in accordance with section 125 of the Resource Management Act 1991, if the proposal is not given effect to within five years.

- The consent applies to the application as approved by Council. The consent holder should notify Council if there are changes to any part of the plans. Council may require that the consent holder submits a new resource consent application.

- The proposal has been assessed against the requirements of the city's District Plan. Bylaws may apply to the proposal that may require separate approval from Council before starting any site works. See huttcity.govt.nz for a full list of bylaws.

- The proposal has not been checked for compliance with the Building Act 2004. No associated building work should start without first getting a building consent.

- The consent is not a licence to create adverse effects such as unwarranted dust, noise or disruption. It does not change the legal duty to avoid, remedy or minimise such effects. Council may enforce the provisions of the Resource Management Act 1991 if the consent holder fails to meet this obligation.

- Failure to comply with an abatement notice may result in Council imposing an infringement fine or initiating prosecution.

- Advice note from Heritage New Zealand: The property has, or is likely to have been occupied prior to 1900. Any disturbance of land or damage or destruction of any building or structure associated with human activity prior to 1900, may require an archaeological authority from Heritage New Zealand under the Heritage New Zealand Pouhere Taonga Act 2014. Please contact Heritage New Zealand for further information.

- Before commencement of any work within the legal road corridor, including the laying of services, application is to be made for a Corridor Access Request (CAR). A CAR request can be made through contacting BeforeUdig either on their website: beforeudig.co.nz or

0800 248 344. Work must not proceed within the road reserve until the CAR has been approved, including the approved traffic management plan if required.

- Constructing, modifying or repairing a vehicle crossing requires separate Council approval, in addition to the approved resource consent. The vehicle crossing is to be constructed in accordance with Council's standards and codes. For more information contact the Transport Division via (04) 570 6881 or click the following link: https://www.huttcity.govt.nz/services/roads-and-parking/roads/vehicle-crossings

NO	REVISION	BY	DATE
A	FIRST ISSUE		

RESOURCE CONSENT

GRANTED
15/12/2022

HUTT CITY COUNCIL

HUTT CITY

STATE HIGHWAY 2

BENMORE CRESCENT

WAIRARAPA RAILWAY LINE

MARY HUSE GROVE

LOT 1
6.0792 ha

LOT 2
4.2965 ha

LOT 3
2.8373 ha

5.080 (m)

0.000 (m)

-4.263 (m)

EARTHWORKS AREA: 130,455m²

VOLUMES
CUT (RED): 74,200m³
FILL (BLUE): 155,120m³

MAXIMUM DEPTHS
CUT: 4.3m
FILL: 5.1m

NOTES
VOLUMES ARE TO DESIGN LEVEL
VOLUMES ARE SOLID - NO BULKING OR SHRINKING FACTOR APPLIED

0 50 100 150 200

SpencerHolmes
engineers - surveyors - planners

Level 10 - 57 Willis Street
PO Box 588 Wellington New Zealand
(04) 472-2261 www.spencerholmes.co.nz

CLIENT
ROSCO ICE CREAM LTD

PROJECT
BENMORE CRESENT,
MANOR PARK

DRAWING TITLE
EARTHWORKS
CUT & FILL PLAN

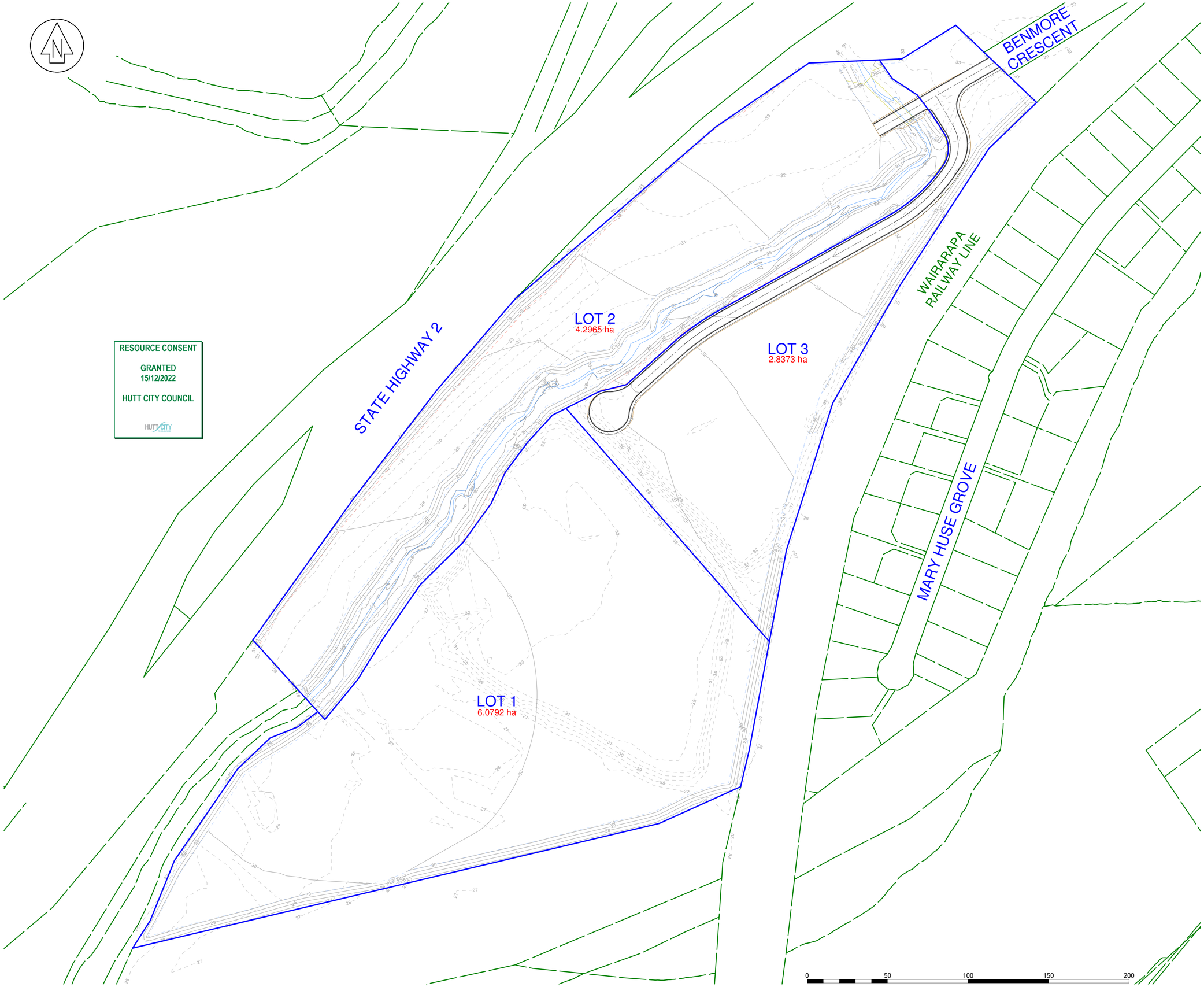
DESIGN CONSULTANT

S20-0380-D1g_EW - EW1
DRAWN SJC
CHECKED MWC DATE 12/10/2022

SCALE	AT
1 : 1100	A1
DRAWING NUMBER	REV
S20-0380-EW1	A

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

NO	REVISION	BY	DATE
A	FIRST ISSUE		



RESOURCE CONSENT

GRANTED
15/12/2022

HUTT CITY COUNCIL

HUTT CITY

COORDINATE DATUM - WELLINGTON 2000

HEIGHT ARE IN TERMS OF
- WELLINGTON DATUM 1953

ORIGIN OF LEVELS
- MARK NAME PIN I SO 497033
- REDUCED LEVEL 31.522m
- SOURCE LINZ GDB

DESIGN CONTOUR

EXISTING GROUND CONTOUR

SpencerHolmes
engineers - surveyors - planners

Level 10 - 57 Willis Street
PO Box 588 Wellington New Zealand
(04) 472-2261 www.spencerholmes.co.nz

CLIENT
ROSCO ICE CREAM LTD

PROJECT
BENMORE CRESENT,
MANOR PARK

DRAWING TITLE
EARTHWORKS
LEVELS

DESIGN CONSULTANT

S20-0380-D1g_EW - EW2
DRAWN SJC
CHECKED MWC DATE 12/10/2022

SCALE	AT
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DRAWING NUMBER	REV
S20-0380-EW2	A

RESOURCE MANAGEMENT - LAND PLANNING - SURVEYING - STRUCTURAL - CIVIL - FIRE

Appendix 8: Plans – Harris Architects

N

WESTERN HUTT ROAD (SH2)

Approx line of extg Stream

Edge to No Build Zone

Shared Drive

Edge to No Build Zone

Adj. Tenant
20,097 m²

KIWIRAIL HUTT VALLEY/ WAIRARAPA LINE

MARY HOUSE GROVE

T&T identified Fault Zone

GATE

Drop Off Area

Canopy Covered Area 750 m²

Retail, Workshop & Cafe Building 950 m²
Ground Level approx 3m stud

Weigh Bridge

Potential green edge between areas.

12.0

Car Parking

Edge to No Build Zone

75.0

RTS Operations Warehouse
10m Stud
3,750 m²

Office Building (Total 800m² over 2 levels) 400 m²
2x3m Stud say 8m O/A

B-Train turning circle 25m dia

T&T identified Fault Zone

Workshops 600 m²
8m Stud

Bin Wash
Canopy
Covered Area
225 m²
Truck Wash

Concrete Hard Stand for Containers 450 m²

MRF Operations Warehouse
10m Stud
Stage TWO Building
Floor with pit & feed belts
2,250 m²

50.0

45.0

7.0

35.0

B & C Operations Warehouse
10m Stud
1,575 m²

Truck Parking

Bin Storage

Edge to No Build Zone

Overal Site Area 57,800 m²

Zone of batter/ retaining to edge of site

0 10 20 30 40 50

prop EIGHTEEN

Waste Management®

PROPOSED FACILITY

Te Rangihaeata **Business Park**

Benmore Cres - Manor Park - Hutt City

proposal for

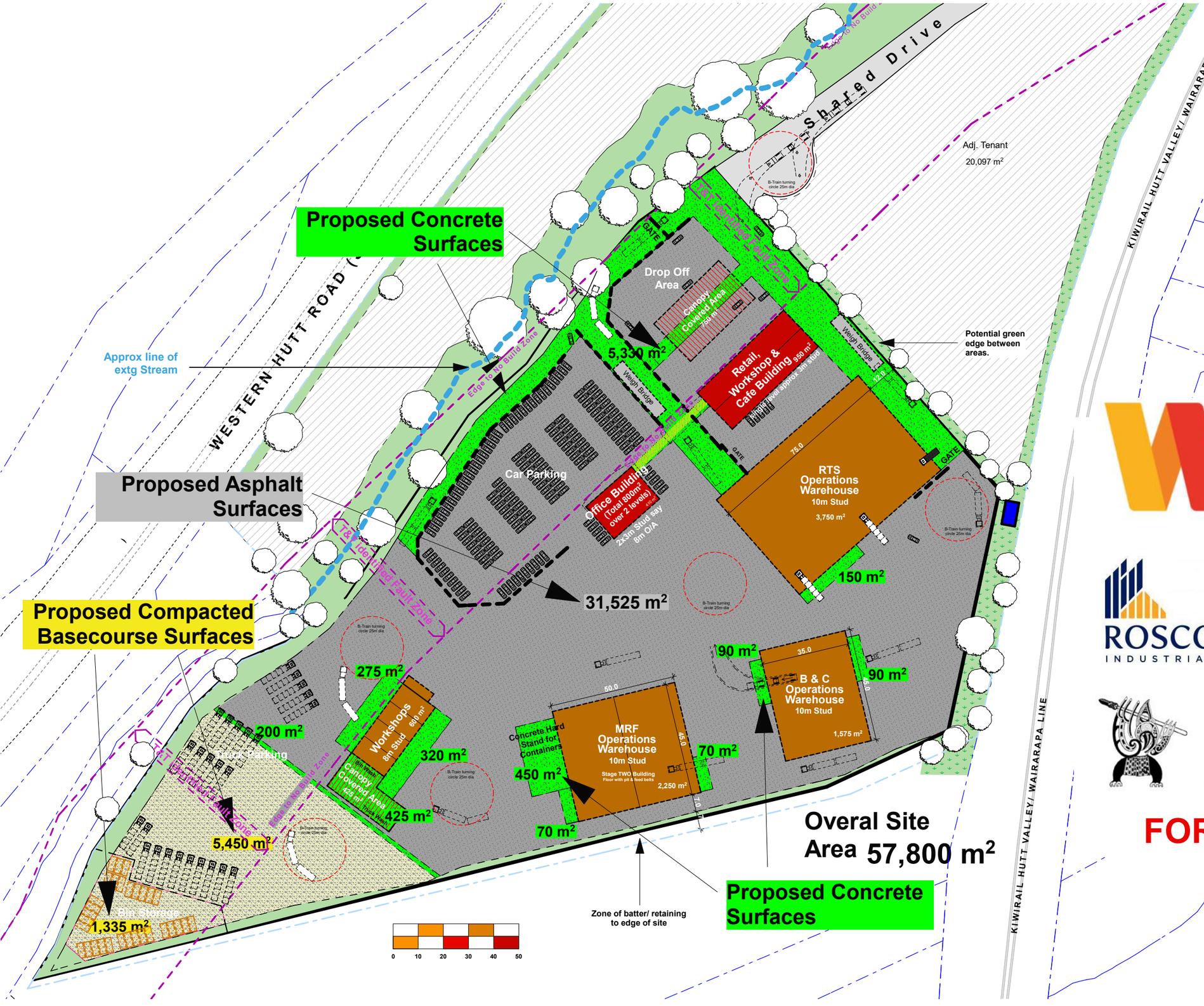
Rosco Industrial & Ngāti Toa Rangatira

06 December 2022 **Refer Bar Scale** 2028

ROSCO INDUSTRIAL

Ngāti Toa Rangatira

HARRIS ARCHITECTS LIMITED
po box 24 120 wellington
m 021 110 8895 **e** derek@harch.nz
www.harch.nz



prop EIGHTEEN

Surface Finishes

Waste Management®

PROPOSED FACILITY

Te Rangihaeata **Business Park**

Benmore Cres - Manor Park - Hutt City

proposal for

Rosco Industrial & Ngāti Toa Rangatira

07 December 2022 **Refer Bar Scale** 2220

ROSCO INDUSTRIAL

Ngāti Toa Rangatira

HARRIS ARCHITECTS LIMITED
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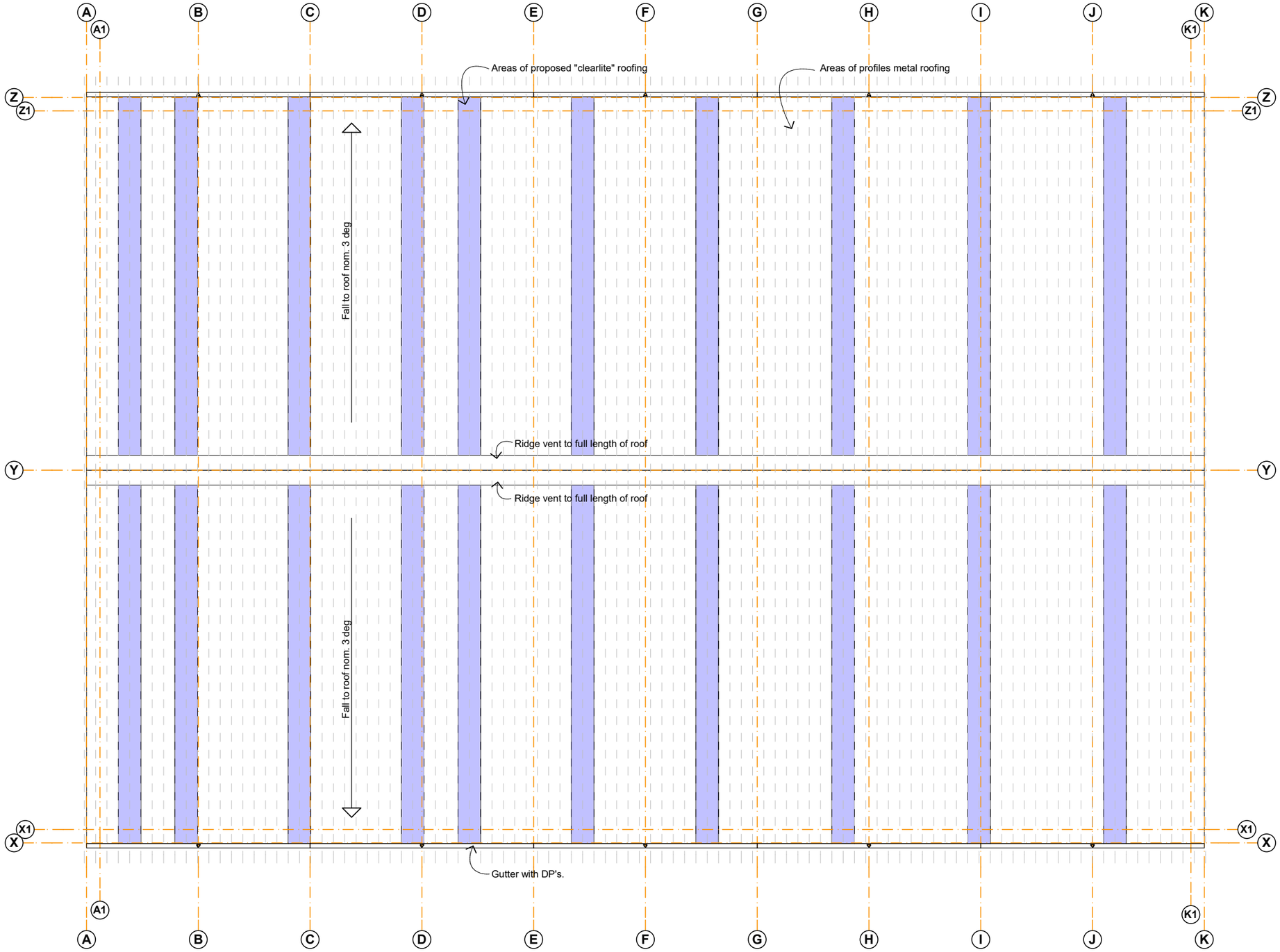
FOR LEASE AGREEMENT



Roof Plan 20%

WasteManagement
RTS Building

Rosco Ice Cream Limited

HARRIS ARCHITECTS LIMITED
po box 24 120 wellington
m 021 110 8895 e derek@harch.nz
www.harch.nz

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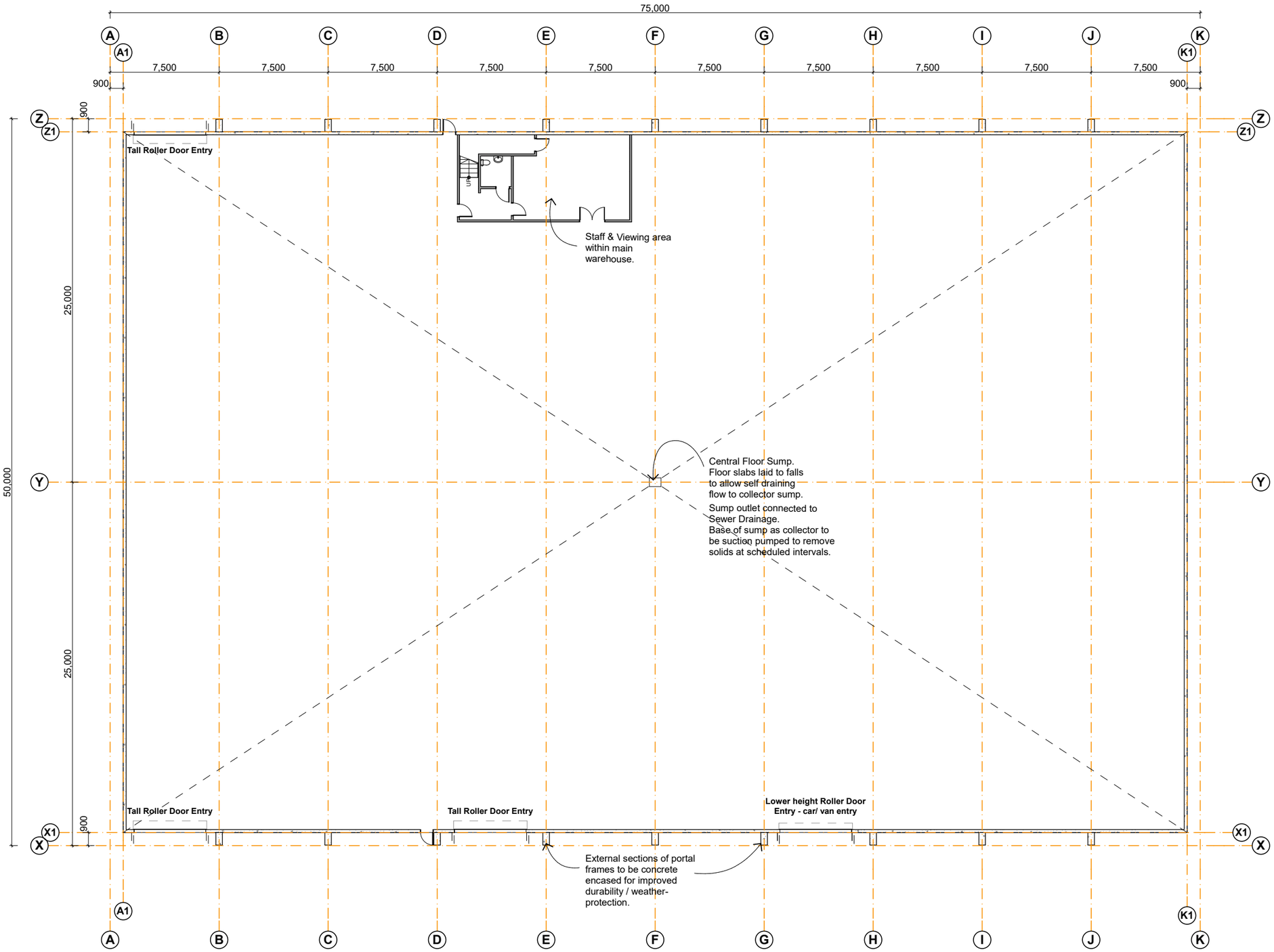
Drawn DGH
Checked
Job 2220
Sheet Number 210
Sketch Design
Printed 25 October 2022
Revision 1



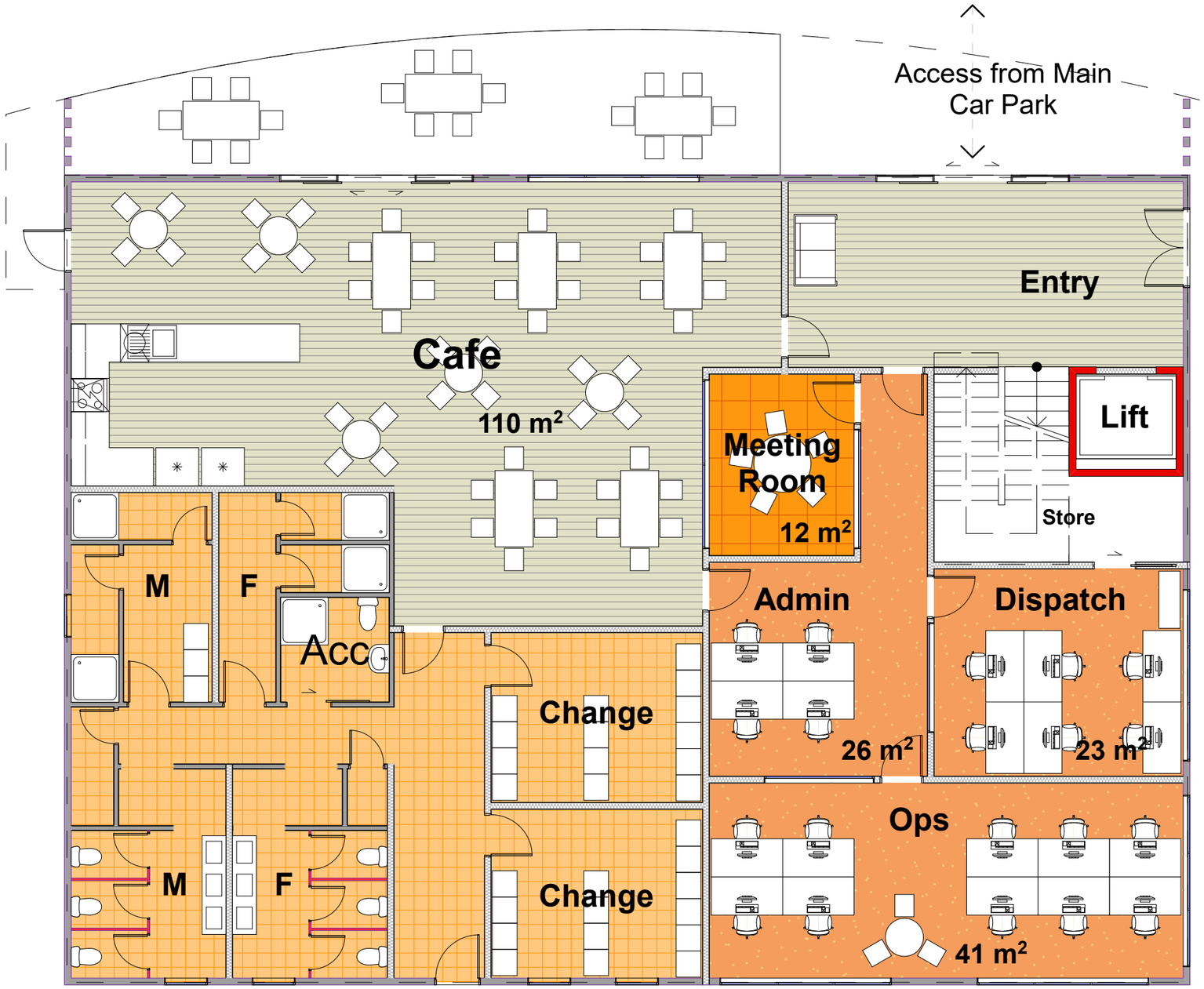
Base Plan

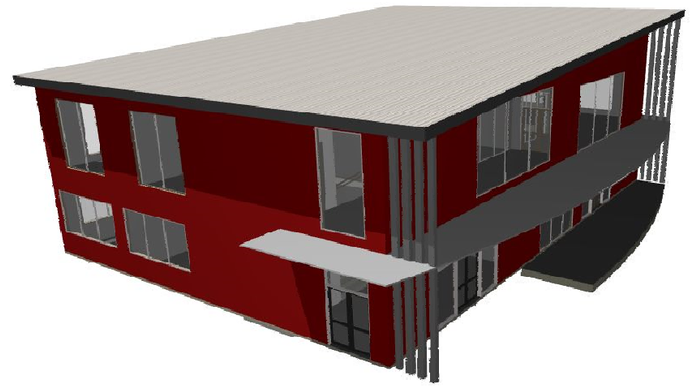
WasteManagement
RTS Building

Rosco Ice Cream Limited

HARRIS ARCHITECTS LIMITED
po box 24 120 wellington
m 021 110 8895 **e** derek@harch.nz
www.harch.nz

Original Sheet A3 | Scale 1:200
Drawn DGH | Job 2220
Checked
Sheet Number 200
Sketch Design
Printed 25 October 2022 | Revision 3





Ground Floor Plan

PROPOSED NEW OFFICES

Te Rangihaeata **Business Park**

Benmore Cres - Manor Park - Hutt City

proposal for

Rosco Industrial & Ngāti Toa Rangatira

01 December 2022 **Refer Bar Scale** 2220/ 2028

Waste Management®

ROSCO INDUSTRIAL

Ngāti Toa Rangatira

HARRIS ARCHITECTS LIMITED
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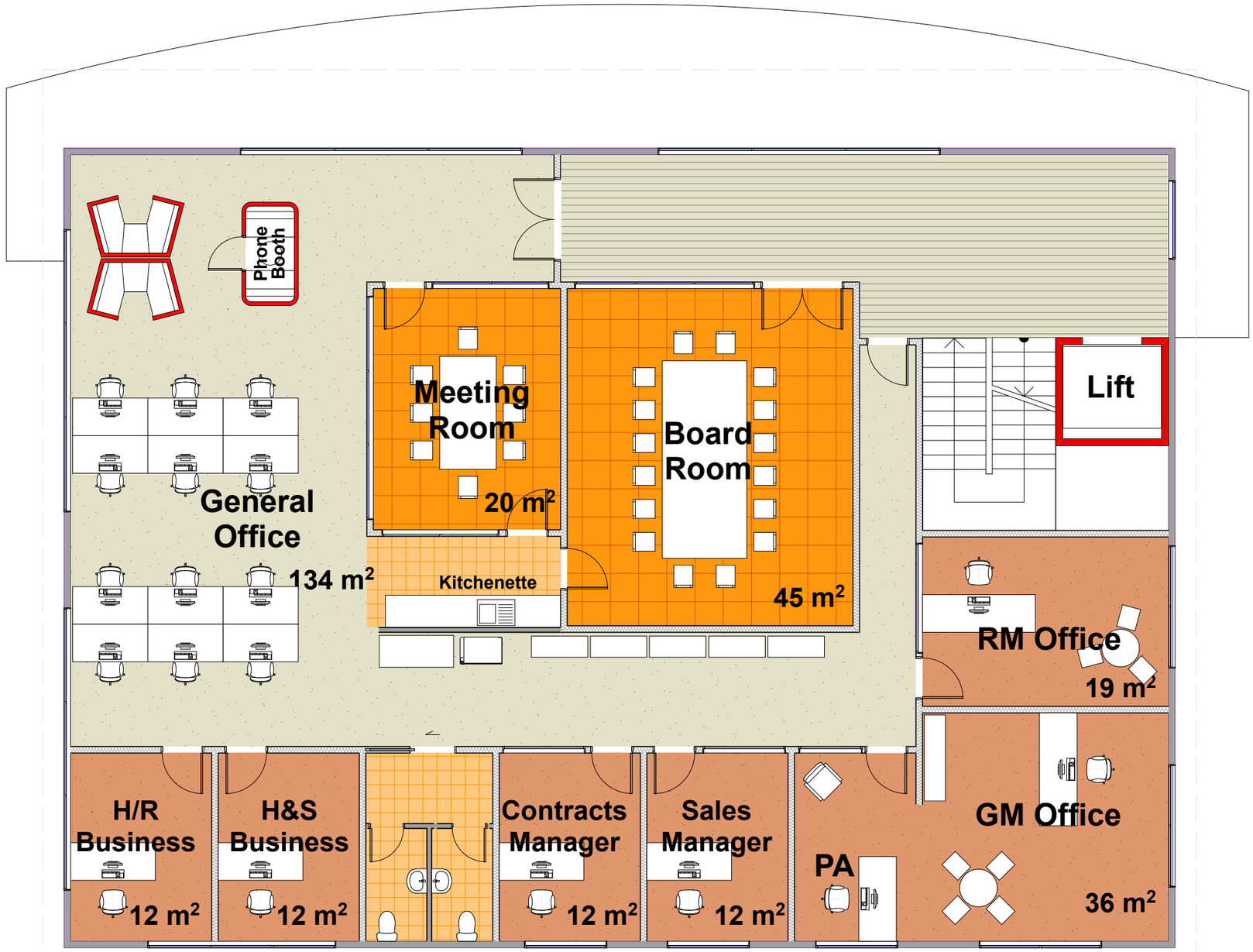

First Floor Plan

PROPOSED NEW OFFICES

Te Rangihaeata **Business Park**

Benmore Cres - Manor Park - Hutt City

proposal for

Rosco Industrial & Ngāti Toa Rangatira

01 December 2022 **Refer Bar Scale** 2220/ 2028

Waste Management®

ROSCO INDUSTRIAL

Ngāti Toa Rangatira

HARRIS ARCHITECTS LIMITED
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m 021 110 8895 e derek@harch.nz
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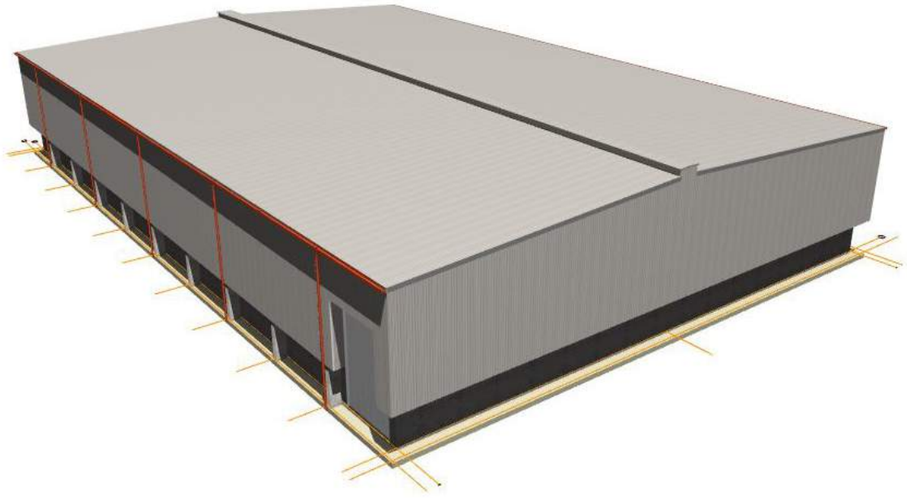
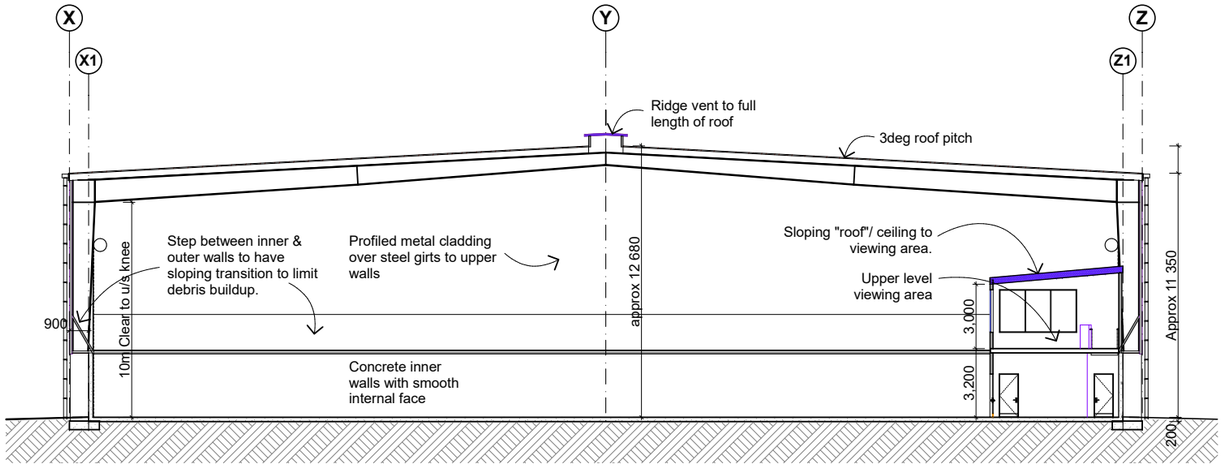
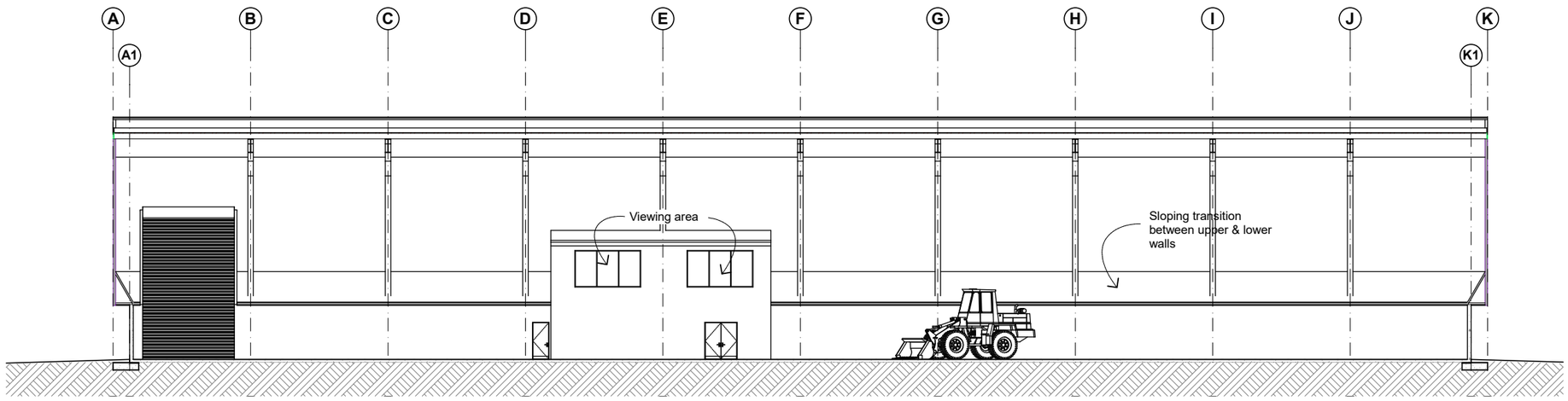




Cross Section



Long Section

Sections

WasteManagement
RTS Building

Rosco Ice Cream Limited

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po box 24 120 wellington
m 021 110 8895 e derek@harch.nz
www.harch.nz

Original Sheet A3
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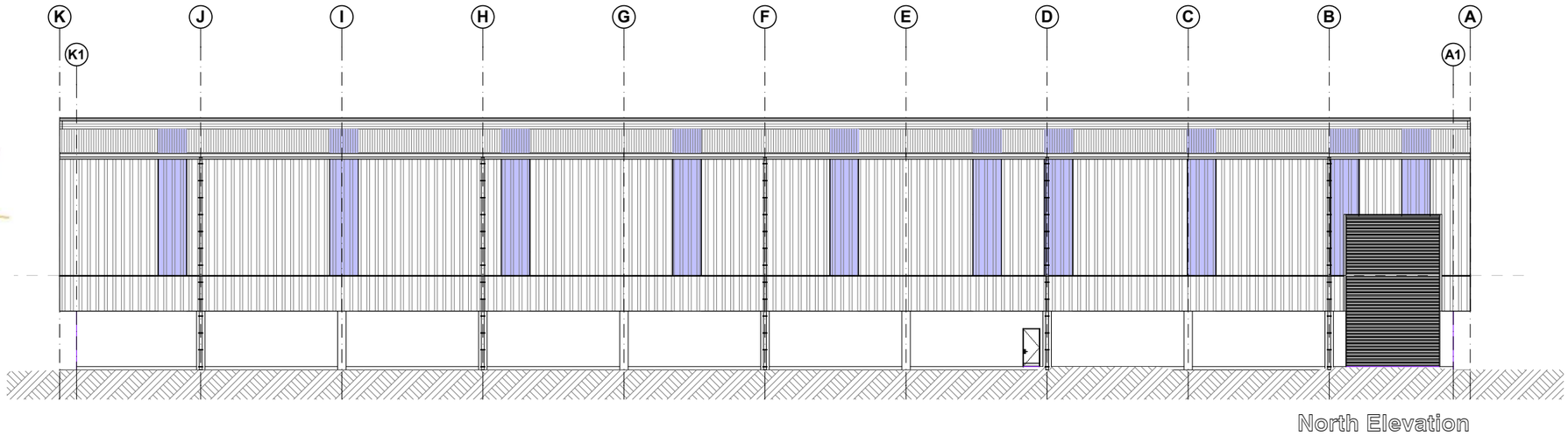
Job 2220
Sheet Number 400
Sketch Design
Printed 25 October 2022
Revision 4



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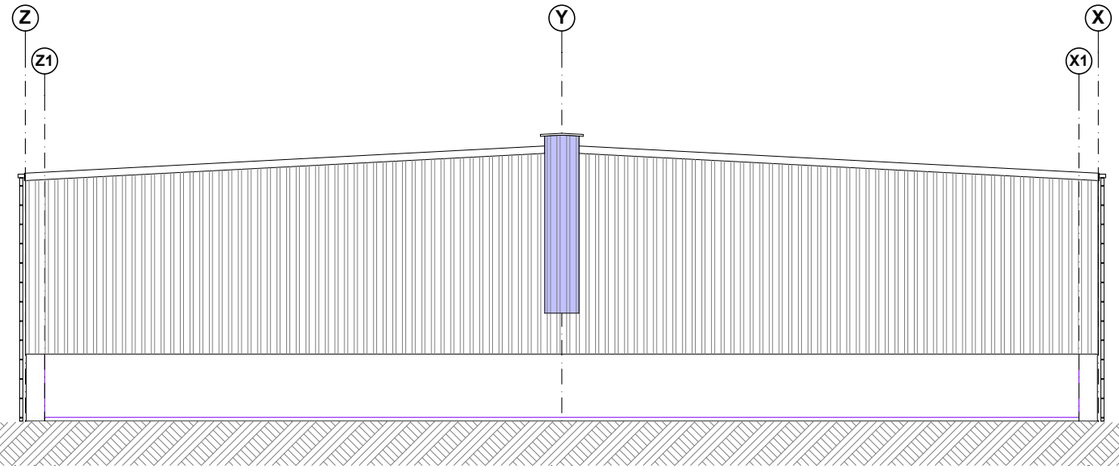

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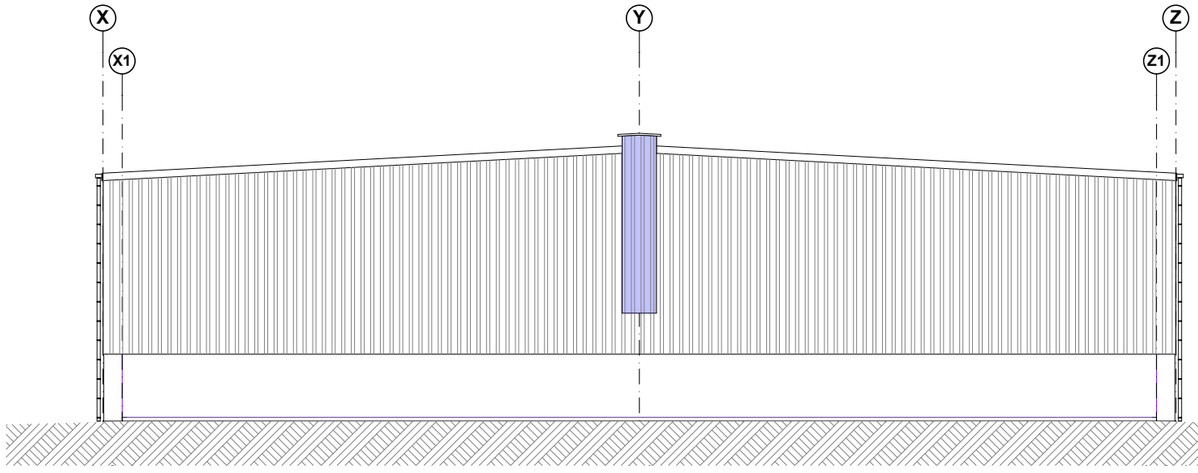

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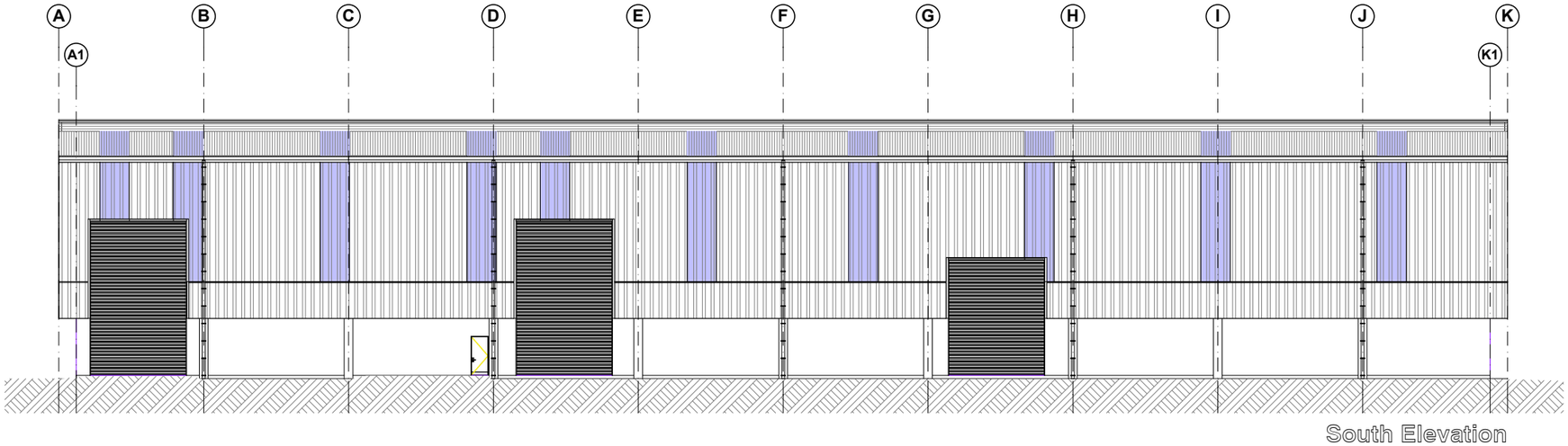

South Elevation

Elevations w Clearlites

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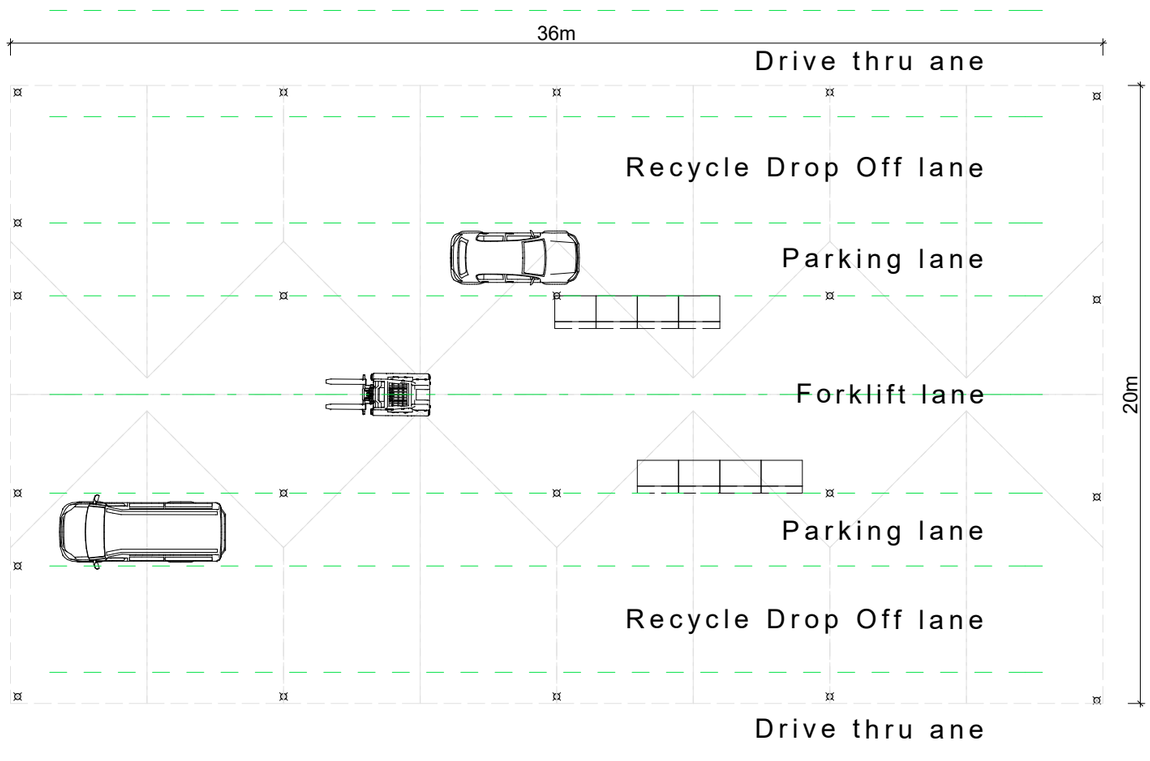

RETAIL & CANOPY

Te Rangihaeata **Business Park**

Benmore Cres - Manor Park - Hutt City

proposal for

Rosco Industrial & Ngāti Toa Rangatira

25 November 2022 **Refer Bar Scale** 2220/ 2028

Waste Management®

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Ngāti Toa Rangatira

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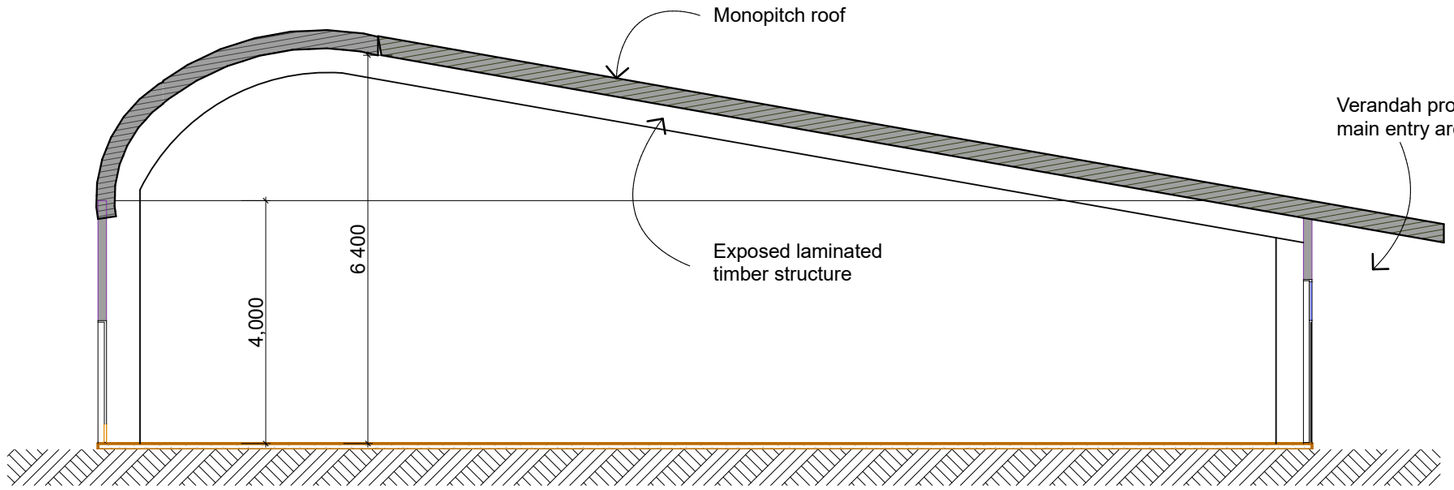

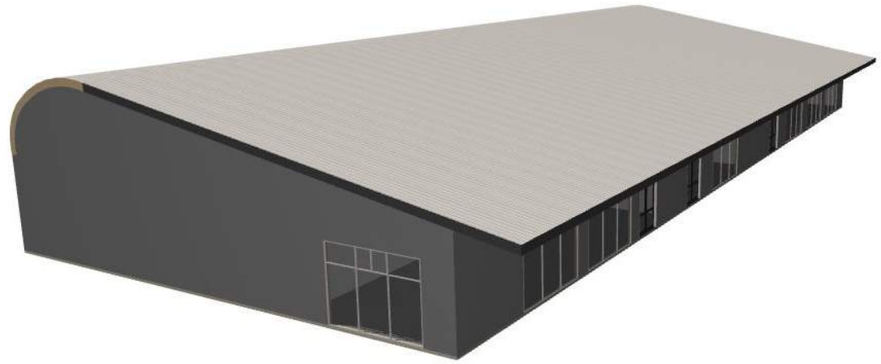

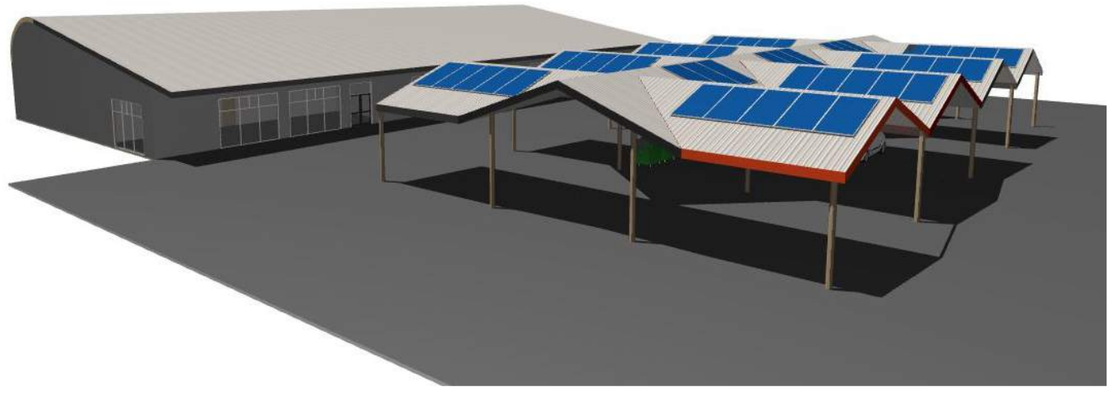

RETAIL & CANOPY

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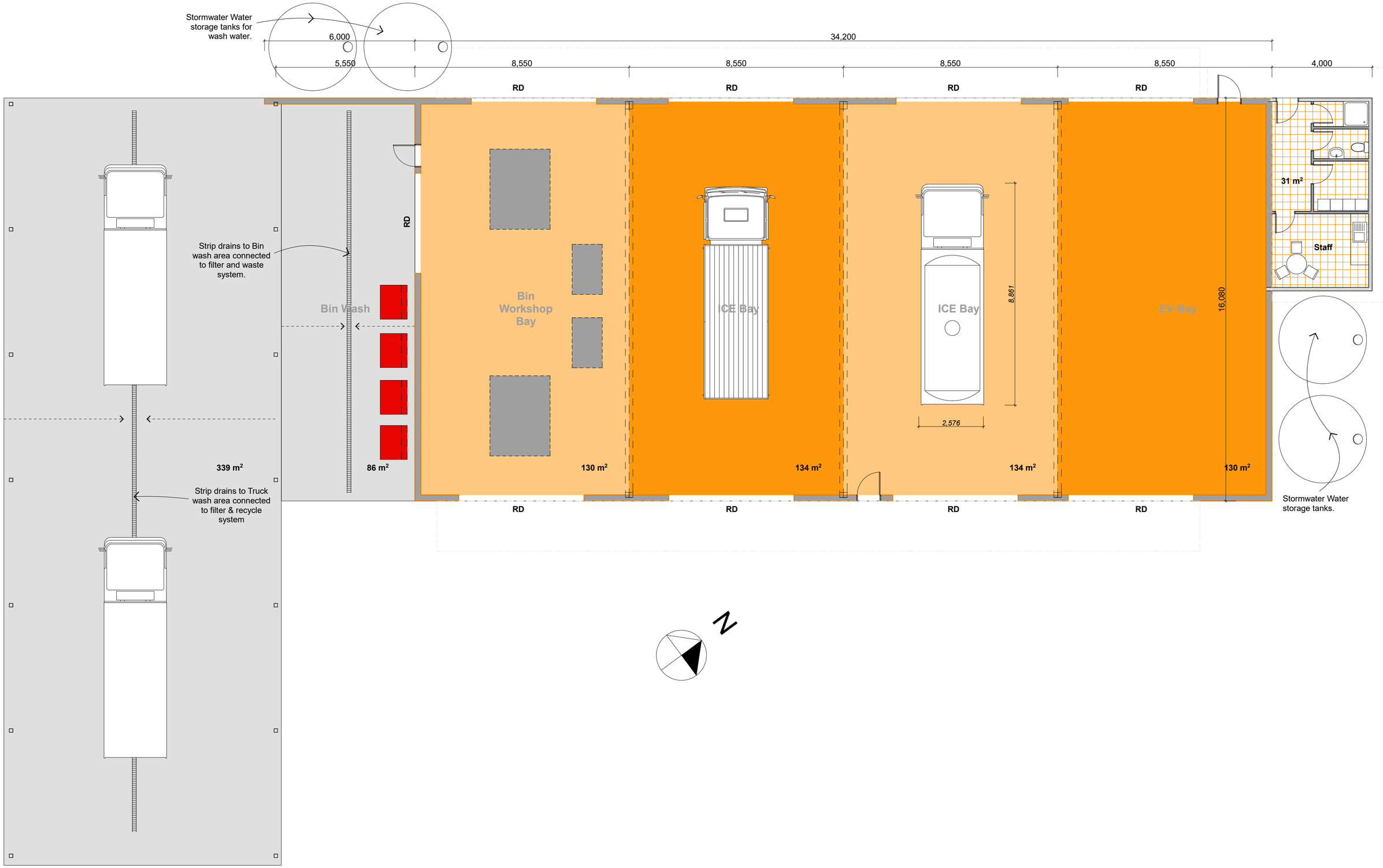

PROPOSED TRUCK WORKSHOP

Te Rangihaeata **Business Park**

Benmore Cres - Manor Park - Hutt City

proposal for

Rosco Industrial & Ngāti Toa Rangatira

30 November 2022 **Refer Bar Scale** 2220/ 2028

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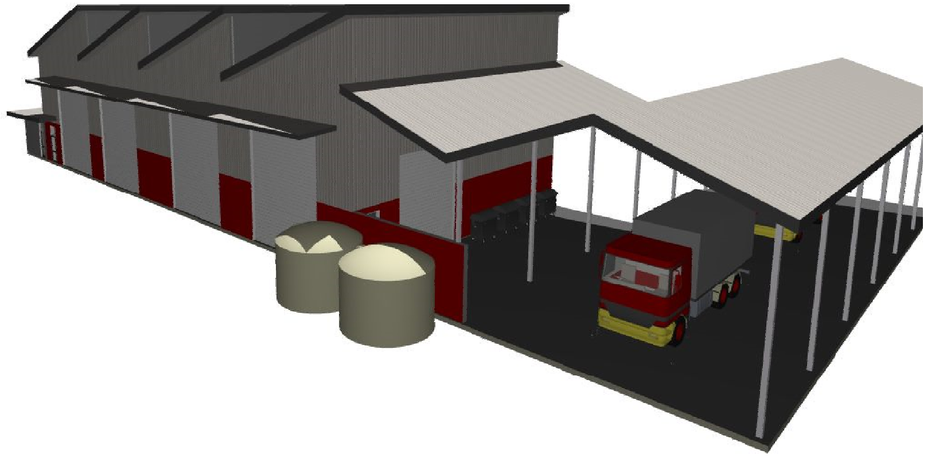

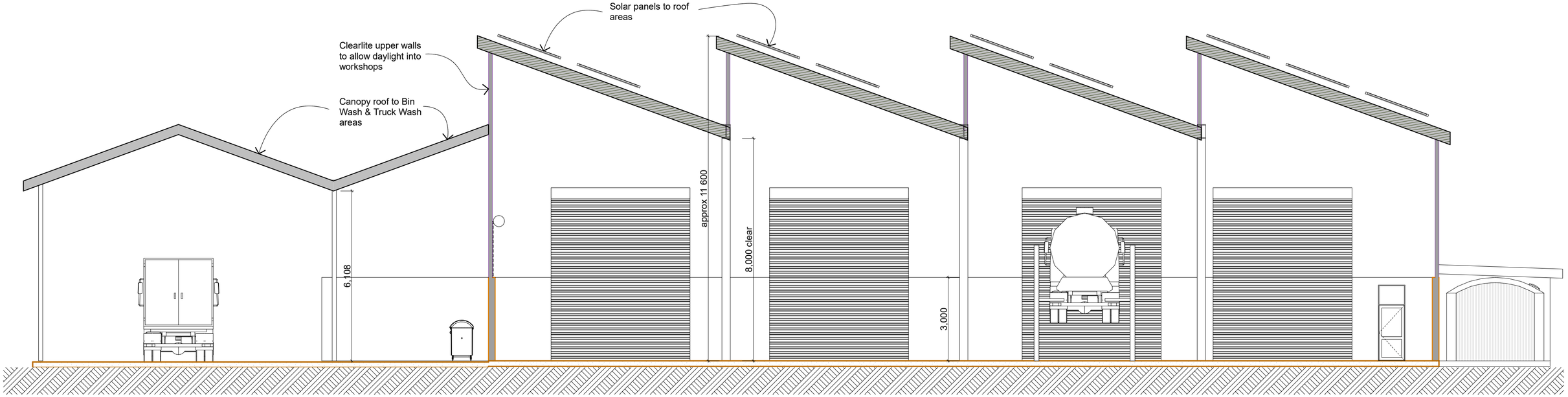

Long Section

PROPOSED TRUCK WORKSHOP

Te Rangihaeata **Business Park**

Benmore Cres - Manor Park - Hutt City

proposal for

Rosco Industrial & Ngāti Toa Rangatira

30 November 2022 **Refer Bar Scale** 2220/ 2028

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Appendix 9: Water Management Report – Spencer Holmes

S200380

24/01/2023

SpencerHolmes
engineers - surveyors - planners

PO Box 588
Level 10, 57 Willis Street
Wellington 6140, New Zealand
Phone 04 472 2261
Email admin@spencerholmes.co.nz

Benmore Crescent: Waste Management Site

Three Waters Servicing Report

General

The Waste Management (WM) site comprises a canopy area for waste sorting; a retail space; an office block; a Refuse Transfer Station; a Building & Construction waste sorting building; a Material Recycling Facility and a workshop.
The main business activity is the handling of solid waste. No liquid waste, with the exception of domestic standard waste, will be accepted or disposed of from the site.
Each building will have normal sanitary facilities which will discharge to a gravity wastewater system.
Potable water and fire supplies are enhanced by a tank farm that is trickle fed so as not to overload the Manor Park reservoir (see services report by Vecta).
WM have committed to the beneficial reuse of rainwater collected from roofs to minimise water demand and stormwater discharges.
A gravity stormwater network services the site, discharging to Dry Creek. First flush stormwater treatment is achieved by using a specialist high performance gross pollutant trap from Stormwater360.

Wastewater

Wastewater servicing is proposed for the Waste Management (WM) site by a 225mm diameter gravity uPVC SN16 pipeline. We propose to connect to the existing 850mm Hutt City Council trunkmain at manhole HCC_WW001616 and extend the gravity service to the WM site. The pipeline will extend over Dry Creek by means of a bespoke gravity pipeline bridge crossing. The invert of the pipeline is designed to be above the predicted Q100 flood level with freeboard allowed.

The pipeline extends generally eastwards and northwards with side branches to pick up all of the WM buildings. A 225mm branch main extends northwards for future development on an adjacent site to the north.

The minimum nominal gradient for the pipeline is 1 in 145 which meets the Wellington Water minimum grade for 225mm wastewater pipelines.

Truck and Bin Washing

Automatic truck washing facilities are proposed as well as a waste bin washing area. Wastewater will be recycled and reused as much as possible in the truck and bin wash areas to minimise water use and wastewater volume. Water that cannot be reused will either be stored for disposal at a

liquid waste treatment facility or controlled by a trade waste consent and discharged back into the gravity wastewater network. To be confirmed at detailed design.

Stormwater Gravity network

The site has been designed so that the contours generally fall towards a low spot near Dry Creek located to the southwest within the WM site.

It is proposed to control stormwater from the site via a gravity piped network. Pipe sizes range from 750mm RCRRJ to 450mm RCRRJ. The gravity pipeline extends eastwards and northwards with side branches to service each building. The stormwater discharge is controlled into Dry Creek by a wingwall and rip rap protection with the point of discharge downstream of the bespoke wastewater gravity pipeline bridge crossing. Stormwater intakes and sumps are positioned around the WM site to collect surface stormwater. The nominal minimum level of service for the gravity network is a 10% AEP storm. Events larger than a Q10 will flow towards the low spot and discharge into Dry Creek.

Beneficial Rainwater Reuse

To minimise potable water use, each building will have a rainwater collection system for beneficial reuse and water conservation. Roof downpipes will be directed to surface water tanks and pump boosted to each building for toilet flushing and outdoor tap use only. Advice has been obtained from Pump & Valve in the design of the pump boosted system and the reused water will have its own internal plumbing reticulation network, completely separate to the potable network for public health security. Each downpipe to have Leaf Guards and first flush diverters to assist with water quality. A top up valve (Rojo Partfill valve) connected to the potable network will boost supply to the rainwater collection tanks if they should run low.

A more substantial rainwater tank farm is proposed for the high use truck and bin wash areas. Rainwater collected from the workshop and covered wash areas will be pump boosted to supply the truck wash and water blasters in the bin wash area.

Stormwater Treatment

Specialist advice has been obtained from Stormwater 360 for the design and specification of a stormwater treatment device for the gravity discharge into Dry Creek. A specialist high performance gross pollutant trap Vortechs VX9000 unit (or similar) is proposed. It is designed to cope with first flush treatment at 10mm/hr across the site as per the Wellington Sensitive Design for Stormwater: Treatment Device Design Guideline.

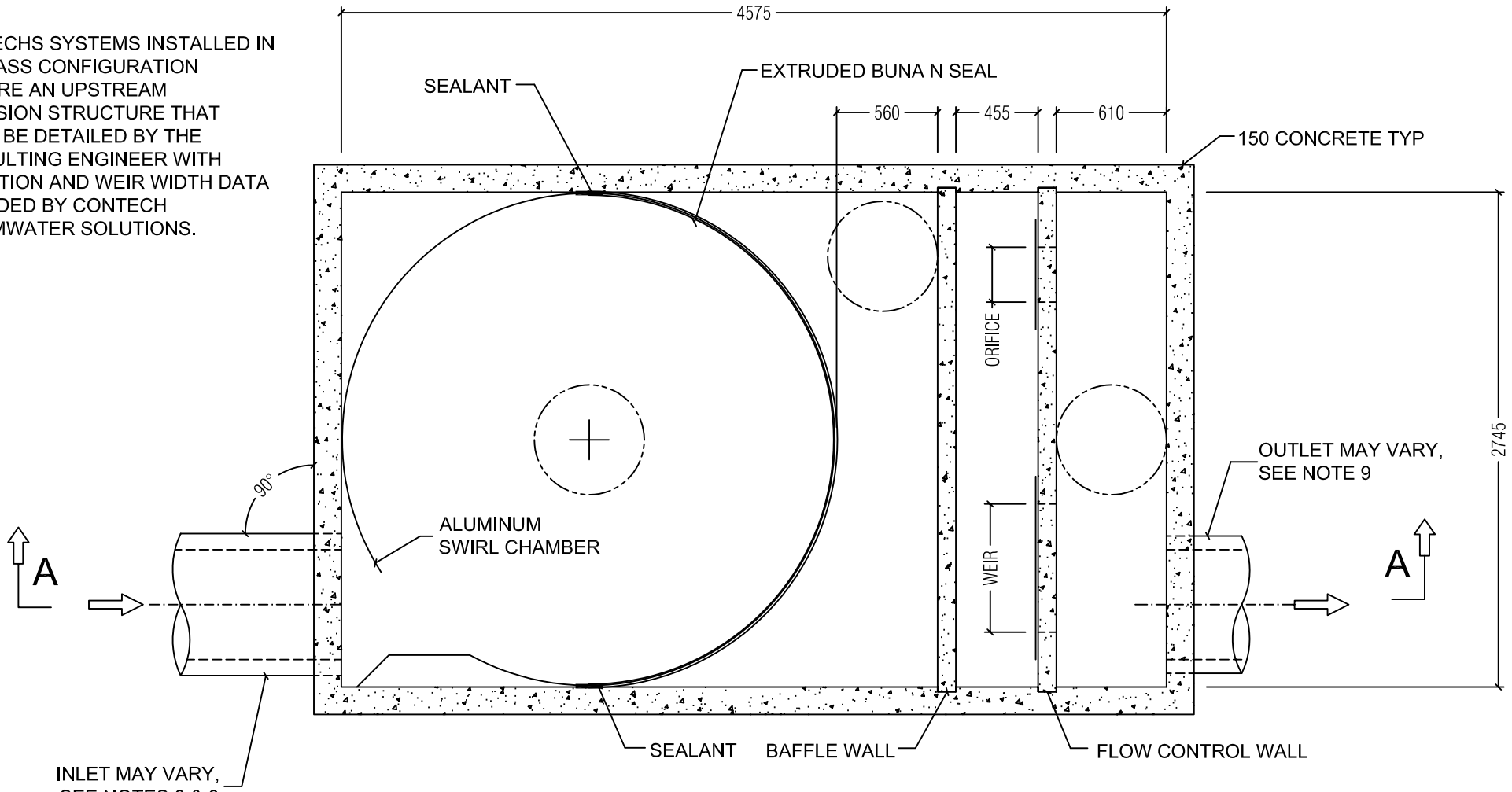
Potable Water and Fire Supply

A substantial tank farm is proposed for the WM site to balance water demand across the site. It will be trickle fed so as not to overload the Manor Park Reservoir. Specialist advice has been obtained from Deeco in the design of the trickle feed system so that peak flows into the tank farm do not exceed 114 l/minute. A pumping station, designed by Pump & Valve, is proposed to provide sufficient pressure to meet potable and fire supply demands. All the main buildings will be sprinklered so that the fire supply classification of FW2 is met. Hydrants have been placed to meet minimum spacing requirements.

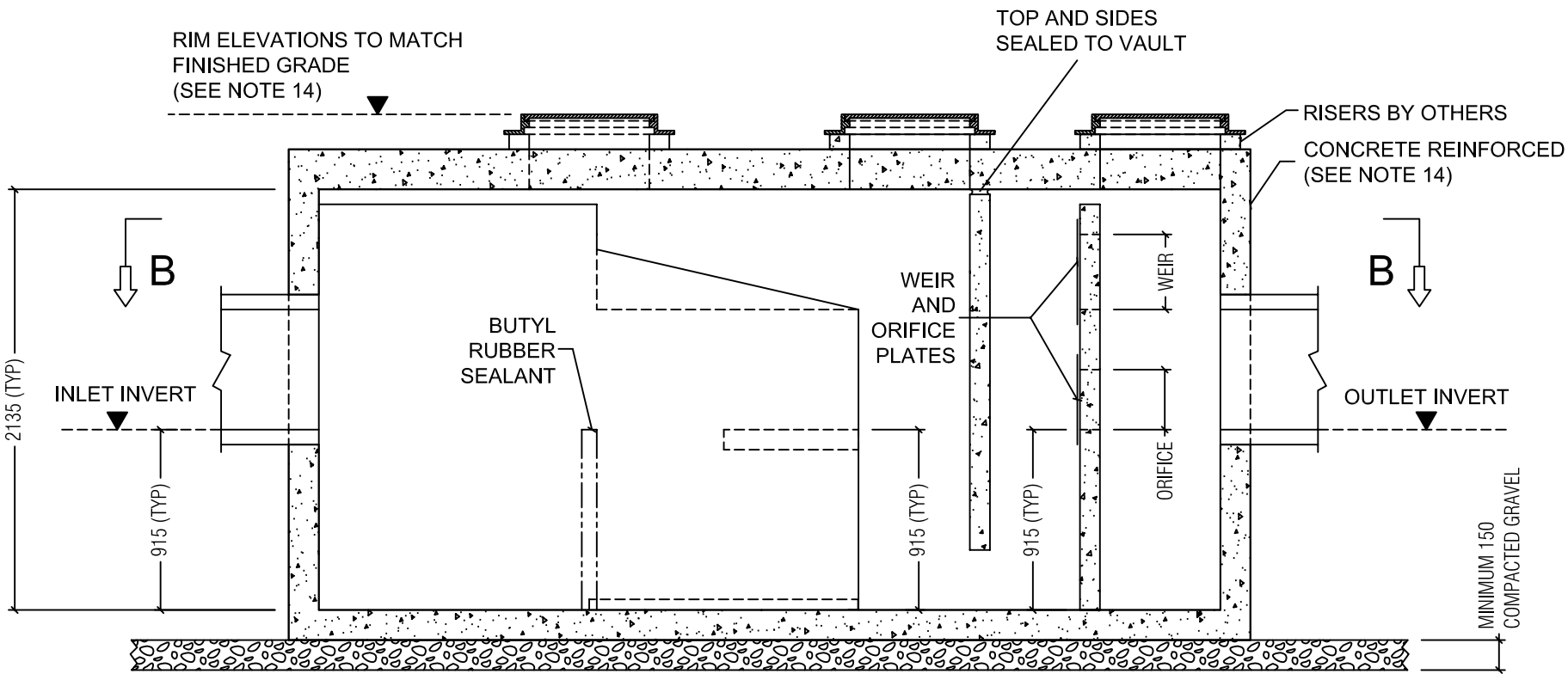
Water supply servicing across the site is provided by a 200mm PE100 SDR11 water main. Separate potable water and fire sprinkler connections have been allowed for each building.

John Eyles
Civil Engineer
Spencer Holmes Limited

NOTE:
VORTECHS SYSTEMS INSTALLED IN A BYPASS CONFIGURATION REQUIRE AN UPSTREAM DIVERSION STRUCTURE THAT SHALL BE DETAILED BY THE CONSULTING ENGINEER WITH ELEVATION AND WEIR WIDTH DATA PROVIDED BY CONTECH STORMWATER SOLUTIONS.



PLAN VIEW B - B



SECTION A - A

NOTES:
1. STORMWATER TREATMENT SYSTEM (SWTS) SHALL HAVE:
   PEAK TREATMENT CAPACITY: 396L/S
   SEDIMENT STORAGE: 3.67M3
   SEDIMENT CHAMBER DIA: 2743MM
2. SWTS SHALL BE CONTAINED IN ONE RECTANGULAR STRUCTURE
3. SWTS REMOVAL EFFICIENCY SHALL BE DOCUMENTED BASED ON PARTICLE SIZE
4. SWTS SHALL RETAIN FLOATABLES AND TRAPPED SEDIMENT UP TO AND INCLUDING PEAK TREATMENT CAPACITY
5. SWTS INVERTS IN AND OUT ARE TYPICALLY AT THE SAME ELEVATION
6. SWTS SHALL NOT BE COMPROMISED BY EFFECTS OF DOWNSTREAM TAILWATER
7. SWTS SHALL HAVE NO INTERNAL COMPONENTS THAT OBSTRUCT MAINTENANCE ACCESS
8. INLET PIPE MUST BE PERPENDICULAR TO THE STRUCTURE
9. PIPE ORIENTATION MAY VARY; SEE SITE PLAN FOR SIZE AND LOCATION
10. PURCHASER SHALL NOT BE RESPONSIBLE FOR ASSEMBLY OF UNIT
11. MANHOLE FRAMES AND PERFORATED COVERS SUPPLIED WITH SYSTEM, NOT INSTALLED
12. PURCHASER TO PREPARE EXCAVATION AND PROVIDE CRANE FOR OFF-LOADING AND SETTING AT TIME OF DELIVERY
13. VORTECHS SYSTEMS BY STORMWATER360:
    AUCKLAND (09) 476 5586 BRISBANE (07) 3272 1872 SYDNEY (02) 9525 5833
14. VORTECHS SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH RELEVANT AUSTRALIAN ANS NEW ZEALAND STANDARDS FOR 0-2m FILL AND T44 (HNHO-72) LIVE LOADINGS ONLY. FOR OTHER LOADING CONDITIONS PLEASE CONTACT STORMWATER360.

www.stormwater360.com.au www.stormwater360.co.nz

Stormwater360

STORMWATER360

STORMWATER TREATMENT SYSTEM
VORTECHS MODEL 9000 METRIC
STANDARD DETAIL

DRAWING 1 A

DATE: 18.11.07	SCALE: N.T.S.	FILE NAME: STD9KM	DRN: R.P.	CHK: M.W.

BENMORE CRESCENT, MANOR PARK

THREE WATERS SERVICING REPORT

Project Number: 210026

PROVIDED FOR

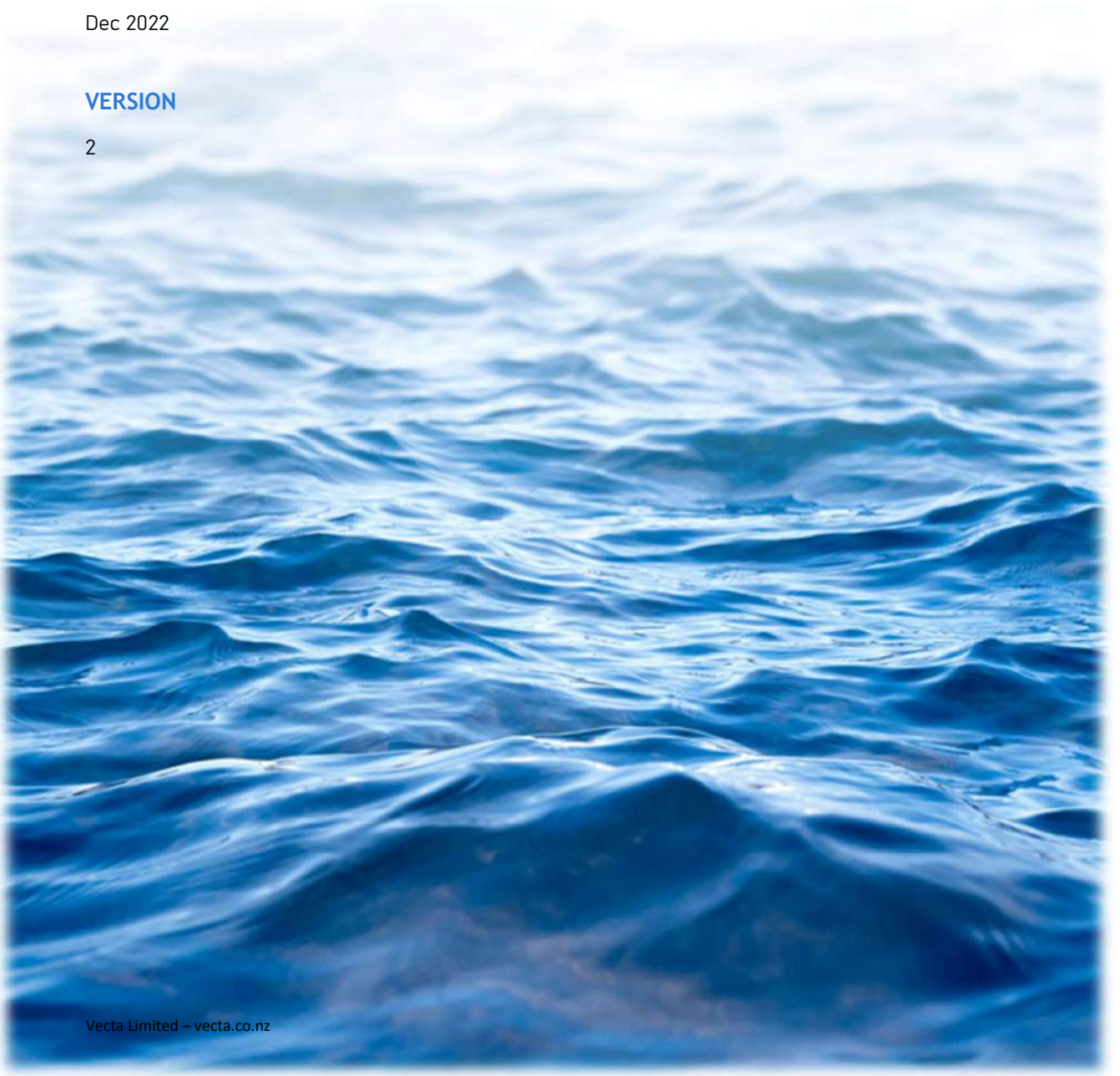
Rosco Industrial Limited

DATED

Dec 2022

VERSION

2



DOCUMENT CONTROL

Project Number: 210026

Version	Date	Purpose	Author	Reviewer
1	28 Nov 2022	For consent application	RJ	TN
2	22 Dec 2022	With amendments	RJ	TN

Version	General Extent of Revision
2	Incorporating amendments proposed by client

This Report caters specifically for the requirements for this project and this client. No warranty is intended or implied for use by any third party and no responsibility is undertaken to any third party for any of the content of this Report. This report is produced and signed solely on behalf of Vecta Ltd and no liability whatsoever accrues to the authors.

Consideration of protection of the building owner's property, beyond what is achieved by compliance with the minimum requirements of the relevant legislation, is not included within this Report unless this has been specifically requested.

Written By

Rob Jack

ME (civil) CPEng IntPE(NZ)

Reviewed By

Trishn Nand

ME., CPEng., IntPE(NZ).

TABLE OF CONTENTS

1 Introduction

1.1 Objective

The objective of this report is to outline how the proposed development at 30 Benmore Crescent, Manor Park, Lower Hutt, will be suitably serviced for water supply, wastewater, and stormwater. The intention is for the site to cater to primarily rural ancillary land uses and for some commercial land uses. The location of the site is shown in Figure 1.

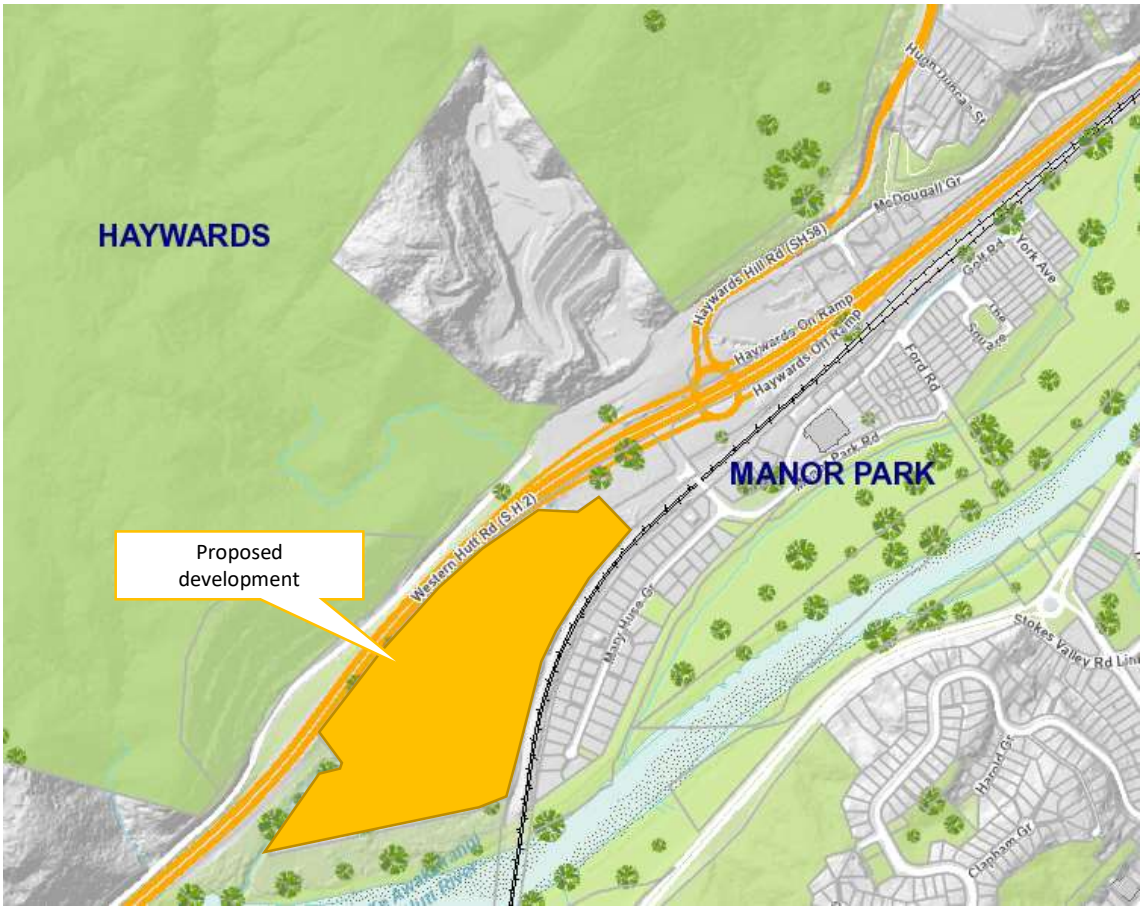


Figure 1 - Location of proposed development.

1.2 Scope

The scope of this report covers:

1. Water supply: determining if suitable pressure and flow is achievable to the site for both potable, and firefighting purposes. This includes concept level engineering.
2. Wastewater: confirming the potential yield and possible connection points for disposal. Concept level engineering.
3. Stormwater: confirming potential increases in stormwater and any potential mitigation to achieve the water quality and quantity objectives.

Viability of the above services will be measured against the performance requirements outlined in Wellington Water Limited's Regional Standards for Water Services Dec 2021 (RSWS), section 11.2.2.1 of the operative Hutt City Council District Plan (HCCDP) and the Greater Wellington Regional Council (GWRC) proposed Natural Resources Plan.

The concepts presented here will be detailed further during detailed design for the development and land use resource consent stage of the project and associated engineering approval. The concepts may evolve during these later stages as more information comes available, but the achieved performance should remain the same or improve.

1.3 Assumptions and Limitations

The report has the following assumptions and limitations:

1. Viability of the services relies on information that is available and was received at the time of writing.
2. Water supply pressure monitoring was over a short period of time and may not represent network performance if there were valves closed or on-going maintenance works at the time of recording.
3. The projected yields and demands of the site are based on the RSWS/District Plan requirements. Actual yields and demands once developed may be higher or lower depending on future commercial activity adopted.

2 Water Supply

The existing water supply network is shown in Figure 2.

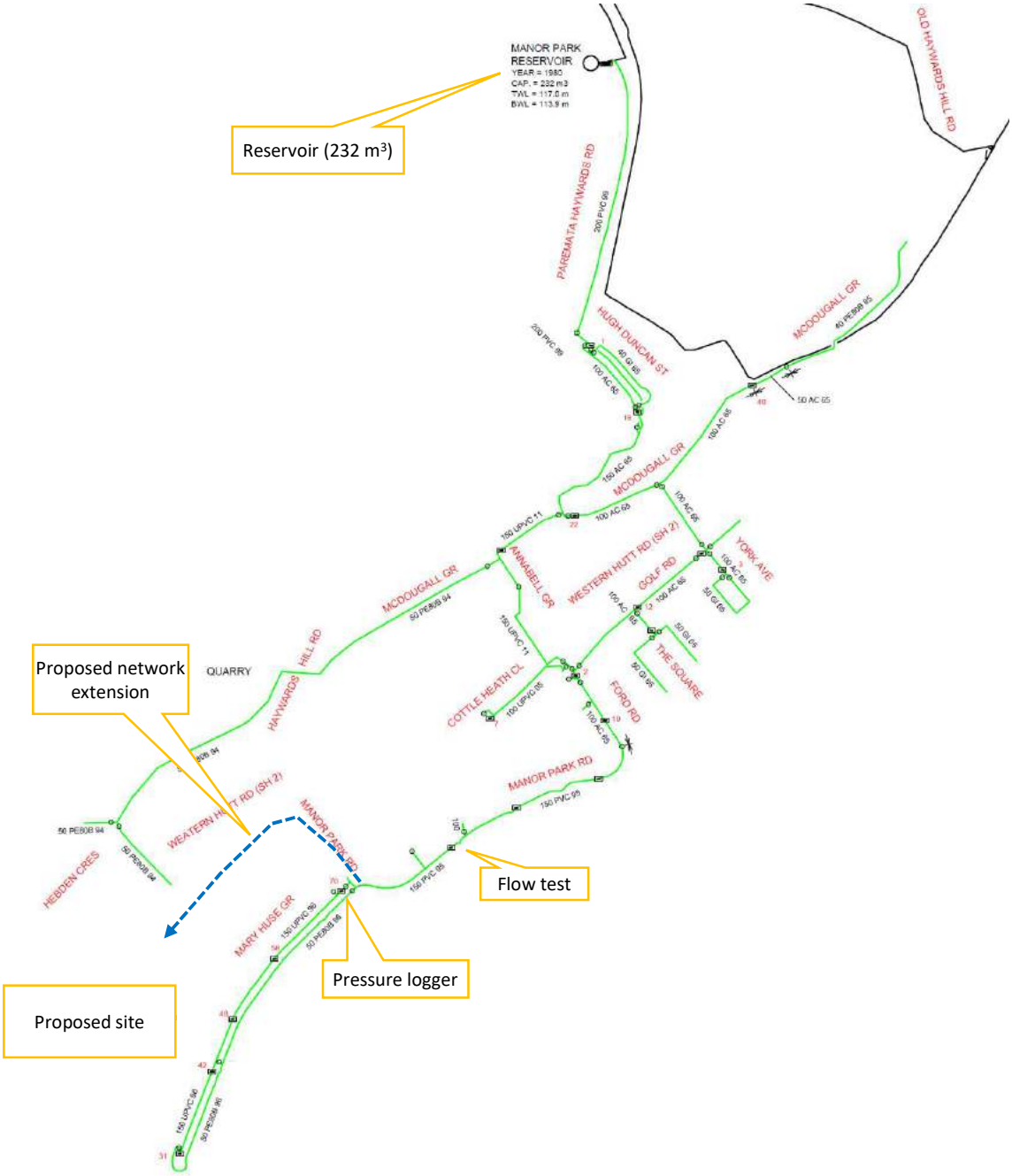


Figure 2 - Water supply network for Manor Park (from WWL)

2.1 Performance requirements

The RSWS requires the development to achieve:

- Minimum peak period pressures of 25 m (RSWS) or 30 m (HCCDP)
- Maximum pressure of 90 m (RSWS and HCCDP)

- Firefighting flow and pressure compliance with SNZ PAS 4509 *Code of practice for firefighting water supplies. (RSWS and HCCDP)*
- Reservoir storage must meet requirements of the Regional Standards for Water Services.

In addition to this, the development shall have a less than minor impact on the existing storage, and pressures within the existing network.

2.1.1 Consultation

Wellington Water Limited were contacted for pre-development advice on the development. Their response is shown in Appendix A.

The main concerns with respect to the water supply is:

a) Flow testing to confirm flows and pressures are compliant
b) The existing Manor Pak reservoir is currently undersized by a significant volume, and the proposed development will exacerbate this.

2.2 Field Test

A pressure logger was deployed for 7 days and a flow test carried out to determine the performance characteristics of the existing network. The location of the logger and flow test is shown in Figure 2, and the results are shown in Appendix B and illustrated below in Figure 3.

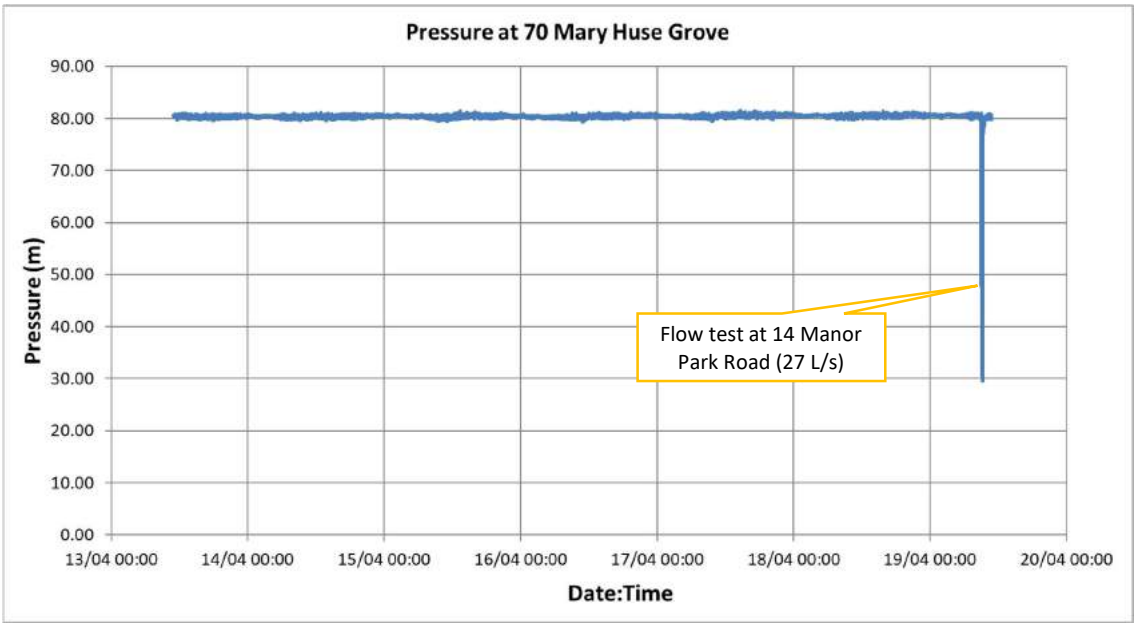


Figure 3 - Pressure trace from logging at 70 Mary Huse Grove

The flow test will allow an extrapolation of the network performance to include the additional demand and firefighting flows. The logger elevation was approximately 30 m above MSL.

The losses are higher than expected and may represent some maintenance issues within the network such as a closed, or partially closed valve. However, this would be considered conservative so we have continued with the results as presented.

The analysis suggests the existing representative peak demand from the zone is approximately 5.8 L/s.

2.3 Design parameters

2.3.1 Peak demand

The proposed site is approximately 10.04 hectares. As the development will not be for residential use, non-residential activity has been assumed for future uses as would seem appropriate for the current zoning. The RSWS states in 6.3.1.1:

> (d) Where an area has predominantly industrial demand, and the demand is unknown, the designer may use the ADWF calculated in **Section 5.3.1.4 High density / industrial / commercial design flows** multiplied by a factor of 8, as the design demand for the water supply analysis.

And 5.3.1.4 states:

> (c) Where specific activities are *not* known, the following factors from **Table 5-2** may be used:

Table 5-2 – Industrial and commercial design flows

Council		ADWF (L/ha/s)	PDWF (L/ha/s)	PWWF (L/ha/s)
HCC	Industrial/commercial	0.52	1.56	1.56

As the final and future uses for the site are unknown, the peak flow can be calculated as:

Peak demand = Area x 0.52 x 8 L/s

Peak demand = 10.04 x 0.52 x 8 L/s

Peak demand = 42 L/s

The affinity analysis (Section 2.2) suggests the existing network is unable to deliver this peak flow, so it is proposed that a trickle feed system is accommodated until such time as upgrades are enacted. The trickle feed will also reduce peak demands on the reservoir storage, therefore buffering demand.

2.3.2 Reservoir storage

Table 6.2 from the RSWS is shown Figure 4. The proposed development is a non-residential development with unknown future activities and no residential population. As such, Method 2 would be the most appropriate using the ADWF calculated in 2.3.1.

The ADWF is 10.04 ha x 0.52 L/s/ha x 86400 seconds x 2 days = 902 m^3.

The existing reservoir is only 232 m^3 so additional storage will be required at the reservoir to accommodate the additional volume.

Table 6-2 – Mandated levels of service for storage volumes

Method	Storage (L/person)	Scenario
1	700	Where actual consumption is not known such as new developments
2	2 x Average Day Demand	Used when demand statistics are available from Wellington Water. The designer to target the greater of the volume determined by each method. Consult with Wellington Water to determine critical users and their consumption.
3	Maximum Day Demand + 20% + SNZ PAS 4509 firefighting requirements	
4	(20 L/person/day for 23 days + critical users allowance) x 1.43	

Figure 4 - Reservoir storage calculations from RSWS

2.3.3 Firefighting flow

Any future structures can require significant volumes of firefighting water to meet the firefighting water supplies code of practice. The minimum level of firefighting is FW2 (25 L/s) with sprinklers or additional private storage for any activities or structures that exceed the limitations on FW2. The affinity analysis in section 2.2 suggests the existing network cannot supply more than FW2 so a higher level is not proposed at this stage.

Table 2 – Method for determining firefighting water supply

	Reticulated water supply			Non-reticulated water supply	
Fire water classification	Required water flow within a distance of 135 m	Additional water flow within a distance of 270 m	Maximum number of fire hydrants to provide flow	Minimum water storage within a distance of 90 m (see Note 8)	
				Time (firefighting) (min)	Volume (m^3)
FW1	450 L/min (7.5 L/s) (See Note 3)	–	1	15	7
FW2	750 L/min (12.5 L/s)	750 L/min (12.5 L/s)	2	30	45
FW3	1500 L/min (25 L/s)	1500 L/min (25 L/s)	3	60	180

Figure 5 - From SNZ PAS4509

2.4 Concept design

There are several network restrictions that have guided the water supply concept. This is the small size of the existing reservoir and the limited capacity of the existing network. Due to the restrictions, an interim solution is proposed, and this is shown in Figure 6.

The interim solution was discussed with Hutt City Council and Wellington Water Limited representatives. The advantages and disadvantages of the interim solution were considered, and the proposal accepted as a short-term solution until the reservoir is constructed. This approval is documented in Appendix D.

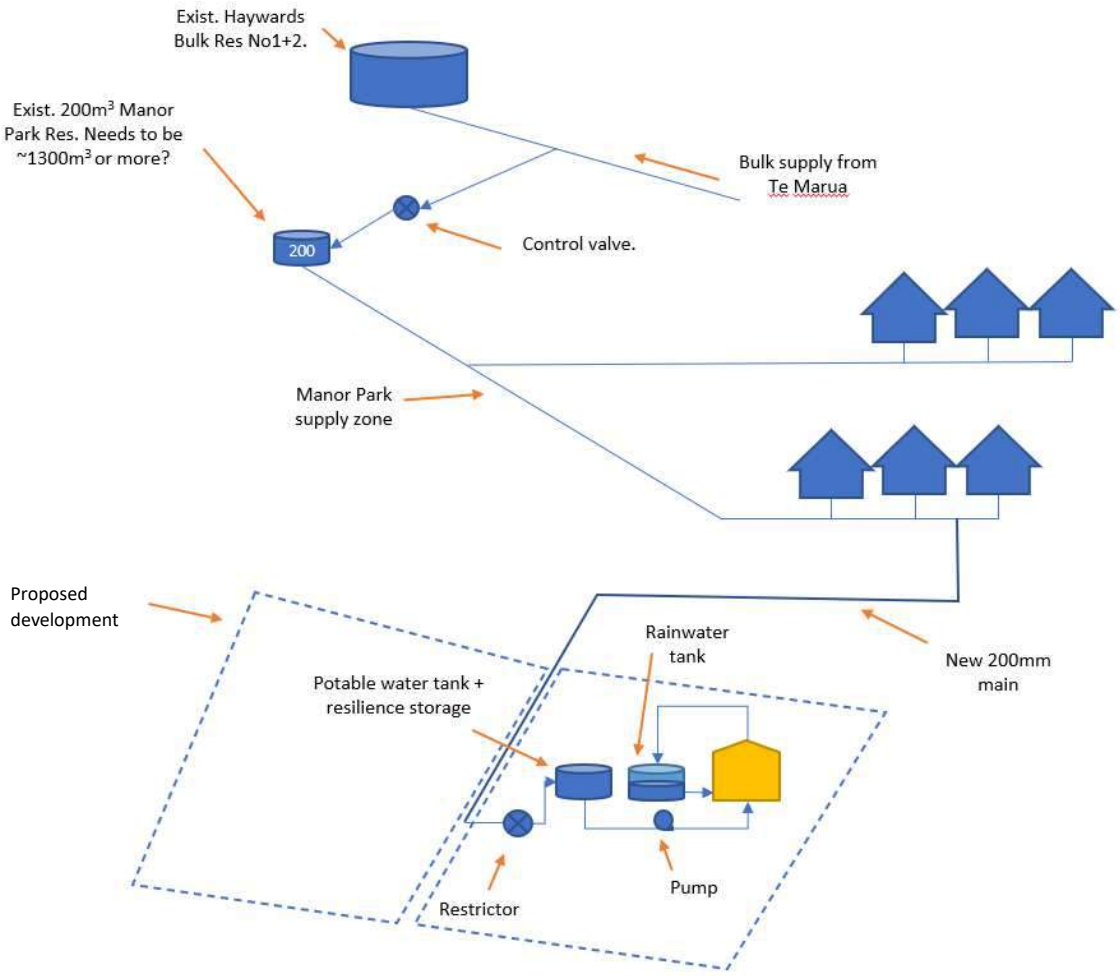


Figure 6 - Proposed INTERIM solution for water supply to the development

The interim solution has:

- Interim restrictors on each connection to reduce peak demand
- Potable storage tanks and pumps (48 hours average demand) to augment reservoir storage

These measures would be removed when the existing reservoir is upgraded and the network is gradually improved.

The reservoir upgrade would be part funded by a Developer Contribution to pay for the developers 903 m^3 component of the upgrade. Any volume over the existing 232 m^3 plus 903 m^3 volume would be funded by Hutt City Council through a separate mechanism. HCC/WWL are currently suggesting a combined volume of 1300 m^3 may be required for the new reservoir, but this will need to be confirmed.

The ultimate solution is shown in Figure 7.

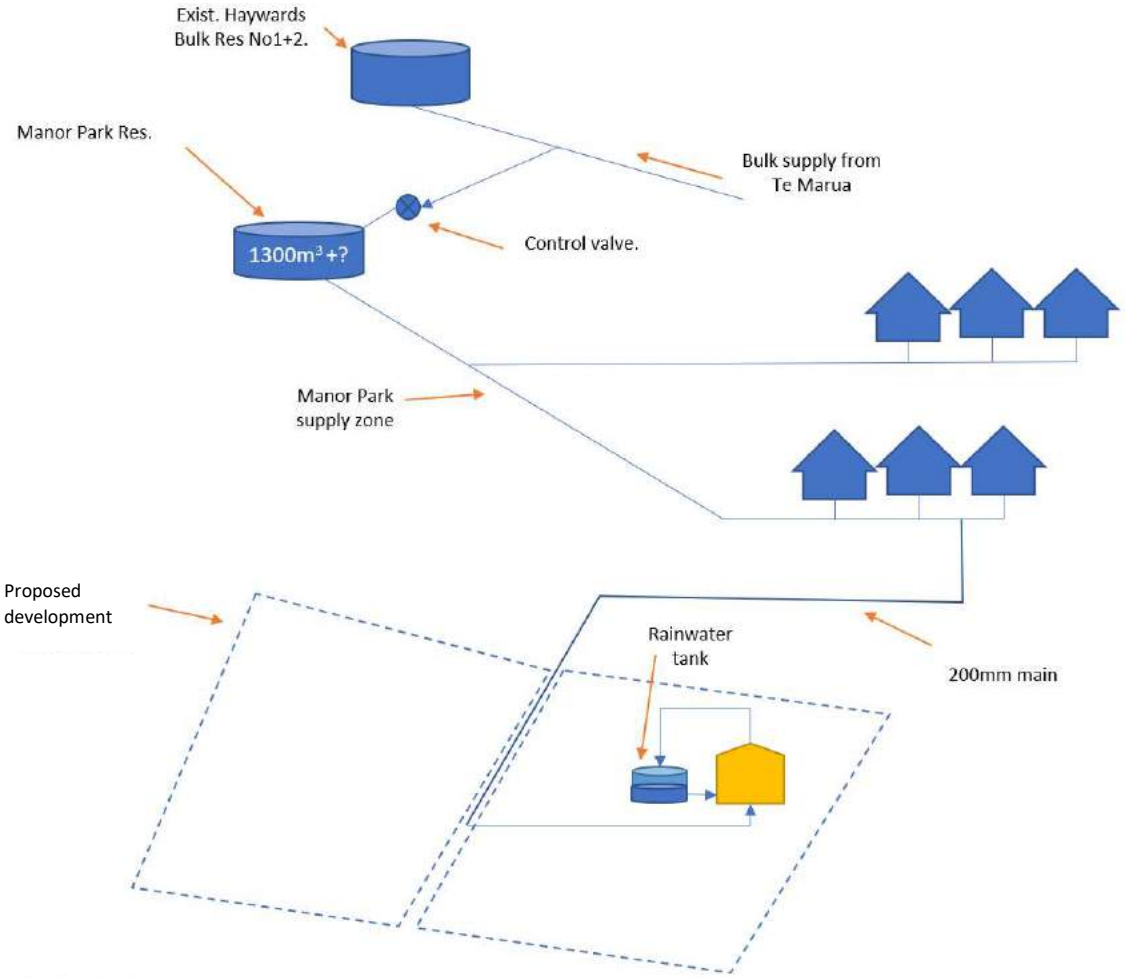


Figure 7 - Proposed ULTIMATE solution for water supply to the development. Final size of the reservoir is to be confirmed after full zone analysis.

2.4.1 Principle main (public asset)

The site will be supplied from the existing 150 mm main on Manor Park Road. A 200 mm main is proposed to deliver potable supply and firefighting water (FW2) with a potential alignment shown in Figure 9. A 200 mm main is recommended due to the long length and potentially high future demands.

The interim firefighting flow is around 29 L/s (25 L/s + 2/3rds peak), and the ultimate firefighting flow is 53 L/s. A 200 mm main can provide both those flows along the proposed 820 m long principle main without significant loss. At 29 l/s, the existing network pressure drops to 25.6 m which means there is only 15.6 m of friction losses permitted along the pipeline to comply with RSWS. As shown in Figure 8, the proposed main results in 3.7 and 11.8 m of losses suggesting the pipeline is suitable for short and long term scenarios.

	Dia (m)	flow (m3/s)	Length (n	V	Vh	Re	e (mm)	f (swam-j)	hf (m)	K	Total hf
Proposed 200mm main @ 29 L/s	0.2	0.029	820	0.92	0.0434	184620	0.15	0.0203	3.61	1.5	3.7
Proposed 200mm main @ 53 L/s	0.2	0.053	820	1.69	0.1451	337408	0.15	0.0195	11.61	1.5	11.8

Figure 8 - Headloss equations for principal main.

In the interim scenario, there is a 125 m long section of 150 mm main between the flow test point and the connection point that the logger and affinity test would not allow for. The firefighting pressure at the terminal hydrant (assuming a flat site) can be calculated as:

The starting pressure
less head loss between flow test and connection point;
less headloss along 200 mm pipe

= 25.6 – 3.7 – 2.6
= 19.3 m which is much greater than the minimum of 10 m.

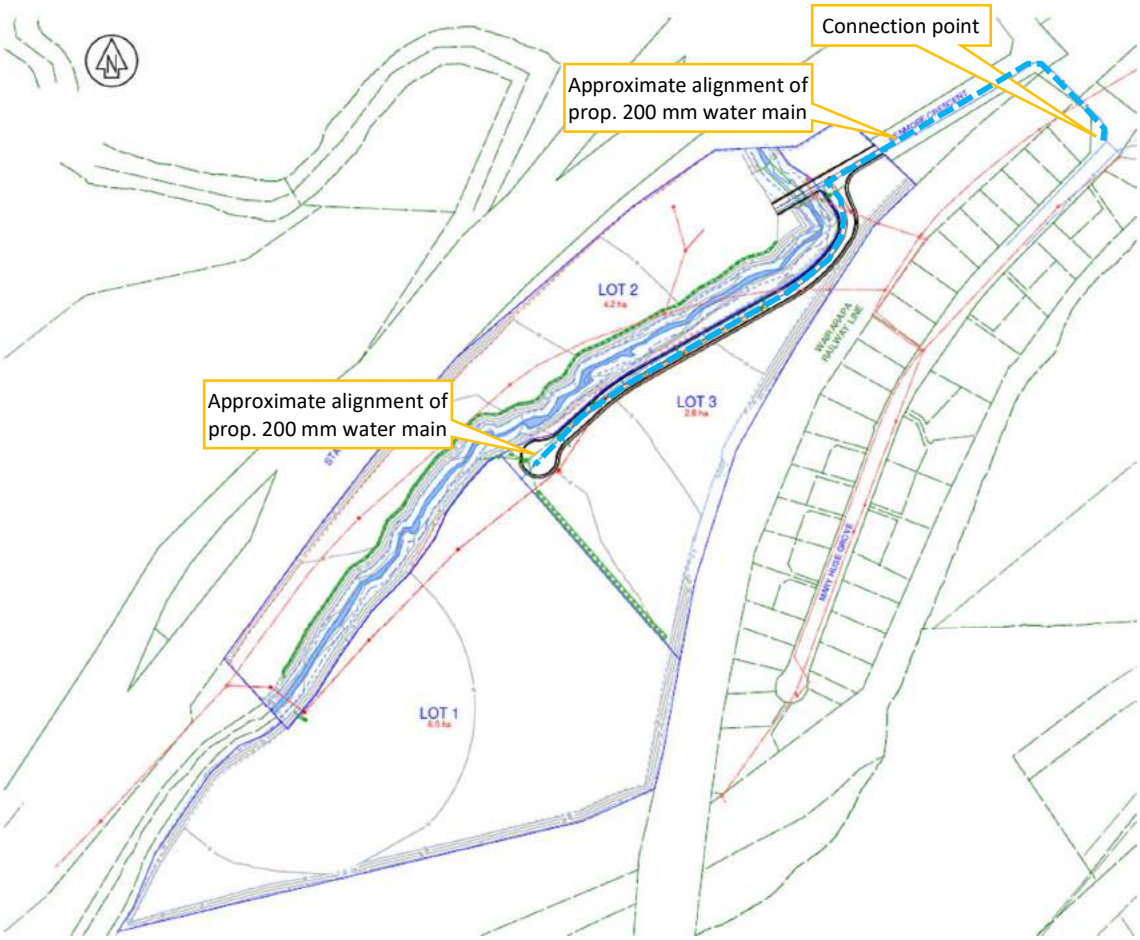


Figure 9 - Potential alignment of 200 mm water main providing potable and firefighting water supply

The long-term scenario (53 L/s) would require network upgrades as there are some 100 mm diameter sections which would require attention. Calculations suggest the main losses for the ultimate scenario are encountered along the last 500 m of main along Ford Road (100 mm pipe) and, to a lesser degree, Manor Park Road (150 mm). These are not required while the restrictors are in place, but will be required as part of the reservoir upgrade solution. The minimum upgrade to achieve the 25 m minimum pressure at the proposed development is to upgrade 120metres of 100 mm pipe to 200 mm pipe as shown in Figure 10.

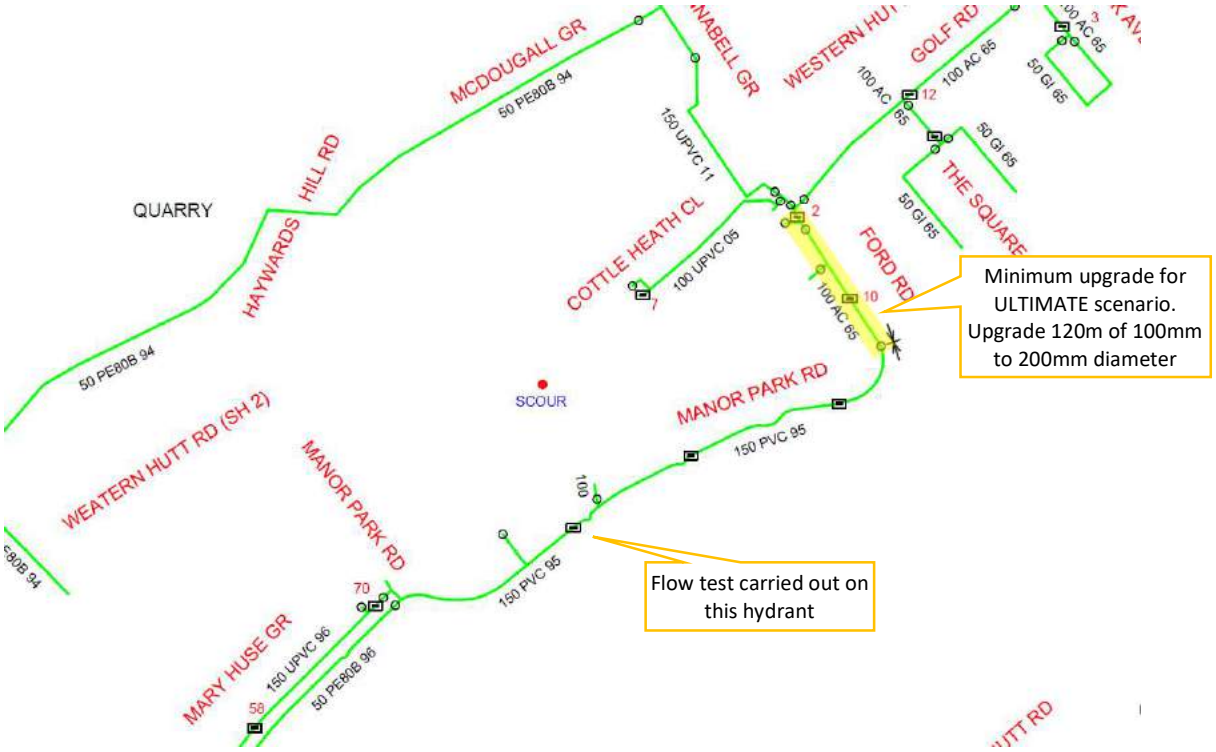


Figure 10 - Potential mains requiring upgrade for ULTIMATE solution.

2.4.2 Customer connection restrictors (public asset)

The interim solution requires all tenancies within the scheme to be supplied with water through a restrictor to limit the demand to the property. The restrictor will be sized based on the activity/tenancy area, but the demand from the entire scheme should not exceed 5.2 L/s which is the average day demand. This:

1. Reduces demand on the network pipes therefore reducing pressure fluctuations; and
2. Reduces demand on the existing reservoir to minimise impact on the reservoir level.

The restrictors are proposed to be temporary until the reservoir has been upgraded and the network capacity improved.

The connection will be metered as required by the Water Supply by-law.

2.4.3 On-site potable storage (private asset)

To help buffer the demand on the existing reservoir, the restrictors will supply on-site potable storage tanks. These will be sized to accommodate 48 hours of the proposed tenancy activities average demand. The tank will supply the future activity through a pump which will provide the pressure for the activity.

2.4.4 Rainwater re-use tank (private asset)

Rainwater harvesting tanks are proposed primarily to reduce site run-off, but they can help reduce demand on the network and reservoir. The tank will supply toilet flushing, external taps and irrigation. The size of the tank will depend on the commercial activity proposed. An example of a

1000 m^2 roof servicing a non-potable demand of 4000 L/day is given in Appendix D. This uses 10 years of rainfall data from the Maybey Road rainfall gauge (2010-2020) and suggests reductions in consumption up to 40% are possible for this example.

Current guidelines (RSWS) do not provide a target reduction in consumption, and the size of the tank will be determined by space, available roof area and activity. We are currently working on the basis of a tank that captures 2 mm runoff ie: a 1000 m^2 roof would attract a 2000 L tank. This would be ample for a warehouse type scenario, but potentially undersized for a large multistorey office building or high irrigation need.

Where rainwater harvesting systems are proposed, they are to be a permanent, privately owned installation.

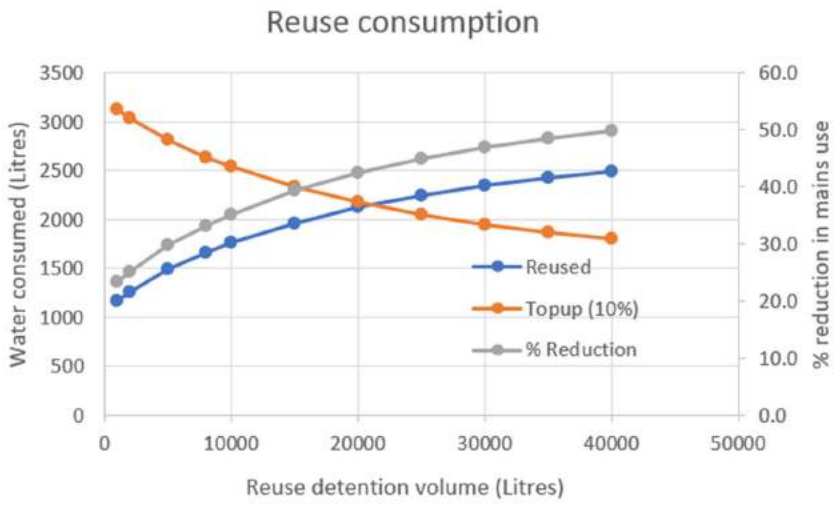


Figure 11 - Example consumption reduction for 1000 m^2 roof supplying 4000 L/d demand

2.5 Summary for Water Supply

The water supply requirements of both the Regional Standards for Water Services, and Chapter 11 of the Hutt City Council District Plan can be met through an interim and then an ultimate staged implementation. Therefore, it is feasible for rural ancillary and some commercial land uses to establish onsite.

Table 1 - Summary of compliance for Water Supply

	RSWS / HCCDP requirement	Interim stage	Ultimate stage
Peak demand	0.52 x 8 L/ha	5.3 L/s[1]	42 L/s[2]
Max pressure	90 m	81	81
Min pressure	25 / 30m	75	39[3]
Firefighting flow + 2/3peak	25 + 28	25 + 4	25 + 28
Firefighting pressure (min)	10	19.3	17[4]
Reservoir storage m^3	Exist + 903	Exist[5]	Exist[6] + 903

Notes:
1: Peak reduced in interim stage through restrictors on customer connections
2: Unrestricted potential peak demand after reservoir and network upgrades
3: Based on ultimate hypothetical development flow, but current, existing network flows (not future)
4: Includes Ford St upgrade and ultimate development flow and existing zone's current estimated peak.
5: Private activity specific storage will be required on site
6: Existing storage to be increased for the existing zone also with extra 903 for proposed development.

To achieve the compliance outlined in Table 1:

1. Flow restrictors on the customer connections to limit flow to 5.3 L/s in total for the whole development (Interim); and
2. Potable water supply tanks and pumps on each tenancy to provide 48 hours potable storage on each tenancy (Interim); and
3. Potentially rainwater harvesting tanks to reduce demand (some sites may opt for soakage); and
4. A 200 mm principal main running the length of the development from Manor Park Road; and
5. An additional 903 m^3 augmentation of the existing Manor Park reservoir storage, through a developer's contribution for a larger replacement reservoir, is to be added to the council's long-term plan. The value of the developer's contribution is dependent on the final volume and timing of the eventual upgrade.
6. A 120 m long section of 100 mm main along Ford Road will need to be upgraded to 200 mm diameter main before restrictors can be removed. This could be carried out as part of, or prior to, the reservoir upgrade.

Once the new reservoir has been built, the private storage can be removed, or retained at the development owner's discretion. The restrictors can be removed after subsequent network upgrade has been carried out.

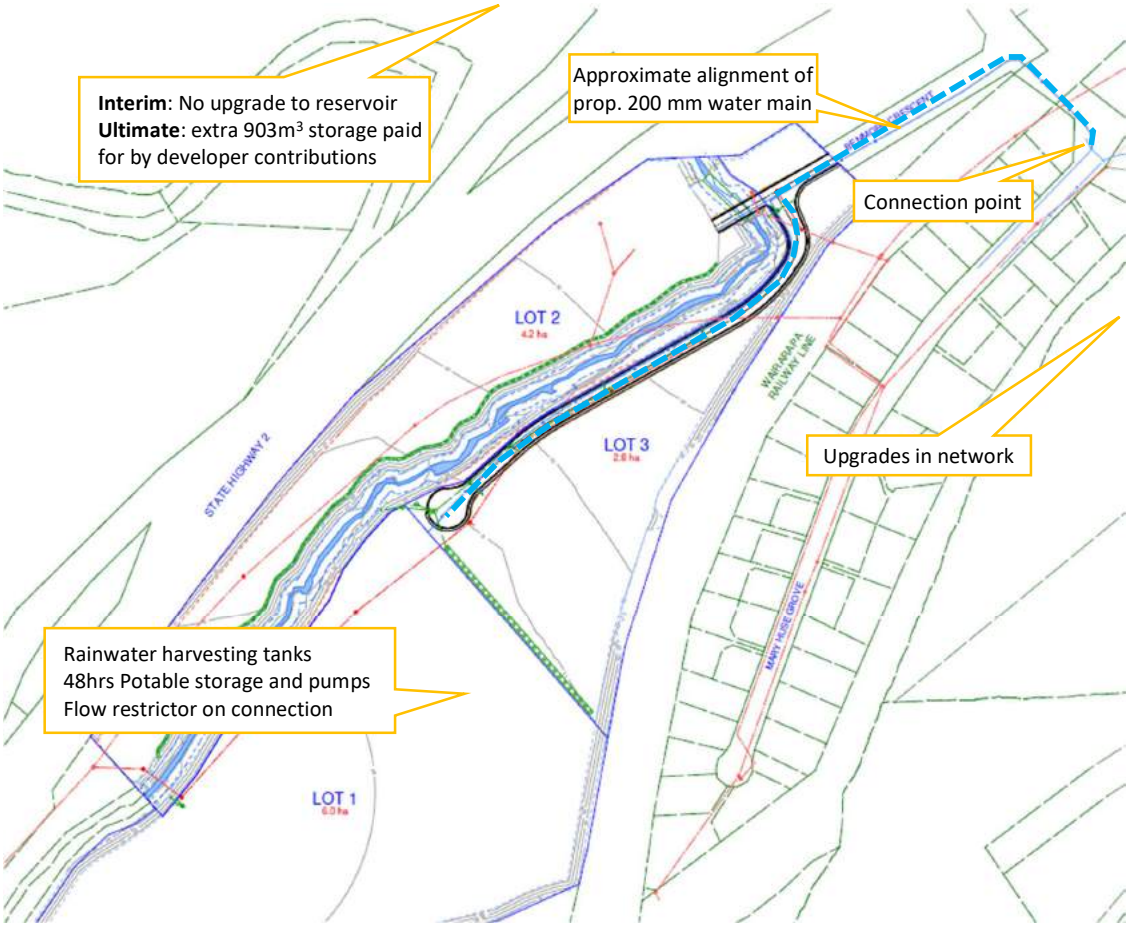


Figure 12 – Summary of water supply components

3 Wastewater

3.1 Performance requirements

The RSWS and HCCDP suggests the wastewater yield from the site for non-residential use will be as below.

Council		ADWF (L/ha/s)	PDWF (L/ha/s)	PWWF (L/ha/s)
HCC	Industrial/commercial	0.52	1.56	1.56

Figure 13 - commercial wastewater yield rates. From RSWS Table 5.2

As there is approximately 10.04 hectares of useable area, the total expected wastewater yield is:

ADWF = 5.24 L/s

PDWF = 15.7 L/s

PWWF = 15.7 L/s

3.1.1 Consultation

Wellington Water Limited's preference is to use an existing connection to the trunk main (see Appendix A) and avoid new connections. However, the proposed connection is at the high point of the site so a pumping station and rising main would be required. Due to the cost and maintenance of a pump station, storage and rising main, a gravity system has been proposed. This requires a connection to an existing manhole on the trunk sewer (HCC_W001616 - IL 25.91).

3.2 Existing network

The existing wastewater network is shown in Figure 14.

There is no existing local wastewater network within the site apart from a short length of 150 mm AC pipe (laid in 1972) that services 10d Benmore Crescent.

The trunk sewer (825 mm concrete pipe) passes through the site, but it is not permitted to connect customer connections directly to the trunk sewer.

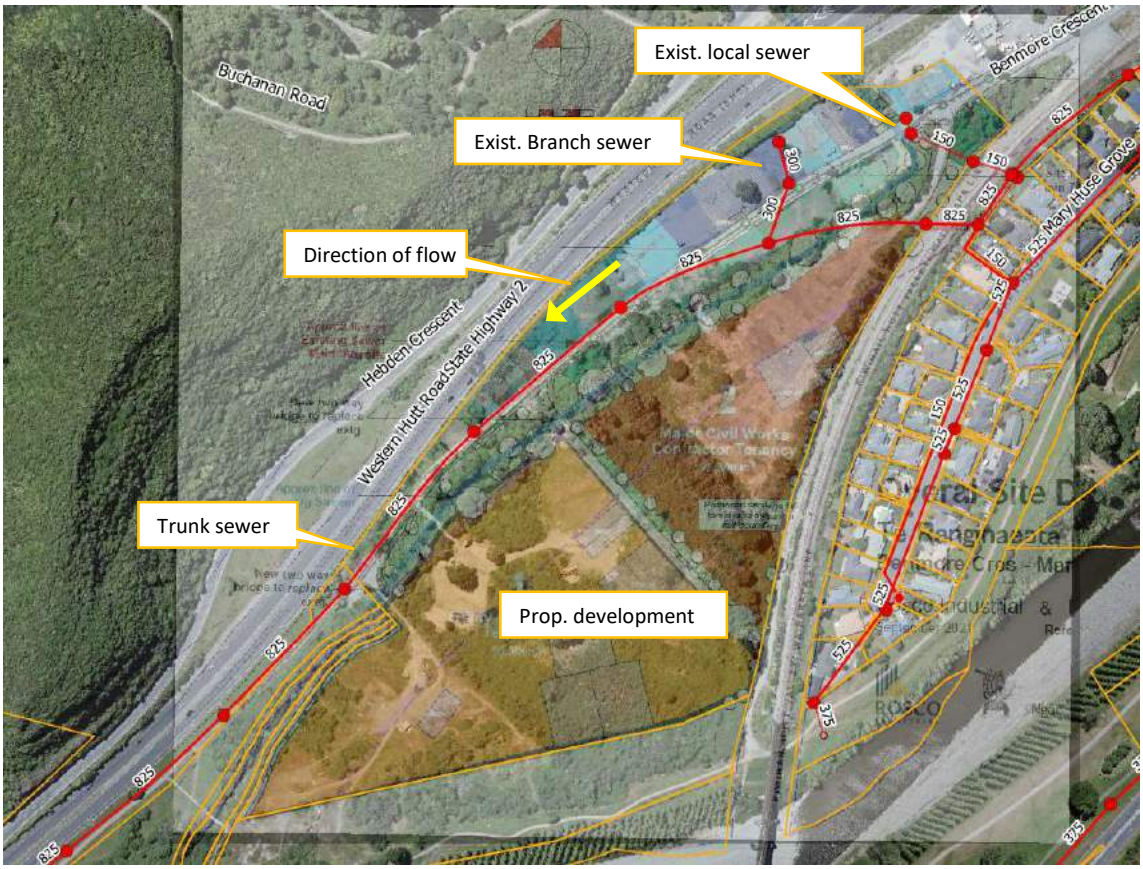


Figure 14 - Existing Wastewater Network

3.3 Concept design

It is proposed to adopt a traditional gravity network falling to a low point within the site. Unfortunately, this is well downstream of the existing trunk sewer branch, so a new connection to the trunk sewer will be required. A pump station back to the existing connection was considered but has been dismissed due to the distance, pump station storage requirements and associated maintenance costs. A gravity connection will have greater long term maintenance benefits than a municipal owned pumped system.

A watercourse bisects the site and wastewater would need to cross this stream at two points to service areas on the eastern side of the stream. The height of this crossing would need to be considered carefully to ensure it is above the flood level, or at least designed against flood flows.

If, during detailed design, the pipe crossings are too low for the culverts or are exposed to flood waters, there is the potential to have the eastern side serviced by on-site private pressure sewers that discharge to the trunk main at the northern end of the site. The private pumping stations would also have storage in-line with the site activity and the Regional Standard for Water Services.

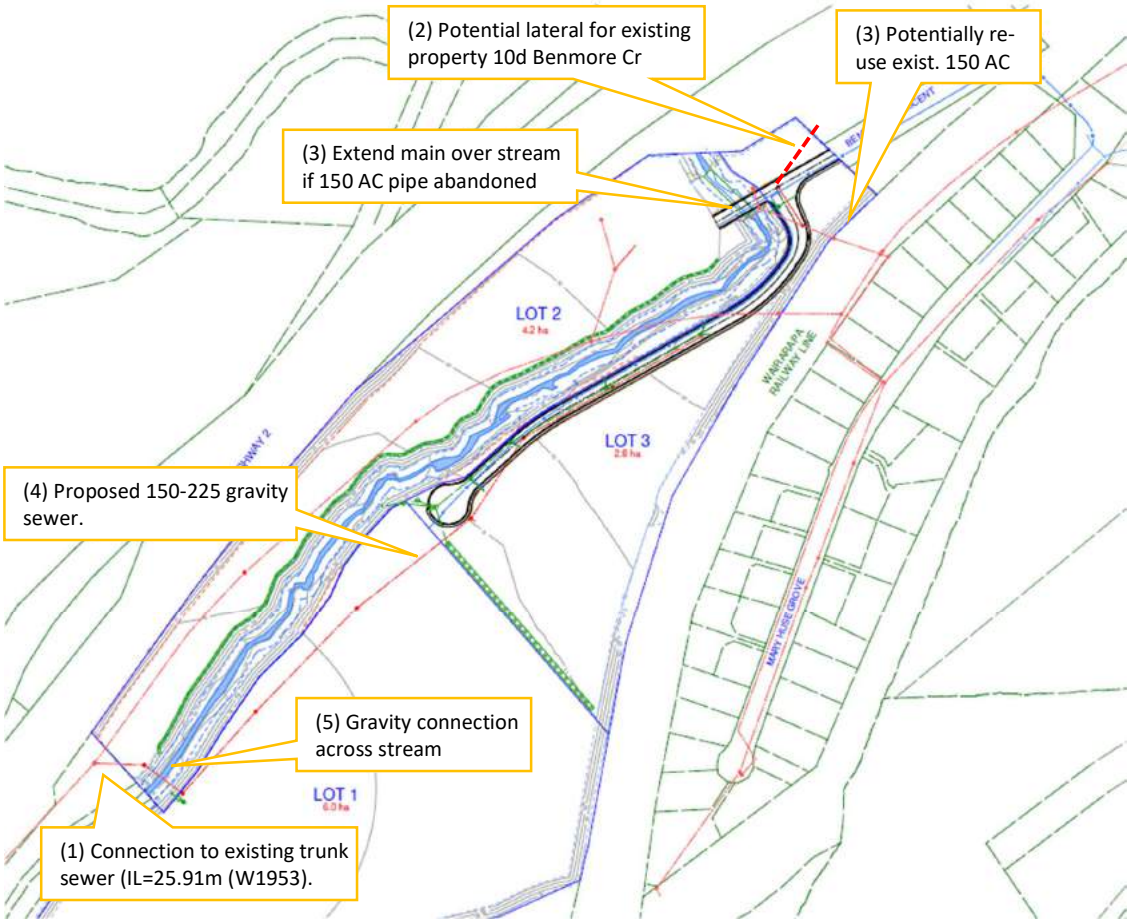


Figure 15 - Proposed wastewater network infrastructure

Considerations:

1. Trunk Sewer Invert for HCC_WW001616 = 25.91m (WLG1953 from GIS). Approx. 2 m cover
2. The property at 10d Benmore Crescent will need to be accommodated within the new network.
3. The existing 150 AC pipe (laid in 1972) servicing 10d Benmore Crescent could be used to service the areas at the north eastern corner of the development. If this pipe is too small, a pipeline could be laid across the stream to the proposed main within the access way.
4. The proposed main pipeline will be laid in the access road and will be either a 150 mm or 225 mm diameter pending available grades and detail design. The ground profile generally slopes down in a south-west direction at a 1:80 (v:h) grade. The PWWF would be just contained with a 150 mm pipe (at 80% depth) but does not include contributions from outside the development, so a combination of 150 mm and 225 mm pipe is likely.
5. Gravity is preferred.

3.4 Summary for Wastewater

The wastewater requirements of both the Regional Standards for Water Services, and Chapter 11 of the Hutt City Council District Plan can be met through a traditional gravity sewer system. Therefore, it is feasible for rural ancillary and some commercial land uses to establish onsite.

Table 2 - Summary of compliance for wastewater network

	RSWS / HCCDP requirement	Vel > 0.75 m/s[1]	<=80% capacity
ADWF	0.52 x 10.04 ha	N/A	Yes
PDWF	1.56 x 10.04 ha	Yes	Yes
PWWF	1.56 x 10.04 ha	Yes	Yes

Notes:
1: based on 150mm pipeline

A central gravity pipeline will run the length of the site and discharge to the trunk sewer at the south-western end of the site. A new connection to the trunk sewer will be required.

10d Benmore Crescent will need to remain connected to either the existing 150 mm sewer main, or transferred to the proposed wastewater network.

All other activities will be able to connect to the main sewer pipeline using traditional gravity connections.

4 Stormwater

4.1 Performance requirements

The Hutt City Council District Plan (HCC DP) does not have any specific clauses outside conveyance of ARI events which are duplicated in the RSWS.

The RSWS outlines the minimum level of protection for stormwater assets. The primary level of service for the development is 10% AEP for local roads and commercial areas.

The activity ***does not*** comply with Greater Wellington's Proposed Natural Resources Plan (PNRP) Rule R49:

> Rule R49: Stormwater from new subdivision and development – permitted activity
>
> The discharge of **stormwater** into water, or onto or into land where it may enter a **surface water body** or coastal water, including through an existing local authority or state highway **stormwater network,** from:
>
> (a) a new urban subdivision or new urban development associated with **earthworks** up to a total area of 3,000m² per **property** per 12 month period, or
>
> (b) a new or redeveloped state highway associated with **earthworks** up to a total area of 3,000 m², or

Meaning the proposed activity is a restricted discretionary activity as per Rule R50 below:

> Rule R50: Stormwater from new subdivision and development – restricted discretionary activity
>
> The discharge of **stormwater** from a new urban subdivision or new urban development, or new or redeveloped state highway into water, or onto or into land where it may enter a **surface water body** or coastal water, including through an existing local authority or state highway **stormwater network,** that is not permitted by Rule R49 is a restricted discretionary activity.
>
> *Matters for discretion*
>
> 1. Measures to **minimise** the adverse effects of **stormwater** discharges in accordance with Policy P83, including the extent to which **water sensitive urban design** measures are employed
> 2. Measures to manage runoff volumes and peak flows in accordance with Policy P84
> 3. Requirements of any relevant local authority **stormwater network** discharge consent, including those set out in any relevant **stormwater management strategy** developed in accordance with Schedule N (stormwater strategy)

The related policies are outlined below:

Policy P83: Minimising adverse effects of stormwater discharges

The adverse effects of **stormwater** discharges shall be **minimised** ~~to the smallest amount reasonably practicable~~, including by:

(a) using **good management practice**, and

(b) taking a **source control** and treatment train approach to new activities and land uses, and

(c) implementing **water sensitive urban design** in new subdivision and development, and

(d) progressively improving existing **stormwater, wastewater**, road and other public infrastructure, including during routine maintenance and **upgrade**~~.~~, and

(e) managing localised adverse effects, including by addressing particular attributes appropriate to the receiving environment.

Policy P84: Managing land use impacts on stormwater

Land use, subdivision and development, including **stormwater** discharges, shall be managed so that runoff volumes and peak flows:

(a) avoid or **minimise** scour and erosion of stream beds, banks and coastal margins, and

(b) do not increase risk to human health or safety, or increase the risk of inundation, erosion or damage to **property** or infrastructure,

including by retaining, as far as practicable, pre-development hydrological conditions in new subdivision and development.

4.1.1 Consultation

Wellington Water did not have anything specific (see Appendix A) related to stormwater, notwithstanding building no closer than 5 m to the stream and that overland flow needs to be considered. Overland flow is being considered in a separate, flood specific report, and will also be considered in detail during resource consent.

4.2 Overall proposed concept

The general stormwater concept proposed for the development is outlined in Figure 16. This is based on the currently proposed scheme and may change during detailed design.

The objective of the concept is to:

- Mitigate adverse impacts from changes in frequent flow hydrology,
- Reduce pollutant loads from the proposed development into the receiving environment,
- Reduce temperature impacts on downstream receiving environments.

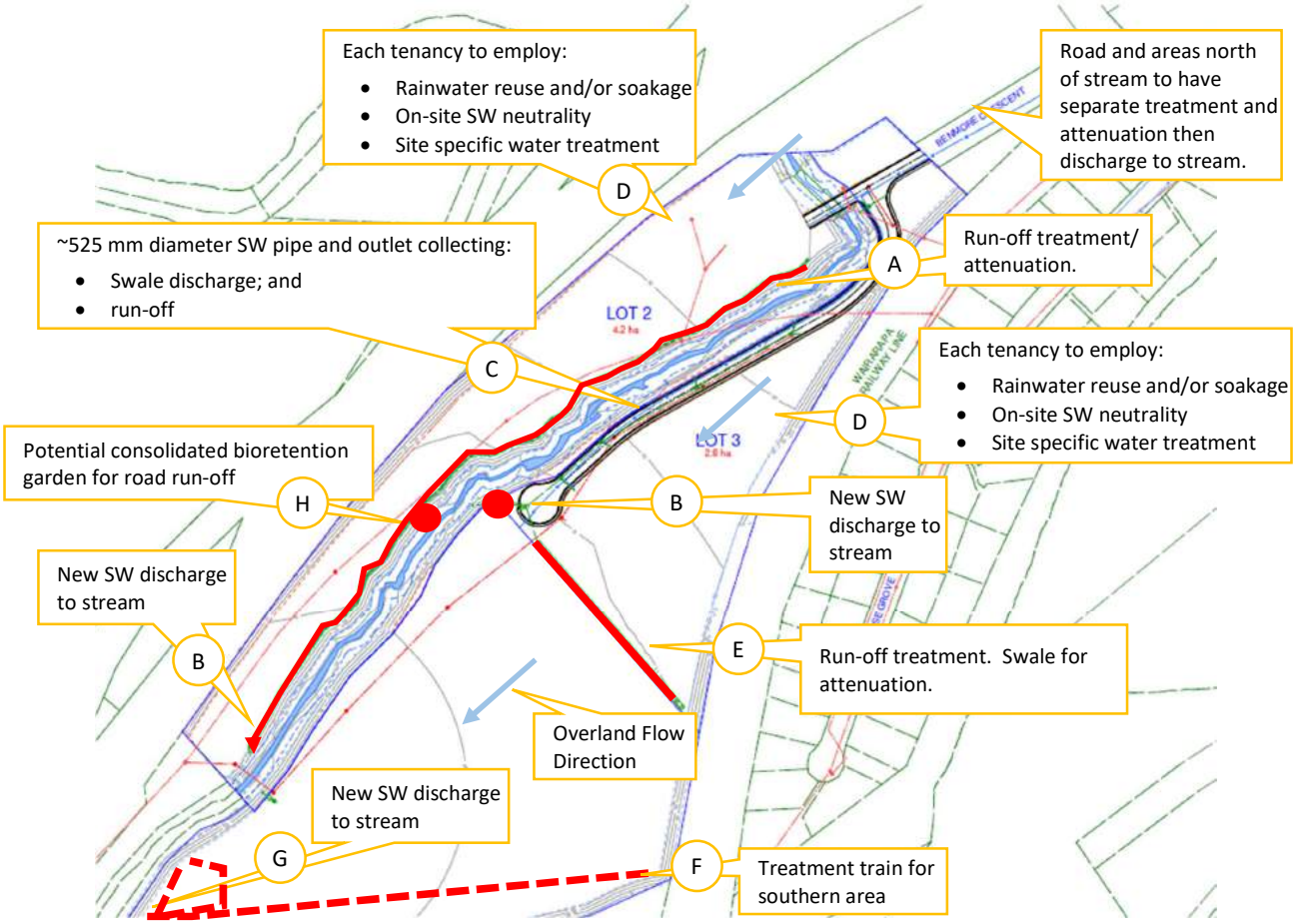


Figure 16 - Outline stormwater management quality (Based on currently proposed scheme)

The general concept components proposed to achieve these objectives are:

1. Stormwater re-use is provided for each tenancy using on-site retention tanks (D). These are to be designed on a per area and case-by-case basis.
2. Water quality treatment for each tenancy will be through a bespoke, on-site, WSUD design (D). This is likely to comprise proprietary pollutant traps supported by rainwater harvesting.
3. Water quality treatment of other road surfaces will be through other devices as either part of the swale, or off-line to the swales. The devices will be for water quality only and are expected to be around 2% of the paved area in size (E and A).
4. Discharges from the bioretention devices, swales and on-site WSUD devices will be collected by a 525 mm diameter drain (C). This drain can accommodate the 1% AEP event. It is provided at depth as many filtration devices have sub-soil discharges.
5. Collected discharges will discharge to the stream outlets (B and G). These will require erosion and scour protection.
6. The southern tenancy will require on-site stormwater detention and treatment (F) and then discharge direct to the stream (G) through a constructed outlet with erosion and scour protection.

4.3 Rainwater harvesting / run-off volume management

Rainwater harvesting is proposed to both reduce demand on the potable water supply network, but primarily to reduce stormwater run-off volumes. Harvesting potential is heavily dependent on the

roof area available from the on-site activity and a specific target reduction has not been set. The limiting factor will be the amount of non-potable demand from the commercial activity, as the run-off reduction is only long term if there is long-term non-potable use.

A bespoke design will be required for each tenancy and activity incorporating either one or both of the volume management options.

4.4 Stormwater disposal

Discharges from the treatment and attenuation devices will be discharged to the stream via constructed outlets. These will require rip-rap scour and erosion protection. These outlets will need to be designed to discharge the design 1% AEP flows without scour or erosion, and also withstand 1% AEP transverse flows from the stream when the stream is in flood.

4.5 Stormwater quality

To meet the requirements of policy P83, it is proposed that:

1. Water sensitive design devices to treat run-off from paved surfaces on each activity, and
2. Vegetated swales to treat run-off from impermeable surfaces.

4.5.1 Swales

The swales beside the roads provide more of an attenuation function than treatment due to the requirement of them to convey low-frequency high-flow events as well as higher frequency events. They will provide some pre-treatment and sediment removal of the water quality flow prior to that flow being collected by any devices at the end of the swale.

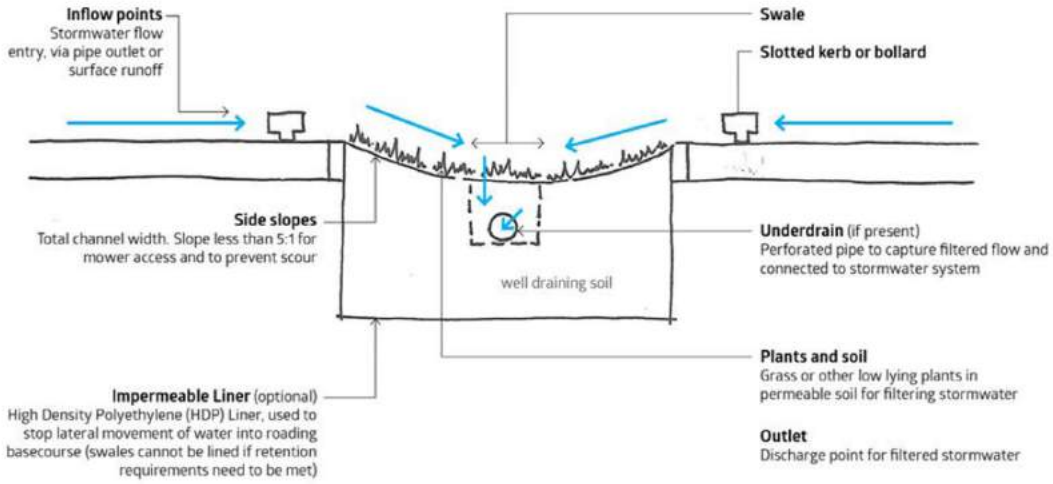


Figure 17 - Typical swale cross-section (from Auckland Regional Council 2011)

4.5.2 Treatment Devices

The devices on Benmore Crescent could be either multiple smaller devices along the long road, or a single large device at the southern end. A single device would be the preference as it consolidates maintenance into a single device, and the longer uninterrupted swale will better attenuate flows than a series of shorter swales.

Each tenancy will require a treatment device or devices to collect treat and discharge the water quality volume from the tenancy. The design and quantity of these will be dependent on the site layout, coverage and activity employed on each tenancy.

The treated discharge from each tenancy will be to either the central pipeline through the site, or directly to the stream, or to the local stormwater network.

Any discharges to the stream will require erosion protection to prevent damage to the sides of the stream. This is likely to be rip-rap protection and potentially energy dissipators depending on the slope and flow. As the swales and pipes are artificial and will normally be dry, fish passage is not a consideration on any of the discharges.

4.6 Summary for Stormwater

The proposed activity is a restricted discretionary activity under the proposed Natural Resources Plan administered by Greater Wellington. To achieve the objectives of the proposed Natural Resources Plan, specifically Rule R50, any implementation must:

a) Minimise the adverse effects of stormwater discharges in accordance with Policy P83, including the extent to which water sensitive urban design measures are employed
b) Manage run-off volumes and peak flows in accordance with Policy P84: minimising scour and erosion and not increasing risks to human health or safety or inundation damage to property or infrastructure.

The following stormwater management components are proposed:

1. Each tenancy will collect and treat the run-off on each activity using on-site with WSD devices;
2. Each tenancy will employ rainwater harvesting and/or soakage to reduce run-off volumes;
3. Each tenancy's treated discharge will discharge to the proposed stormwater pipe or, where this is not possible, directly to the stream.
4. The swales will be sized to accommodate the 10% and 1% AEP events from the carriageway.
5. Public/common access roads will use gross pollutant traps (Vortech units or similar) to treat runoff. Flows beyond the water quality volume will be by-passed to the stormwater network.
6. All attenuated and treated flows from areas and carriageways will be collected and conveyed to outfalls through a swale and pipe network. The network will need to be sized to accommodate the 1% AEP flows from tenancies and roads. Some direct, uncontrolled run-off to the stream is likely from adjacent stream banks and undeveloped areas, but these will be minor and either the same or improved over existing in terms of quality and quantity.
7. Discharge points to the stream will need to be designed to protect the receiving environment from scour and erosion for flows up to 1% AEP. The discharge points will in turn, need to be protected against high lateral flows from the streams flood flows.

Hutt City Council District Plans requirement in Chapter 11 requires the primary network (pipes and channels) to convey a 10% AEP event. Item 7 complies with this as well as carrying the secondary flow of 1% thereby satisfying the primary and secondary conveyance requirements.

WSD devices employed by the development will need to be assessed against the requirements of Wellington Water Limited's *Water Sensitive Design for Stormwater: Treatment Device Design Guideline (December 2019)* and the internally referenced documents to demonstrate compliance with the objectives of policies P83 and P84 and therefore the requirements of the proposed Natural Resources Plan.

Overall, it is feasible to acceptably manage stormwater onsite for industrial and commercial land uses that may establish onsite if the land is re-zoned to the General Business Activity Area in the District Plan.

Effects of overland flows and flooding from the stream is under a separate report by others.

Appendix A. Wellington Water Correspondence

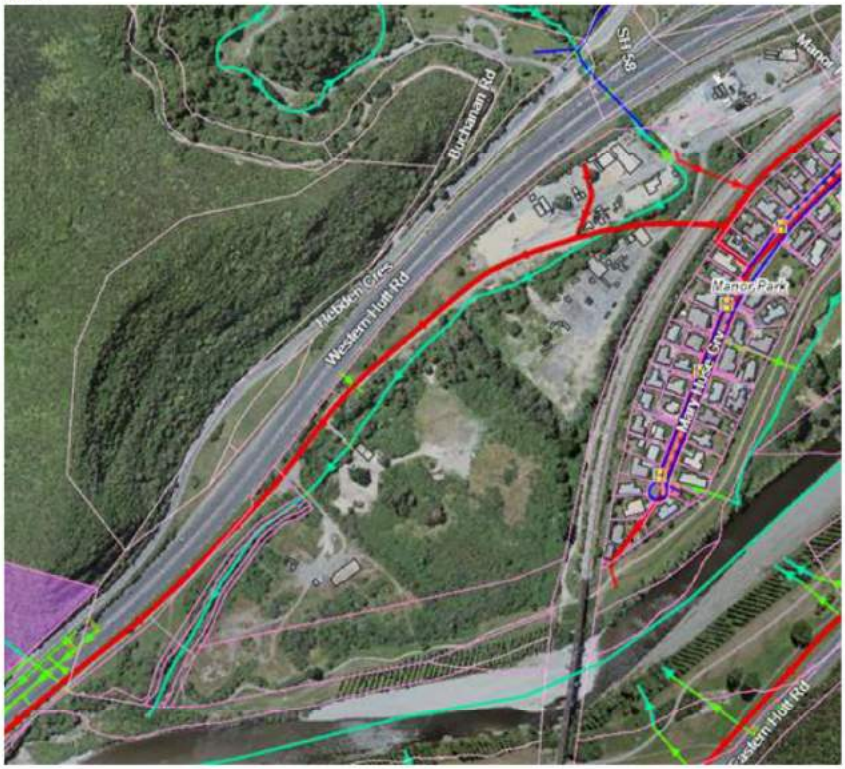
Rob Jack

From:	Land Development <Land.Development@wellingtonwater.co.nz>
Sent:	Wednesday, 27 October 2021 4:59 PM
To:	Rob Jack
Cc:	Resource Consents (ResourceConsents@huttcity.govt.nz); Subdivision
Subject:	RE: Te Rangihaeta Business Park, Manor Park, Lower Hutt- wwl - 27 Oct 2021

Hi Rob

Please find the 3 waters comments below:

GIS:



Proposal:

Water Supply:

In terms of connection, the proposed location (off the existing 150mm pipe on the manor Park Road) seems Ok. Our model shows that water pressure is expected to be around 85m around the identified location. It is recommended that the they do pressure logging and hydrant flow test and provide hydraulic calculations to support their scheme is compliant with the RSWS and the NZ fire code.

Please note that the Manor park reservoir servicing this zone is a small reservoir (~200 m^3) and is currently under capacity. Current short fall in storage is estimated to be double the size of reservoir so in reality there is no room to service additional large demand such as this proposed commercial/industrial park. Additional storage / new reservoir would be required to service this development.

Please discuss with Wellington Water once a scheme plan and a domestic/fire water demand is estimated.

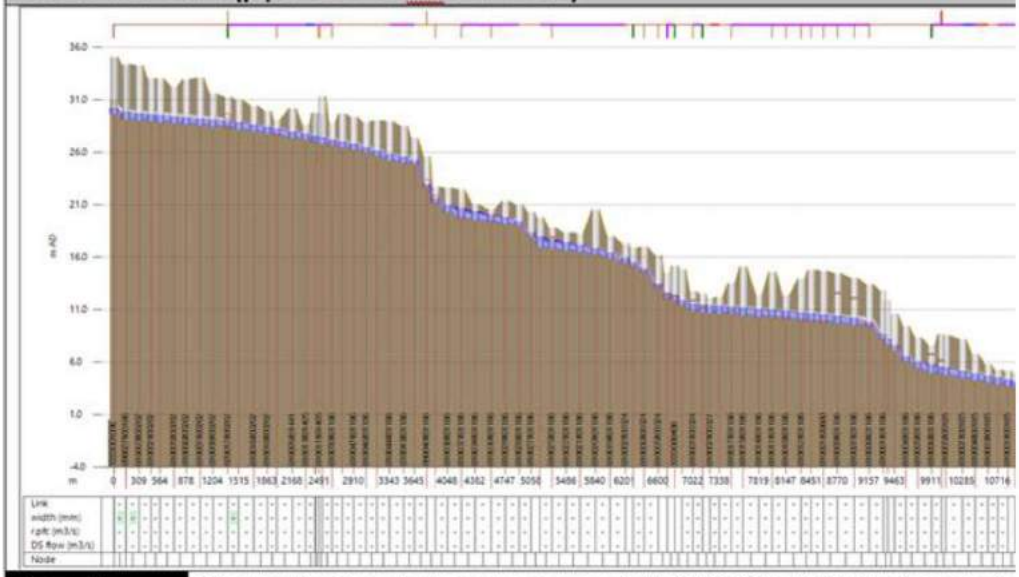
Stormwater:

- Please note that Wellington Water currently does not have a hydraulic model for this area and as such we are unable to provide any information on flooding for this area. We recommend that a catchment analysis be carried out to determine minimum floor levels and overland flow paths – this is to ensure the proposed development will be constructed above possible flood levels and outside of any secondary flow path. It is also advised to consult with HCC subdivision team and or GWRC to confirm if they have any information on flooding.
- There is a stream along the site, we do not recommend building close than 5m to the stream. Please discuss with Regional Council on any other requirements.
- Based on the total development area, stormwater treatment will be required (as part of GW requirement).

Wastewater:

- We recommend a peak flow assessment for this development. Significant overflow to Hutt River may trigger mitigation requirements. Please find the modelling info below.

TRUNK NETWORK (pipes 300mm dia and above)



Current Capacity	The trunk network downstream manhole 810046R01186 discharges via Trunk Sewer to pump station PS434 at the Ava Rail Bridge. There are ma sections that are already over their design capacity during a 1-year LTS event. Furthermore, there are engineered overflows at manhole 81001 and the inlet to pump station PS434 that discharge into the Hutt River. it is not clear from the model results as to whether they operate and th frequency. Further development of this property will exacerbate this.

- Discharging to trunk main directly is not recommended. Option B is preferred if feasible. For Option A, instead of a private connection to the trunk, a small section of 300mm main section is recommended as a transition(please check if there are concerns on sewer back up/overflow). A private manhole is also required before discharging to the public main (public manhole) by gravity.
- There is a trunk wastewater main on site, please obtain as built info from Wade: Wade Gosper <Wade.Gosper@wellingtonwater.co.nz>
  Please refer to Regional Standard for building close to mains. Discussion and approval from Wellington Water is required if building close to main is proposed.

Thanks
Sarah

Sarah Zhou Senior Engineer - Land Development
Wellington Water
Tel +64 4 912 4531 Mob 021 309 998
Private Bag 39804, Wellington Mail Centre 5045
Level 4, IBM House, 25 Victoria Street, Petone, Lower Hutt
www.wellingtonwater.co.nz

From: Rob Jack <rob.jack@3wl.co.nz>
Sent: Monday, October 11, 2021 11:36 AM
To: Land Development <Land.Development@wellingtonwater.co.nz>
Subject: Te Rangihaeta Business Park, Manor Park, Lower Hutt

Hello

We are helping Richard Burrell (client/landowner) with a development which is proposed as a commercial/industrial park (see yellow outline below).

A plan change application is currently being compiled as the land is currently zoned Rural (with various designations). As part of this, an assessment around the water and wastewater servicing is required.

Are you able to provide an indication of where connections might be permitted to this site for water and wastewater should the plan change (to commercial) be successful? We are currently assuming:

- 150mm firefighting connection onto the 150mm main on Manor Park Road (see light blue below), pending pressure tests etc
- Wastewater draining to a pump station which then discharges into a manhole on the 825mm Trunk Sewer (point A) or onto the 300mm branch line (point B)

Is Wellington Water able to comment on these two services in terms of:

- What would be allowed (in principal until further detail is provided by the proposal)
- What definitely would not (just so we know).

Cheers!
Rob Jack
0272 854 566

Appendix B. Water Supply Flow Test Results

ADR Arthur D. Riley & Co. Ltd. | fieldsmart technology

ADRwater

20 April 2022

Vecta Limited
7 Lydney Place
Porirua 5022
Attention: Rob Jack

Dear Rob

14 Manor Park Road Lower Hutt Water Main Testing

I have completed my testing. There were no incidents or issues. Everything went smoothly.

I did my pressure testing using the hydrant in the berm outside 70 Mary Huse Grove. Pressure data was collected at 30-second intervals from 13 to 19 April 2022 inclusive. Meters Head is the measurement unit. 10.215 Meters = 100 KPA. Static pressure in this area averages about 81-82 MH.

I used the hydrant in the berm outside 14 Manor Park Road for the flow testing. I opened the hydrant fully to get its best flow rate. The maximum flow rate was about 27 LPS. This remained steady during the testing.

There was only about a 62 % drop in pressure during the flow testing between 9.07 and 9.17 AM on 19 April. I have highlighted this in the spreadsheet provided with this report. Although the flow rate is probably adequate the large drop in pressure may be more concerning, depending on the demands of the new development at this site.

This should give you all the data you need.

Yours faithfully

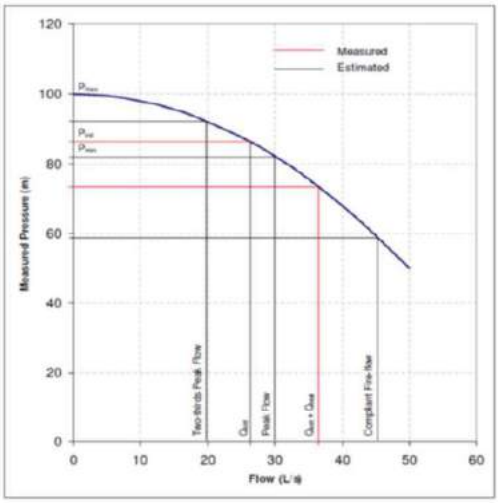
Chris Parkinson
Manager Leak Detection
ADR
Wellington
04916 6211
021 305 637

1

Appendix C. Affinity Analysis

Design Flow & Design Pressure Loss Estimate Based on Network Hydrant Testing

Tested Hydrant Number: 14 Mary Huse Grove
Main Size: 150mm
Main Material: PVC



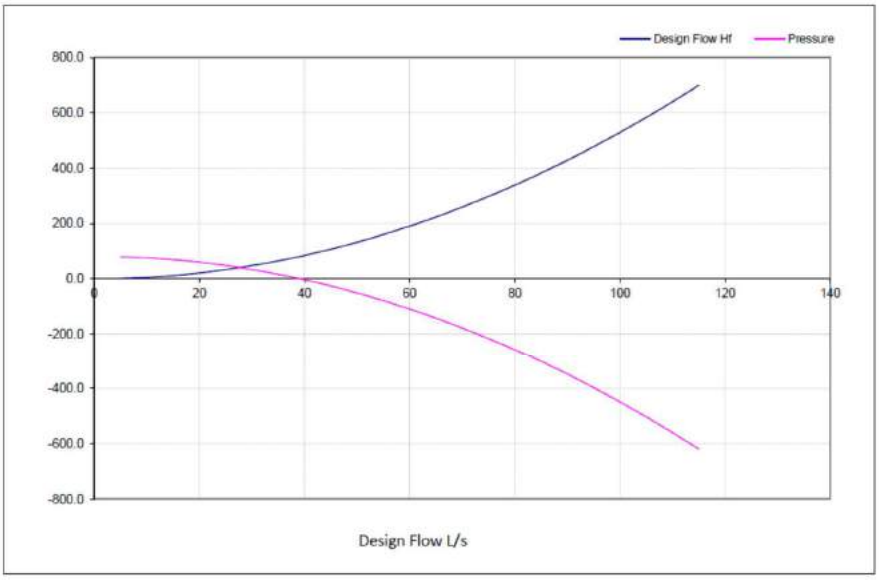
81.3	PmaxA	Max pressure at Logger A (during low flow in metres)
79.5	PminA	Min pressure at Logger A (during high flow in metres)
80.4	PinitA	Initial Logger A Pressure just before flow test (metres)
30	PtestA	Logger A pressure during flow test (metres)
1.8	Hfpeak	total headloss during peak demand (Pmax-Pmin)
0.0	Hflow	total headloss during low demand (Assumed to be 0 metres)
0.9	Hfinit	total headloss just before test flow (Pmax-Pinit)
51.3	Hftest	Total headloss during test flow (Pmax-Ptest metres)
27	Qtest	test flow (L/s)
0.0	H	variable (Hfinit/Hftest)
4.1	Qinit	network flow immediately before test

Then using the relationship $\frac{Hf_{init}}{Hf_{test}} = \left(\frac{Q_{init}}{Q_{init} + Q_{test}}\right)^2$

5.8	Qpeak	peak demand flow	where Qpeak = (Qinit+Qtest)/(sqrt(Hftest/Hfpeak))
25	Firefighting flow	plus	
5.3	Additional peak flow from development/growth		
32.4	Design flow		
55.7	Design Pressure Loss	25.6	Design pressure
0.0529634	Kv	where Kv = Hfpeak/((Qpeak)^2)	

$$Q_{init} = \frac{-2HQ_{test} - \sqrt{(2HQ_{test})^2 - 4(H-1)(HQ_{test}^2)}}{2(H-1)} \quad \text{where } H = \left(\frac{Hf_{init}}{Hf_{test}}\right)$$

	Design	Design Flow Hf	Pressure
	5	1.3	80.0
	10	5.3	76.0
	15	11.9	69.4
Appendix 1	19.4	19.9	61.4
	25	33.1	48.2
	30	47.7	33.6
	35	64.9	16.4
	40	84.7	-3.4
	45	107.3	-26.0
	50	132.4	-51.1
	55	160.2	-78.9
	60	190.7	-109.4
	65	223.8	-142.5
	70	259.5	-178.2
	75	297.9	-216.6
	80	339.0	-257.7
	85	382.7	-301.4
	90	429.0	-347.7
	95	478.0	-396.7
	100	529.6	-448.3
	105	583.9	-502.6
	110	640.9	-559.6
	115	700.4	-619.1



Appendix D. Interim Water Supply Solution Acceptance Email

Rob Jack

From: Stephen Davis <Stephen.Davis@huttcity.govt.nz>
Sent: Tuesday, 24 May 2022 11:41 am
To: Alex Gifford; mohammed.hassan@wellingtonwater.co.nz; Rob Jack
Cc: Iman.Aghamohammadi@wellingtonwater.co.nz; Bruce Hodgins; Kate Pascall
Subject: RE: [EXTERNAL] RE: Manor Park - HCC & WWL meeting notes

Hi Alex,

After discussing with Wellington Water we are okay with your proposed interim solution but it will be just a short term solution. The existing reservoir has seismic issues and will still need to be fully replaced sooner rather than later, with a new approx. 1.3 ML reservoir (figure including your project's needs).

We're looking at an amendment to the LTP to cover the replacement, and we'll be looking for development contributions to cover your project's share. We don't have any more definite costs for this at this stage.

Cheers,
Steve

Stephen Davis
Intermediate Policy Planner

Hutt City Council, 30 Laings Road, Lower Hutt 5040
P: 04 570 6761 M: W: www.huttcity.govt.nz

From: Alex Gifford <AGifford@tonkintaylor.co.nz>
Sent: Tuesday, 24 May 2022 8:39 AM
To: Stephen Davis <Stephen.Davis@huttcity.govt.nz>; mohammed.hassan@wellingtonwater.co.nz; Parvati Rotherham <Parvati.Rotherham@huttcity.govt.nz>; Kate Pascall <Kate.Pascall@huttcity.govt.nz>; Rob Jack

<rob.jack@vecta.co.nz>
Cc: Iman.Aghamohammadi@wellingtonwater.co.nz; Bruce Hodgins <bruce.hodgins@huttcity.govt.nz>
Subject: RE: [EXTERNAL] RE: Manor Park - HCC & WWL meeting notes

Morning Stephen

Can you please provide an update on the discussions between HCC and WWL.

Rob and I are available to answer questions as they come up.

Cheers,
Alex

Alex Gifford | Senior Planner
BRP(hons), MNZPI
Tonkin + Taylor - *Exceptional thinking together*
Level 4, 2 Hunter Street, Wellington 6011 | PO Box 2083, Wellington, New Zealand
T +6448064996 www.tonkintaylor.co.nz T+T profile

Tonkin+Taylor
To send me large files you can use my **file drop**

From: Stephen Davis <Stephen.Davis@huttcity.govt.nz>
Sent: Thursday, 12 May 2022 9:27 AM
To: Alex Gifford <AGifford@tonkintaylor.co.nz>; mohammed.hassan@wellingtonwater.co.nz; Parvati Rotherham <Parvati.Rotherham@huttcity.govt.nz>; Kate Pascall <Kate.Pascall@huttcity.govt.nz>; Rob Jack <rob.jack@vecta.co.nz>
Cc: Iman.Aghamohammadi@wellingtonwater.co.nz; Bruce Hodgins <bruce.hodgins@huttcity.govt.nz>
Subject: RE: [EXTERNAL] RE: Manor Park - HCC & WWL meeting notes

Hi Alex,

We're still working through this with Wellington Water but we're hoping to have an answer for you soon.

Cheers,
Steve

Stephen Davis
Intermediate Policy Planner

Hutt City Council, 30 Laings Road, Lower Hutt 5040
P: 04 570 6761 M: W: www.huttcity.govt.nz

HUTT CITY
TE AWA KAIRANGI

From: Alex Gifford <AGifford@tonkintaylor.co.nz>
Sent: Wednesday, 11 May 2022 4:46 PM
To: mohammed.hassan@wellingtonwater.co.nz; Stephen Davis <Stephen.Davis@huttcity.govt.nz>; john.duggan@wellingtonwater.co.nz; Parvati Rotherham <Parvati.Rotherham@huttcity.govt.nz>; Kate Pascall <Kate.Pascall@huttcity.govt.nz>; Rob Jack <rob.jack@vecta.co.nz>
Cc: Iman.Aghamohammadi@wellingtonwater.co.nz; Bruce Hodgins <bruce.hodgins@huttcity.govt.nz>
Subject: [EXTERNAL] RE: Manor Park - HCC & WWL meeting notes

Hi all

Has HCC and WWL has a chance to meet and discuss the interim potable water solution proposed by Vecta?

In terms of development being staged onsite (e.g. 5, 10, 15 years), this is unlikely. Once the site is able to be developed, this will progress in line with demand for the sites.

Cheers,
Alex

Alex Gifford | Senior Planner
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From: Alex Gifford
Sent: Friday, 29 April 2022 8:38 AM
To: mohammed.hassan@wellingtonwater.co.nz; Stephen Davis <Stephen.Davis@huttcity.govt.nz>; john.duggan@wellingtonwater.co.nz; Parvati Rotherham <Parvati.Rotherham@huttcity.govt.nz>; kate.pascall@huttcity.govt.nz; Rob Jack <rob.jack@vecta.co.nz>
Cc: Iman.Aghamohammadi@wellingtonwater.co.nz; bruce.hodgins@huttcity.govt.nz; Richard Burrell <richard@building-solutions.co.nz>
Subject: Manor Park - HCC & WWL meeting notes

Hi all

Thanks for your time earlier in the week to discuss the Manor Park site and potable water supply options. A summary of the call and next steps are outlined below.

If you would like to amend/add to these notes please let me know and I will update and recirculate.

Summary

- A private plan change (PPC) is being prepared to rezone the Manor Park site from General Rural Activity Area to General Business Activity Area. The intention for the site is to develop an industrial business park. The land is owned by Ngāti Toa Rangatira and the development will attract businesses to the Hutt District;
- As part of the preparation of the PPC, Vecta (previously 3WL) is investigating the feasibility of the development in terms of three waters servicing. Wastewater and stormwater are no issue, although Wellington Water has raised a lack of potable water supply as the existing potable supply network is over-subscribed for existing development within the water supply zone. The need for a new reservoir has been raised by WWL;
- Identifying a location, funding and building a new reservoir prior to development occurring onsite will result in significant programme delays;
- Vecta are proposing an interim solution to enable development onsite. Refer to the email attached for the full details. In summary, this includes onsite storage as an interim solution while a new reservoir is built to address the existing shortfall and additional needs of the proposed Manor Park development;
- Vecta and T+T are seeking direction from WWL and HCC on:
    - Whether an interim solution is acceptable while a new reservoir is built long term;
    - If developer contributions to a new reservoir are required, and an indication of what these may be;
- T+T would like to reach an agreement on a potable water supply system to the site prior to lodging the PPC in late July.

Next steps

- T+T to provide an indicative programme for development so WWL and HCC understand the expected rate of uptake onsite and therefore demand;
- Vecta to confirm storage requirements and provide flow testing results (attached);
- WWL to check if the 5.8 L/S trickle draw down from the existing potable water network will create any demand issues; and
- HCC and WWL to meet next week to discuss the Vecta proposal and to provide advice back to Vecta and T+T.

Cheers,
Alex

Alex Gifford | Senior Planner
BRP(hons), MNZPI
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Tonkin+Taylor

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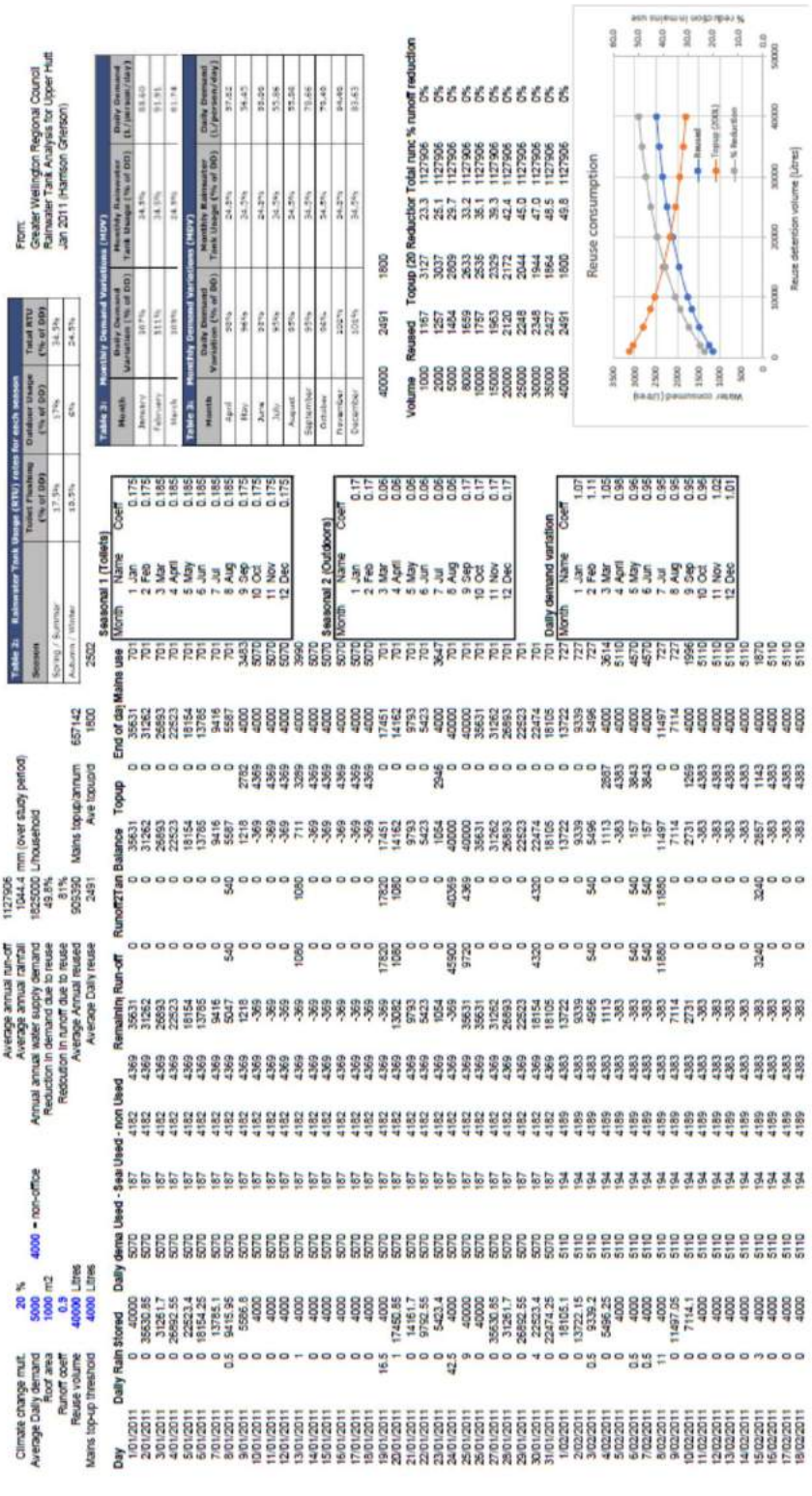
Appendix E. Water re-use example



From:
Greater Wellington Regional Council
Rainwater Tank Analysis for Upper Hutt
Jan 2011 (Ramson Gretson)

Table 2i: Rainwater Tank Usage (RTU) rates for each season

Seasons	Toilet Flushing (% of 99)	Outdoor Usage (% of 99)	Total RTU (% of 99)
Spring / Summer	17.5%	17%	34.5%
Autumn / Winter	18.5%	6%	24.5%

Climate change mult. 20 %
Average Daily demand 5000 4000 = non-office
Roof area 1000 m2
Runoff coeff 0.9
Reuse volume 40000 Litres
Mains top-up threshold 4000 Litres

Average annual run-off 1127906
Average annual rainfall 1044.4 mm (over study period)
Annual annual water supply demand 1825000 L/household
Reduction in demand due to reuse 49.8%
Reduction in runoff due to reuse 81%
Average Annual reused 909390 Mains top-up/annum 657142
Average Daily reuse 2491 Ave top-up/d 1800

Day	Daily Rain	Stored	Daily demand	Used - Seal	Used - non Seal	Remaining	Run-off	Runoff2tank	Balance	Topup	End of day	Mains use
1/01/2011	0	40000	5070	187	4182	4369	35631	0	35631	0	35631	701
2/01/2011	0	35630.86	5070	187	4182	4369	31262	0	31262	0	31262	701
3/01/2011	0	31261.7	5070	187	4182	4369	26893	0	26893	0	26893	701
4/01/2011	0	26892.55	5070	187	4182	4369	22523	0	22523	0	22523	701
5/01/2011	0	22523.4	5070	187	4182	4369	18154	0	18154	0	18154	701
6/01/2011	0	18154.25	5070	187	4182	4369	13785	0	13785	0	13785	701
7/01/2011	0	13785.1	5070	187	4182	4369	9416	0	9416	0	9416	701
8/01/2011	0.5	9415.95	5070	187	4182	4369	5047	540	5587	0	5587	701
9/01/2011	0	5586.8	5070	187	4182	4369	1218	540	1218	2782	4000	3483
10/01/2011	0	4000	5070	187	4182	4369	-369	0	-369	4369	4000	5070
11/01/2011	0	4000	5070	187	4182	4369	-369	0	-369	4369	4000	5070
12/01/2011	0	4000	5070	187	4182	4369	-369	0	-369	4369	4000	5070
13/01/2011	1	4000	5070	187	4182	4369	-369	1080	711	3289	4000	3990
14/01/2011	0	4000	5070	187	4182	4369	-369	0	-369	4369	4000	5070
15/01/2011	0	4000	5070	187	4182	4369	-369	0	-369	4369	4000	5070
16/01/2011	0	4000	5070	187	4182	4369	-369	0	-369	4369	4000	5070
17/01/2011	0	4000	5070	187	4182	4369	-369	0	-369	4369	4000	5070
18/01/2011	0	4000	5070	187	4182	4369	-369	0	-369	4369	4000	5070
19/01/2011	16.5	4000	5070	187	4182	4369	-369	17820	17451	0	17451	701
20/01/2011	1	17450.86	5070	187	4182	4369	13082	1080	14162	0	14162	701
21/01/2011	0	14161.7	5070	187	4182	4369	9793	0	9793	0	9793	701
22/01/2011	0	9792.55	5070	187	4182	4369	5423	0	5423	0	5423	701
23/01/2011	0	5423.4	5070	187	4182	4369	1054	0	1054	2946	4000	3647
24/01/2011	42.5	4000	5070	187	4182	4369	-369	45960	40369	0	40000	701
25/01/2011	9	40000	5070	187	4182	4369	35631	9720	45351	0	40000	701
26/01/2011	0	40000	5070	187	4182	4369	35631	0	35631	0	35631	701
27/01/2011	0	35630.85	5070	187	4182	4369	31262	0	31262	0	31262	701
28/01/2011	0	31261.7	5070	187	4182	4369	26893	0	26893	0	26893	701
29/01/2011	0	26892.55	5070	187	4182	4369	22523	0	22523	0	22523	701
30/01/2011	4	22523.4	5070	187	4182	4369	18154	4320	22474	0	22474	701
31/01/2011	0	22474.25	5070	187	4182	4369	18105	0	18105	0	18105	727
1/02/2011	0	18105.1	5110	194	4189	4383	13722	0	13722	0	13722	727
2/02/2011	0	13722.15	5110	194	4189	4383	9339	0	9339	0	9339	727
3/02/2011	0.5	9339.2	5110	194	4189	4383	4956	540	5496	0	5496	727
4/02/2011	0	5496.25	5110	194	4189	4383	1113	0	1113	2887	4000	3614
5/02/2011	0	4000	5110	194	4189	4383	-383	0	-383	4383	4000	5110
6/02/2011	0.5	4000	5110	194	4189	4383	-383	540	157	3843	4000	4570
7/02/2011	0.5	4000	5110	194	4189	4383	-383	540	157	3843	4000	4570
8/02/2011	11	4000	5110	194	4189	4383	-383	11680	11497	0	11497	727
9/02/2011	0	11497.05	5110	194	4189	4383	7114	0	7114	0	7114	727
10/02/2011	0	7114.1	5110	194	4189	4383	2731	0	2731	1269	4000	1996
11/02/2011	0	4000	5110	194	4189	4383	-383	0	-383	4383	4000	5110
12/02/2011	0	4000	5110	194	4189	4383	-383	0	-383	4383	4000	5110
13/02/2011	0	4000	5110	194	4189	4383	-383	0	-383	4383	4000	5110
14/02/2011	0	4000	5110	194	4189	4383	-383	0	-383	4383	4000	5110
15/02/2011	3	4000	5110	194	4189	4383	-383	3240	2857	1143	4000	1870
16/02/2011	0	4000	5110	194	4189	4383	-383	0	-383	4383	4000	5110
17/02/2011	0	4000	5110	194	4189	4383	-383	0	-383	4383	4000	5110
18/02/2011	0	4000	5110	194	4189	4383	-383	0	-383	4383	4000	5110

Table 2ii: Monthly Demand Variations (HUV)

Month	Daily Demand Variation (% of 60)	Monthly Rainwater Tank Usage (% of 60)	Daily Demand (Litres/person/day)
January	107%	24.5%	68.60
February	111%	24.5%	71.91
March	105%	24.5%	61.74

Table 2i: Monthly Demand Variations (HUV)

Month	Daily Demand Variation (% of 60)	Monthly Rainwater Tank Usage (% of 60)	Daily Demand (Litres/person/day)
April	90%	24.5%	37.52
May	94%	24.5%	34.45
June	93%	24.5%	35.06
July	95%	24.5%	55.84
August	95%	24.5%	55.84
September	93%	24.5%	78.66
October	92%	24.5%	75.46
November	102%	24.5%	84.46
December	102%	24.5%	83.63

Seasonal 1 (Toilets)		
Month	Name	Coeff
1	Jan	0.175
2	Feb	0.175
3	Mar	0.185
4	April	0.185
5	May	0.185
6	Jun	0.185
7	Jul	0.185
8	Aug	0.185
9	Sep	0.175
10	Oct	0.175
11	Nov	0.175
12	Dec	0.175

Seasonal 2 (Outdoors)		
Month	Name	Coeff
1	Jan	0.17
2	Feb	0.17
3	Mar	0.06
4	April	0.06
5	May	0.06
6	Jun	0.06
7	Jul	0.06
8	Aug	0.06
9	Sep	0.17
10	Oct	0.17
11	Nov	0.17
12	Dec	0.17

Daily demand variation		
Month	Name	Coeff
1	Jan	1.07
2	Feb	1.11
3	Mar	1.05
4	April	0.98
5	May	0.96
6	Jun	0.95
7	Jul	0.95
8	Aug	0.95
9	Sep	0.95
10	Oct	0.96
11	Nov	1.02
12	Dec	1.01

40000	2491	1800			

Volume	Reused	Topup	20 Reduction	Total runc	% runoff reduction
1000	1167	3127	23.3	1127906	0%
2000	1257	3037	25.1	1127906	0%
3000	1484	2809	29.7	1127906	0%
4000	1659	2633	33.2	1127906	0%
10000	1757	2535	35.1	1127906	0%
15000	1963	2329	39.3	1127906	0%
20000	2120	2172	42.4	1127906	0%
25000	2248	2044	45.0	1127906	0%
30000	2348	1944	47.0	1127906	0%
35000	2427	1864	48.5	1127906	0%
40000	2491	1800	49.8	1127906	0%

Appendix 10: Traffic Assessment Report – Stantec

Te Rangihaeata

Waste Management NZ Resource Recovery Park

Traffic Engineering Report

PREPARED FOR WASTE MANAGEMENT NEW ZEALAND | DECEMBER 2022

We design with community in mind

Stantec

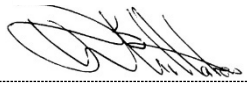
Revision schedule

Rev No	Date	Description	Signature of Typed Name (documentation on file)			
			Prepared by	Checked by	Reviewed by	Approved by
A	28/10/22	Draft	SJ	JW	MGG	MGG
B	19/12/22	Final	SJ	JW	MGG	MGG

This document entitled Te Rangihaeata Resource Recovery Park Traffic Engineering Report was prepared by Stantec New Zealand ("Stantec") for the account of Waste Management New Zealand (the "Client"). The material in it reflects Stantec's professional judgment in light of the scope, the Client's brief (if any) and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published. In preparing the document, Stantec may have relied on information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. No liability is accepted by Stantec or any employee or sub-consultant of Stantec with respect to its use by a third party.

Quality statement

Project manager	Project technical lead
Mark Georgeson	**Jamie Whittaker**

PREPARED BY Steven Jiang		15 / 11 / 2022
CHECKED BY Jamie Whittaker		13 / 12 / 2022
REVIEWED AND APPROVED FOR ISSUE BY Mark Georgeson		19 / 12 / 2022

Level 15, Stantec House, 10 Brandon Street, Wellington, 6110
P.O Box 13052 Armagh Christchurch 8141 New Zealand
Tel +64 4 381 6700
STATUS: Final | Project No 310204837

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1 Introduction

Waste Management New Zealand ("WMNZ") proposes to develop a new Resource Recovery Park on land sited between State Highway 2 ("SH2") and the Hutt Rail Line, in Manor Park. The proposal site (the "Site") is a portion of a larger property, for which an application to develop the parcel of land for use by three future tenancies has been made to Hutt City Council ("Council"). The proposed Resource Recovery Park will serve a number of functions including the repair and sale of second-hand goods, material recovery, as well as a waste transfer station. The facility will used by a combination of WMNZ and contractors' trucks, whilst the repair café, retail store and transfer station will be open to the public.

For context, this report should be read in conjunction with the 'Te Rangihaeata Tenancy Development[1]' Transportation Assessment Report ("Te Rangihaeata TAR"), which describes the proposed wider property development, its supporting transport infrastructure, and associated roading improvements in connecting to the external network at Manor Park Road. These works are subject to a separate resource consent application.

The purpose of this Traffic Engineering Report ("TER") is to set out and describe the Site-specific activities and operational arrangements for establishing the proposed Resource Recovery Park. In doing so, the TER sets out and describes the existing transport environment and proposed upgrades that form part of the wider Te Rangihaeata tenancy development consent application (described in more detail in the Te Rangihaeata TAR), the nature of the proposed WMNZ activity and associated trip generation (which forms a component of the traffic allowed for within the Te Rangihaeata TAR), the internal layout and traffic operation for the Site, and then provides an audit of the development against the key transport provisions of the City of Lower Hutt District Plan ("District Plan").

Overall, this TER concludes that the traffic effects and operation associated with the proposed WMNZ facility can be appropriately accommodated within the Site, and can be absorbed by the adjacent road network with the proposed roading upgrades in place, as set out in full in the Te Rangihaeata TAR .

[1] Stantec's 'Te Rangihaeata 'Tenancy Development' Transportation Assessment Report

2 Site Environment

2.1 Site Location

The WMNZ proposal Site is located at the southern end of the wider site, referred to as Te Rangihaeata, which is accessed via Benmore Crescent. **Figure 2-1** shows the location of the proposed Site in the context of the larger site and external road network.

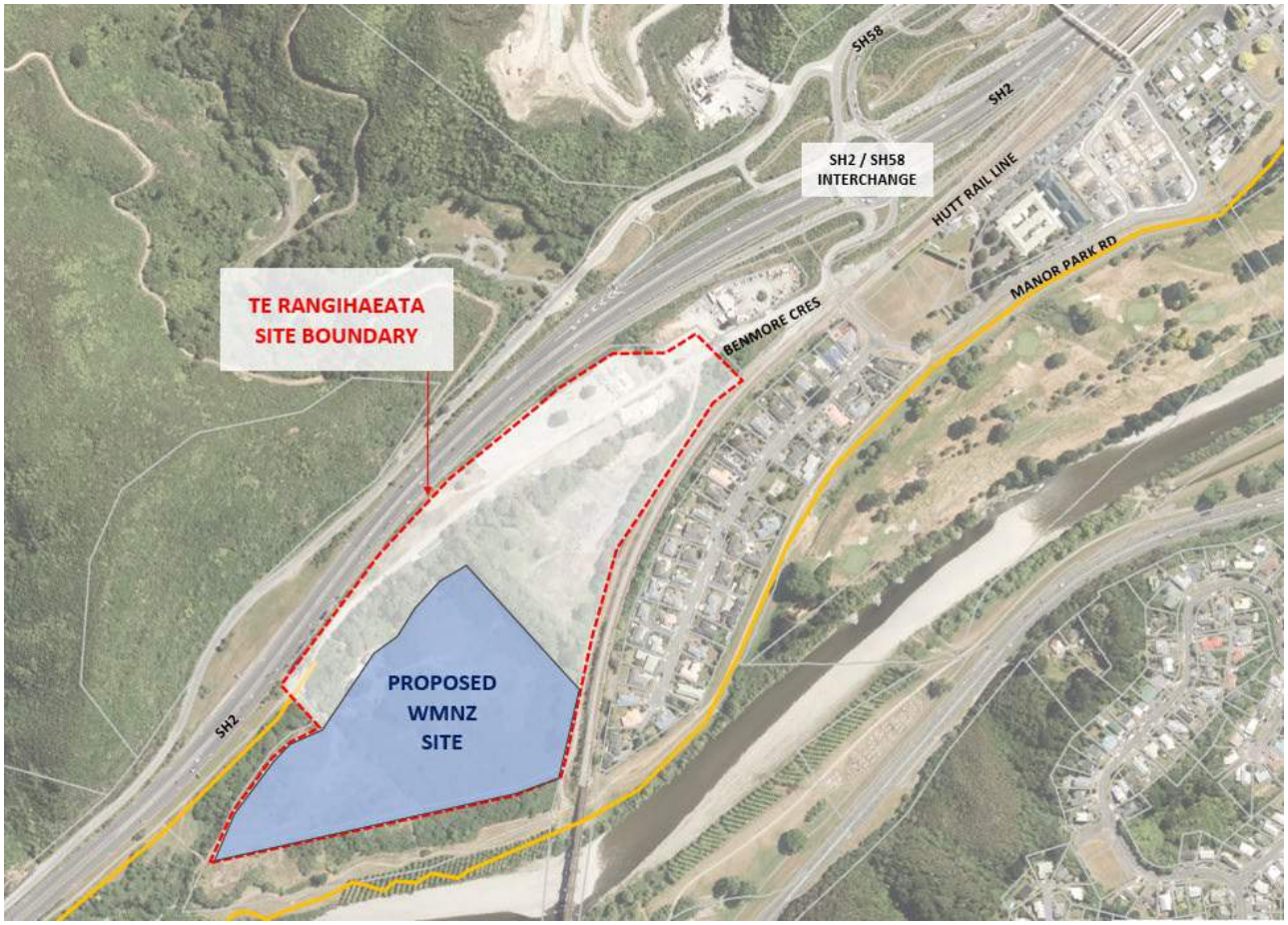


Figure 2-1 : Aerial Photograph of the Te Rangihaeata and WMNZ Proposal Site Extents

As shown, the development area is bounded by SH2 to the west and the Hutt Valley Rail Line to the east. Sole vehicle access to the development Site will be achieved via Manor Park Road / Benmore Crescent, and through the larger Te Rangihaeata site.

The northern extent of Manor Park Road connects with the SH2 / State Highway 58 ("SH58") grade separated interchange ("Interchange"), which affords access to the strategic / arterial road network. South of the interchange, Manor Park Road intersects with Benmore Crescent via a priority-controlled tee-intersection. Benmore Crescent itself is formed as a cul-de-sac, and under the proposed Te Rangihaeata Tenancy Development works is intended to extend southwards as a new common private road serving the new sites to be created, including the WMNZ Site.

The local roading arrangements are illustrated in the aerial photograph included at **Figure 2-2,** which shows the layout of the Benmore Crescent / Manor Park Road intersection adjacent to the Hutt Rail Line level crossing.

Figure 2-2 : Adjacent Roading Arrangements

Currently Benmore Crescent has a typical carriageway width of approximately 8-9m and, with the exception of the intersection with Manor Park Road, there is no kerb and channel or marked centreline. Downer Construction currently operate a yard immediately to the southwest of the intersection (evident in Figure 2-2), which is accessed from Benmore Crescent.

Benmore Crescent and its intersection with Manor Park Road and the adjacent rail level crossing are to be upgraded, as per the design detailed in the Te Rangihaeata TAR. If for some reason Council did not deem consent warranted to the wider site development, these upgrade works will form part of the preparatory works for the Resource Recovery Park.

2.2 Traffic Volumes

Further detail on the characteristics of the adjacent roads is summarised in **Table 2-1**.

Table 2-1 : Adjacent Road Characteristics

Characteristic	Manor Park Road	Benmore Crescent	State Highway 2[2]
Average Daily Traffic (ADT)	1,500	400	30,000
Road Hierarchy	Access Road	Access Road	Regional Road
Carriageway Width	9.2m	9m	20m
Speed Limit	50kph[3]	50kph	100 kph

As shown, traffic volumes on Manor Park Road include existing flows of 1,500 vehicles per day (“vpd”), whilst Benmore Crescent carries an estimated 400vpd. Such volumes are commensurate with the ‘Access Road’ classifications for each and represent the primary property access function they serve.

A survey of all vehicle movements at the Benmore Crescent / Manor Park Road intersection was undertaken to determine current traffic patterns in this location, as illustrated in **Figure 2-3** and **Figure 2-4** which show the AM and PM peak hour periods, respectively.

[2] SH2 at Haywards Interchange
[3] Some 15m east of the Level Crossing, Manor Park Road reduces to 40kph

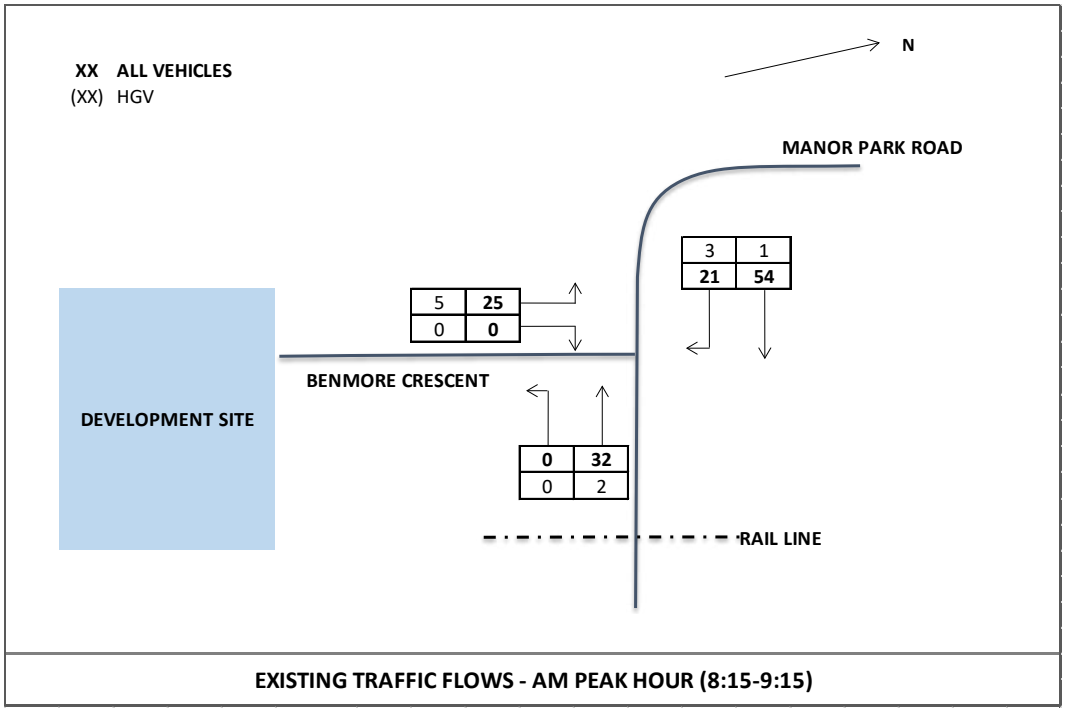


Figure 2-3 : Existing AM Peak Hour Traffic Flows

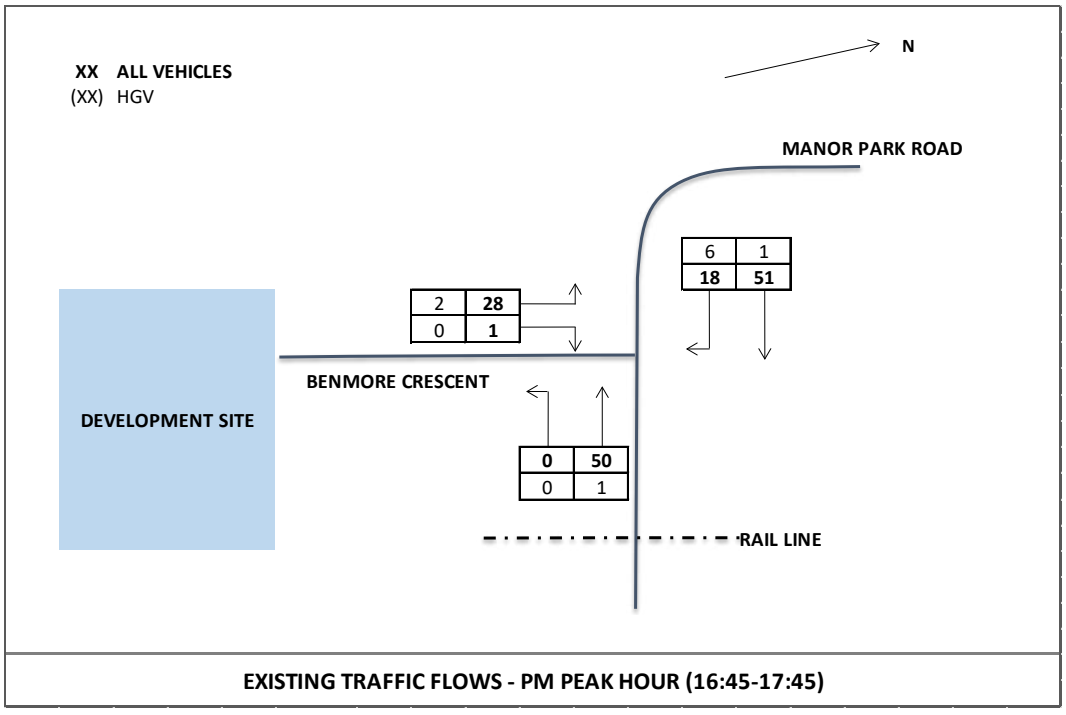


Figure 2-4 : Existing PM Peak Hour Traffic Flows

Traffic to and from Benmore Crescent is almost entirely associated with the existing Downer yard at present. As can be expected, almost all turning movements at Benmore Crescent are right turn in / left turn out trips to and from the Interchange.

2.3 Road Safety

A search of the Waka Kotahi NZ Transport Agency's 'Crash Analysis System' database has been undertaken for the purposes of reviewing the road safety in the vicinity of the site. The search area included Manor Park Road from the Interchange to 50m past the rail crossing inclusive of the Benmore Crescent intersection, for the most recent complete five-year period (2017-2021), plus available data for 2022.

Only one reported crash has been recorded in the search area and period, involving a vehicle turning into Manor Park Road off the Interchange losing control and colliding with the edge safety barrier. The crash was recorded as non-injury (i.e., damage only).

The crash record does not indicate there are any existing safety issues on the immediate road network in the vicinity of the Manor Park Road / Benmore Crescent intersection that provides access to the Site.

2.4 Sustainable Transport

While there is no direct connection to the bus network, the Site has good access to the key public transport train services on the Hutt Valley Line via the nearby Manor Park rail station. In this regard, the proposed upgrading of Manor Park Road and Benmore Crescent will provide a fully connected walking route between the Site and Manor Park station. This, in combination with the established shared path connections which link with the suburbs to the south and to the north (via the recently completed connection to Silverstream bridge), provide good opportunities for staff to travel to/from the Site by means other than private car.

3 Proposed Development

The proposal plans provide for the establishment and operation of a Resource Recovery Park. The proposal will replace an existing WMNZ site currently operating out of Seaview and offer a greater range of services. The development Site encompasses a total area of approximately 57,800m² and will include waste recovery, processing, waste transfer, and recycling activities. A repair café and second-hand goods store is also proposed. The components of the development will include:

- Entry / exit weighbridges and kiosk / gatehouse;
- 'Construction and demolition' materials handling facility;
- 'Refuse transfer station', open to both public and commercial customers;
- Recycling centre (drop-off area and retail shop);
- Bin /skip storage & repair area;
- Office & staff amenities building (55 staff workstations);
- Parking:
    - staff carparking = 145 spaces (to accommodate 55x office staff and 90x truck drivers) inclusive of 20x EV charging spaces and allocated mobility parks. This assumption allows for a worst-case scenario of all 145 staff driving independently to the Site, although in practice it is reasonable to assume parking demands will be less;
    - truck parking = 80 marked spaces (70x medium rigid truck parks and 10x truck and trailer parks) inclusive of 25x EV chargers 'plus' additional hardstanding;
    - cycling parking; and
- Separate 'truck' and 'bin' wash bays;
- Materials Recovery Facility' for the separation / recovery of materials in waste / recyclable streams;
- Workshop for maintenance of WMNZ trucks, including staff office and amenities;
- 2x 'Waste compactors'; and
- Additional EV chargers for truck parks provided in Stage 1.

The proposed Site development plans are included at **Appendix A** .

The Site is expected to operate between the hours of 6am and 7pm, Monday to Sunday. A small number of heavy vehicles (likely to be less than 5) will travel to the Site at night.

As shown within the proposal plans, the various on-site activities are purposefully distributed across the Site to ensure adequate circulation space is provided to accommodate safe and practicable manoeuvring of the larger vehicles that will visit the Site. In this regard, a clear wayfinding strategy will be developed post consent to safely direct public, private and WMNZ vehicles to the relevant locations within the Site. Further detail on the general internal arrangements is provided at Chapter 5, noting that a Traffic Management Plan ("TMP") will be prepared to manage traffic within the Site.

As described earlier, access to the Site will be achieved via the local road network of Manor Park Road and Benmore Crescent, this latter in turn being extended southwards as a new private road. Both the new private Te Rangihaeata road and Benmore Crescent are to be upgraded to a standard commensurate with their future function in accommodating development traffic. As such, each have been designed with regard to the industry standard NZS4404:2010 'Land Development and Subdivision Infrastructure' ("NZS4404") road type 'E17', to provide an 8.4m wide carriageway and footpath on the eastern side of the road.

In addition, the roading improvement works proposed as part of the wider Te Rangihaeata development include upgrading of the Benmore Crescent / Manor Park Road intersection, to provide a new right turn bay provision for traffic entering Benmore Crescent, along with provision of formal pedestrian route over the adjacent level crossing that will provide a safe and continuous footpath connection between the Site and Manor Park rail station.

These improvements, which are detailed further in the Te Rangihaeata TAR, will ensure the associated transport demands generated at the WMNZ Site and wider development activities can be safely and appropriately accommodated.

4 Site Traffic Generation

4.1 Traffic Generation

Details of the anticipated Site traffic generation have been provided by WMNZ, based on measured demands captured at established WMNZ facilities in Seaview[4].

Once the Site is fully developed, (2024) it is anticipated it would generate in the order of 600 vehicle trips per day (300 in and 300 out). Allowing for future growth, it is forecast that traffic generation would reach approximately 870 vehicle trips per day (435 in and 435 out) by 2040, depending on the growth and demand for refuse and waste management services. **Table 4-1** summarises the trip generation forecasts associated with the various component demands.

Table 4-1 : Forecast Development Site Traffic Generation

Movement type	Vehicle(s)	Movements 2024	Movements 2040	Note
WMNZ – Office Staff	Light	34	50	Office based staff. On-site between 06:00-18:00 approx.
WMNZ – Operational Staff	Light	15	20	Workshop and processing staff. On-site between 06:00-1800 approx.
WMNZ Drivers	Light	55	80	-
Kerbside Collection and Commercial Customers	Heavy	145	210	Collection vehicles serving Hutt City and Porirua Councils, deliveries from commercial and other WMNZ customers
Internal Trucks to Landfill	Heavy	15	25	Hauling consolidated waste to landfill truck and trailer units
Other Hauling Operations	Heavy	100	145	Trucks currently tipping at other disposal sites instead tipping here for sorting / distribution of sorted materials to other destinations
WMNZ Trucks	Heavy	60	80	For overnight parking
General Public	Light	160	225	Light vehicles and trailers. General refuse and garden / green waste 07:00-17:00
Deliveries, Support vehicles and Visitors	Mostly Light	20	35	Office visitors, plus maintenance/ support deliveries, fuel deliveries etc
Total	**-**	**604**	**870**	-

This traffic volume would be spread over the course of the operating day, which is from 6am to 6pm Monday to Friday. Movements on Saturday and Sunday will be less and will involve primarily members of the public. Peak traffic generation periods for the Site will occur on weekdays in the early morning when drivers arrive to collect their vehicles and depart in trucks (either for refuse collection or distribution of sorted waste etc.), which will overlap with arrival of office and operational staff, and then again at the end of the day when trucks return and drivers depart in their own vehicles.

It is estimated that approximately 15-20% of the total daily movements would occur within the Site's AM peak hour, translating to around 90 to 120 movements initially.

4.2 Intersection Assessment

With all traffic associated with the WMNZ Site connecting with the wider road network via the Benmore Crescent / Manor Park Road intersection, detailed analysis of this tee-intersections performance with both the proposed upgrades in place and full Te Rangihaeata tenancy development traffic (including the forecast WMNZ traffic additions described above) has been undertaken, using the industry recognised SIDRA intersection analysis software. This analysis is described in detail in the Te Rangihaeata TAR, which is attached for reference at **Appendix B** .

[4] At 97-99 Port Road and 27 Seaview Road

By way of providing a summary here, SIDRA models have been created for the 'base' (existing traffic volumes as shown earlier in Figure 2-3 and Figure 2-4) and the forecast full development of the wider site (described in the Te Rangihaeata TAR), including the WMNZ Site. This development traffic scenario has been modelled with the intersection improvements works described in Chapter 3 and the Te Rangihaeata wider site tenants in place.

The SIDRA software has a number of indicators of the expected performance of the intersection including the following: Level of Service[5] (LoS), based on delay to motorists, graded A (excellent performance) to F (poor performance); and Average delay (seconds / vehicle), defining delay to the typical motorist.

The resultant LoS and delays by each approach is set out in **Table 4-2** and **Table 4-3**, for the weekday AM and PM peak hours, respectively. These tables mirror the same included at Section 8 of the Te Rangihaeata TAR.

Table 4-2 : SIDRA Traffic Modelling Summary AM Peak

Approach	Movement	Base		Development*	
		Delay (s)	LOS	Delay (s)	LOS
Manor Park Road (North)	Through	-	A	-	A
	Right	4.8	A	4.9	A
Benmore Crescent	Left	4.9	A	5.1	A
	Right	6.4	A	11.5	B
Manor Park Road (South)	Left	3.0	A	3.0	A
	Through	-	A	-	A

**2040 & Intersection Improvement Works in place*

Table 4-3 : SIDRA Traffic Modelling Summary PM Peak

Approach	Movement	Base		Development*	
		Delay (s)	LOS	Delay (s)	LOS
Manor Park Road (North)	Through	0.1	A	-	A
	Right	5.1	A	5.4	A
Benmore Crescent	Left	4.8	A	4.8	A
	Right	6.5	A	11.6	B
Manor Park Road (South)	Left	3.0	A	3.0	A
	Through	-	A	-	A

**2040 & Intersection Improvement Works in place*

The above analysis confirms Site observations that the intersection is currently operating well at LoS A on all approaches and turning movements during both the AM and PM peak hours, and will continue to perform well at equivalent Levels of Service under the proposed site traffic scenario, with no material change to delay or queuing.

Overall, the assessment shows that with full development of the Site to accommodate the proposed Resource Recovery Park and occupation of the wider site (as descried in the Te Rangihaeata TAR), the intersection improvements as proposed will provide adequate capacity at the immediate connection to the external network to accommodate the

[5] Level of Service (LOS) is a six-level grading system for intersection performance (A to F), where Level A represents totally uncongested operation with minimal delays and queues, and Level F represents highly congested operation with long delays and extensive queuing.

forecast development traffic, whilst maintaining good Levels of Service. With little delay or any associated queuing at the Site access intersection there will be will no knock-on effects of development traffic on the adjacent Interchange, which is expected to continue to perform well, as confirmed by Waka Kotahi.

5 Internal Site Design

5.1 Site Layout and Operation

It is understood that all vehicles arriving to the Site to deliver refuse or collect processed waste will need to be weighed on arrival. In this manner, the weighbridge has been sited well inside the entrance, to allow for any occasional queuing that may occur from vehicles arriving together to be accommodated internal of the Site, and clear of the external private road. Staff vehicles, which will account for the majority of trips in the AM and PM peaks, will not need to be weighed and will therefore bypass the weighbridge.

Once inside the WMNZ Site, vehicles will be directed (via signage and road markings) to the respective activities, with access to restricted areas (i.e. non-public) managed by gates/barrier arms. A number of dedicated heavy vehicle turning areas are provided within the Site (as shown in the proposal plans included at **Appendix A**) which will be clearly demarcated, to avoid drivers attempting inappropriate turning manoeuvres close to buildings and structures or near key through traffic or pedestrian routes.

As the Site will accommodate heavy vehicles as well as a variety of loading operations and associated plant, an internal Traffic Management Plan ("TMP") will be developed for the facility post consent, to manage the internal movement of vehicles, equipment and personnel, and to ensure appropriate safety measures are employed to mitigate conflict (particularly between pedestrians and vehicular traffic).

Where possible, parking locations have been provided close to buildings where there is a short and safe walk to offices or other work areas.

5.2 Parking

Recent changes to the National Planning Framework and District Plan have removed specific requirements to provide a minimum number of on-site car parks to support new developments. Accordingly, there is no specific requirement to provide car parking for the proposed Resource Recovery Park.

Notwithstanding, the proposal plans include provision for a total of 145 on-site parking spaces to accommodate office and operational staff, and parking for private vehicles associated with the 90 truck drivers that will operate from the Site. This proposed Site parking provision will adequately accommodate the anticipated demand, allowing for all associated vehicles to be contained on-site and without the need to rely on the external kerbside parking along the private road.

The District Plan notes that car parking facilities and spaces must comply with the requirements of the nationally recognised standard AS/NZS2890.1:2004 Parking facilities Part 1: Off-street Car Parking (NZS2890.1). Noting the ample space available within the Site, parking areas will be able to satisfy the design requirements in terms of parking stall and manoeuvre dimensions.

Where parking is provided within a site, the District Plan requires a minimum allocation of accessible parks, and for these to be designed in accordance with the industry standard 'NZS4121:2004 Design for Access and Mobility – Buildings and Associated Facilities ("NZS4121"). With the 145 total parks proposed, at least 4 accessible car parks must be provided to satisfy NZS4121. Provision for this number of parks can be suitably accommodated with these spaces marked in accordance with the dimension requirements and located close to building entrances.

In addition to light vehicle parking, the nature of the proposed Resource Recovery Park means it will generate parking demand for approximately 80 trucks. Provision for this quantum of truck parking has been included in the development plans, with these parks designed to an appropriate length to accommodate the mixture of rigid and 'truck and trailer' truck types that will operate from the Site.

The District Plan sets out the requirement for minimum cycle parking at Chapter 14, Standard 4 (e) based on the number of staff on-site at any given time. In this manner, 1 cycle park for every 10 staff members is required to satisfy the standard, meaning a total of 15 cycle parks are needed for the 145 total staff anticipated to be employed by the WMNZ operations. This provision can be comfortably met, as can the specific requirements around position and standard of the cycle stands/facilities, to be detailed further post consent.

5.3 Loading and Servicing

The District Plan specifies a minimum loading and servicing bay provision based on the development site's Gross Floor Area ("GFA"). The WMNZ proposal plans indicate a 10,625m² total Site GFA (combined Stages 1 and 2), leading to a requirement for 1 loading space capable of accommodating Heavy Goods Vehicles (HGVs).

The nature of the proposed WMNZ facility is such that multiple (un)loading operations will be undertaken at the various activities included at the Site, and as such the servicing arrangements have been designed to accommodate these activities in an efficient and safe manner, which far exceed the minimum District Plan requirement. Accordingly,

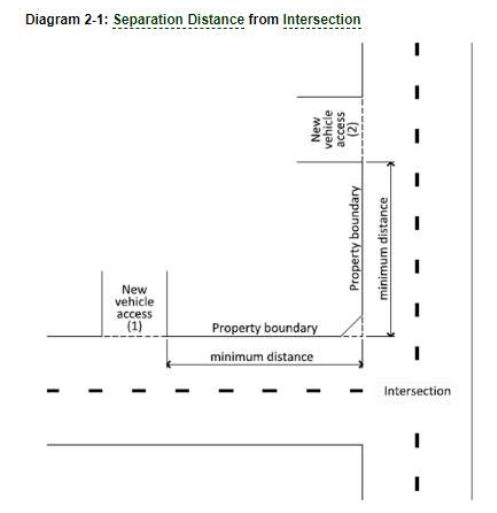
dedicated (un)loading areas are provided across the facility, involving a mixture of internal ‘drive-through’ and external loading bays sized to accommodate the respective vehicles anticipated to be using them. In addition, adequate manoeuvring space is included within the Site in the form of dedicated ‘turning areas’, as illustrated by the proposal plan included at **Appendix A** .

6 District Plan Compliance

An assessment of the development proposal's compliance with the relevant transport rules and standards of the District Plan has been undertaken, as set out in **Table 6-1** below to add context to the assessment of traffic effects.

Table 6-1 : District Plan Transport Provisions Compliance Assessment

Reference	Rule / Standard	Assessment of Compliance
Chapter 14 General Rules		
14A Transport		
14A 5.1 (a)	Any activity is permitted if it: I. Complies with the standards listed in Appendix Transport 1; and II. Does not exceed the high trip generator thresholds identified in Appendix Transport 2	Refer to assessment of Appendix Transport 1 – Standards compliance below. **Does not Comply**. The proposed development triggers the high trip generator standard.
14A 5.1 (b)	Any activity is that does not comply with the standards listed in Appendix Transport 1 is a Restricted Discretionary Activity. Discretion is restricted to: I. The effects of the standard(s) not being met.	Refer to assessment of Appendix Transport 1 – Standards compliance below.
14A 5.1 (c)	Any activity that exceeds the high trip generator thresholds specified in Appendix Transport 2 is a Restricted Discretionary Activity. Discretion is restricted to: I. The effects of the activity on the transport network including impacts on on-street parking. An integrated Transport Assessment, prepared by a suitably qualified traffic engineer/planner, must be submitted within any resource consent application under this rule.	Since the proposed WMNZ plans provide for an Industrial Activity involving >5,000m² GFA, it is considered a High Trip Generator, and this TER (and the associated Te Rangihaeata TAR) has been prepared accordingly to assess traffic and transport related impacts associated with the new development proposal.
Chapter 14A Transport – Appendix Transport Standards		
Standard 1	Standards for New Roads	
	(b) Engineering Standards All roads must be designed and constructed in accordance with NZS4404:2010 Land Development and Subdivision Infrastructure.	**Technical Non-Compliance.** The proposed upgrading to Benmore Crescent and new Te Rangihaeata site road have been designed to meet the standards set out in NZS4404 in terms of carriageway width, as described at Chapter 3 (and within the Te Rangihaeata TAR). Given the proposed lots will only front the eastern side of the road, a footpath is proposed on this side only, rather than on both sides as envisaged by NZS4404. The road and footpath design proposed have been developed in collaboration with the Council.
Standard 2	Site Access and Manoeuvring Area	
	(a) Vehicle Access (excluding separation distances from intersections) No more than two separate crossings for any front site. The total width of such crossings must not exceed 50% of the road frontage. There must be a separation distance of at least 1 meter between crossings measured at the kerb / carriageway edge.	**Complies.** The proposed WMNZ Site will be served by a single (two-way) vehicle access connecting off the southern end of the proposed new Te Rangihaeata private road. **Complies.** No other vehicle crossings are proposed within 1m of the development Site access.

Reference	Rule / Standard	Assessment of Compliance
	Site access must be designed and constructed in accordance with Section 3 of AS/NZS2890.1:2004 Parking facilities Part 1: Off-street car parking.	**Can Comply**. The proposed Site access can be designed to achieve the requisite dimension, gradient and formation standards of AS/NZS2890.1.
	(b) Separation Distances from Intersections and Rail Level Crossings. The distance between new vehicle accesses and all intersections must be at least: • National or Regional: 30m • Arterial or Primary Collector: 20m • Secondary Collector: 15m • Access Road: 10m The distance between new vehicle accesses and all rail level crossings must be at least 30m. These distances are to be measured between the intersecting points of the site boundaries as shown in Diagram 2-1 below, and also apply to new vehicle accesses on the opposite side of the road from an intersection.  	**Complies.** There are no road intersections within 10m of the Site access. **Does not Apply.** There are no level crossings in the vicinity of the proposed Site access.
	(c) Manoeuvring Area Sufficient area must be provided for vehicles to stand and queue and make all necessary manoeuvres without using the public road reserve, and without using the area provided for parking, servicing, loading or storage purposes. Sufficient area must be provided to allow all vehicles to enter and exit the site in a forward direction except where the access is to a single dwelling and accesses an Access, Secondary Collector or Primary Collector Road.	**Complies.** As demonstrated within the proposal plans, the development includes sufficient on-site manoeuvring area to allow all vehicles including larger trucks, to turn on-site, without using areas set aside for parking loading or storage. **Complies.** All vehicles will be able to turn on-site, and therefore enter and exit in a forward direction to and from the external private road.
Standard 3	Minimum Sight Distances at Railway Level Crossings.	
	(a) Minimum Sight Distances at Railway Level Crossings New buildings, structures and activities that would obstruct drivers seeing approaching trains must be designed, located and constructed in accordance with New Zealand Transport Agency Traffic Control Devices Manual 2008, Part 9	**Does not Apply.** The nearest railway crossing to the development Site is on Manor Park Road; no site structures or activities will obstruct sightlines of drivers at the level crossing, noting the Benmore Crescent / Manor Park Road improvements works

<table>
<tr><th>Reference</th><th>Rule / Standard</th><th>Assessment of Compliance</th></tr>
<tr><td></td><td>Level Crossings and the Australian Level Crossing Assessment Model (ALCAM).</td><td>proposed as part of the Te Rangihaeata site will improve safety at the existing rail crossing.</td></tr>
<tr><td>Standard 4</td><td>Car and Cycle Parking and End of Trip facilities</td><td></td></tr>
<tr><td></td><td>(b) Off-street parking for People with Disabilities
Off-street car parking for people with disabilities must be provided in accordance with Section 5 of the NZS 4121:2004 Design for Access and Mobility – Buildings and Associated Facilities.</td><td>Can Comply.
Provision of at least 4 accessible car parks can be provided on-site, with these designed to meet the dimension and marking requirements of NZS4121.</td></tr>
<tr><td></td><td>(d) Car Parking Design Standards.
Car parking spaces and facilities must comply with the requirements of AS/NZS 2890.1:2004 Parking Facilities Off-street car parking.</td><td>Can Comply.
Parking spaces will be marked to comply with the dimension requirements of AS/NZS2890.1 and will be formed to an appropriate surface.</td></tr>
<tr><td></td><td>(e) Cycle Parking and End of Trip Facilities
For all activities in new buildings and developments (including the redevelopment of existing buildings), cycle parking and showers must be provided in accordance with the minimums stated in Table 4-2.

Table 4-2: Minimum Cycle Parks and Showers
<table>
<tr><th>Number of Staff Members</th><th>Number of Cycle Parks</th><th>Number of Showers</th></tr>
<tr><td>1-5</td><td>0</td><td>0</td></tr>
<tr><td>6-10</td><td>1</td><td>1</td></tr>
<tr><td>10 or more</td><td>1 per 10 staff members</td><td>1 per 100 staff members</td></tr>
</table>
* The number of staff members is the maximum number of full or part time staff members on the site at any one time.</td><td>Can Comply.
The 145 staff expected on-site triggers a need for 15 on-site cycle parks, which can be readily provided along with a minimum of 2 showers. The cycle parks will be designed as per requirements stated under Standard 4(e).</td></tr>
<tr><td>Standard 5</td><td>Loading and Unloading</td><td></td></tr>
<tr><td></td><td>a) Loading and Unloading Requirements for Non-Residential Activities.
For non-residential activities the number of loading spaces to be provided on-site must not be less than that shown in Table 5-1.
Table 5-1: Minimum Loading Space Requirements
<table>
<tr><th>Gross Floor Area</th><th>Number of Spaces</th><th>Minimum Design Vehicle</th></tr>
<tr><td>Up to 500m^2</td><td>Nil</td><td>-</td></tr>
<tr><td>501 - 1000m^2</td><td>1</td><td>Small Rigid Vehicle</td></tr>
<tr><td>1001 - 3000m^2</td><td>1</td><td>Medium Rigid Vehicle</td></tr>
<tr><td>Greater than 3000m^2</td><td>1</td><td>Heavy Rigid Vehicle</td></tr>
</table>
Loading facilities must be designed, constructed, and maintained in accordance with AS 2890.2:2002 Parking facilities Part 2: Off-street commercial vehicle facilities, based on the minimum vehicle design stated in Table 5-1.</td><td>Complies.
The development proposal includes >5,000m GFA of industrial activity, and therefore is required to provide a loading bay capable of accommodating a Heavy Rigid Vehicle.
The proposal plans include a number of on-site (un)loading areas designed to accommodate a variety of service vehicles (including HGVs and truck trailer units) that will visit the site, to match anticipated requirements and growth forecasts.</td></tr>
</table>

As shown, the proposal plans align well with the traffic and transport provisions of the District Plan in satisfying the relevant standards, noting that the proposed design for the Benmore Crescent and Te Rangihaeata site private road extension deviates from the NZS4404 typology in only providing a footpath on one side of the road (rather than two). This is considered appropriate since development sites will only front the roads eastern side (noting the only site to the west is separated from the road by an established stream), with these arrangements having been developed in collaboration with the Council.

Since the development plans provide for an industrial activity involving >5,000m² GFA, the proposal triggers the High Trip Generator Threshold under Rule 14A 5.1(c), and as such the preparation of a Transport Assessment is required to examine any traffic and parking impacts that may be generated by the development on the adjacent road network. This TER (and related Te Rangihaeata TAR) has been prepared to examine and describe the traffic operation of the proposed WMNZ development and its associated impacts on the adjacent transport network, and concludes the associated demands can be safely and appropriately accommodated with the proposed Te Rangihaeata roading infrastructure and associated improvements in place at the Manor Park Road intersection.

7 Conclusion

Waste Management New Zealand ("WMNZ") proposes to develop a new waste handling and processing facility on one of the sites to be created from a consent application to establish three separate tenancies across the wider site referred to as 'Te Rangihaeata'.

The proposed WMNZ Resource Recovery Park will serve a number of functions including as a waste transfer station and recycling processing operation and will be used by a combination of WMNZ and contractors' trucks, as well as accommodating some public visits.

Access to the Site is proposed via a new private road that will be developed through the wider Te Rangihaeata site connecting off Benmore Crescent, with both these roads developed to a standard suitable for accommodating the full Te Rangihaeata traffic. The roading infrastructure will also provide a continuous footpath connection between the Site and the Manor Park rail station, as well as providing access to the adjacent Hutt River (walking and cycling) Trail.

The scale of traffic generated by the proposed facility (which draws from existing vehicle movement data at other established WMNZ sites), involves existing volumes of approximately 600 vehicles per day, with these volumes forecast by WMNZ to increase to 870vpd by 2040. An assessment of the impacts of these development trips on the adjacent Benmore Crescent / Manor Park Road tee-intersection shows that development Site traffic (plus traffic associated with the full build-out of the Te Rangihaeata site) can be adequately accommodated, with the roading upgrades proposed as part of the Te Rangihaeata transport infrastructure works.

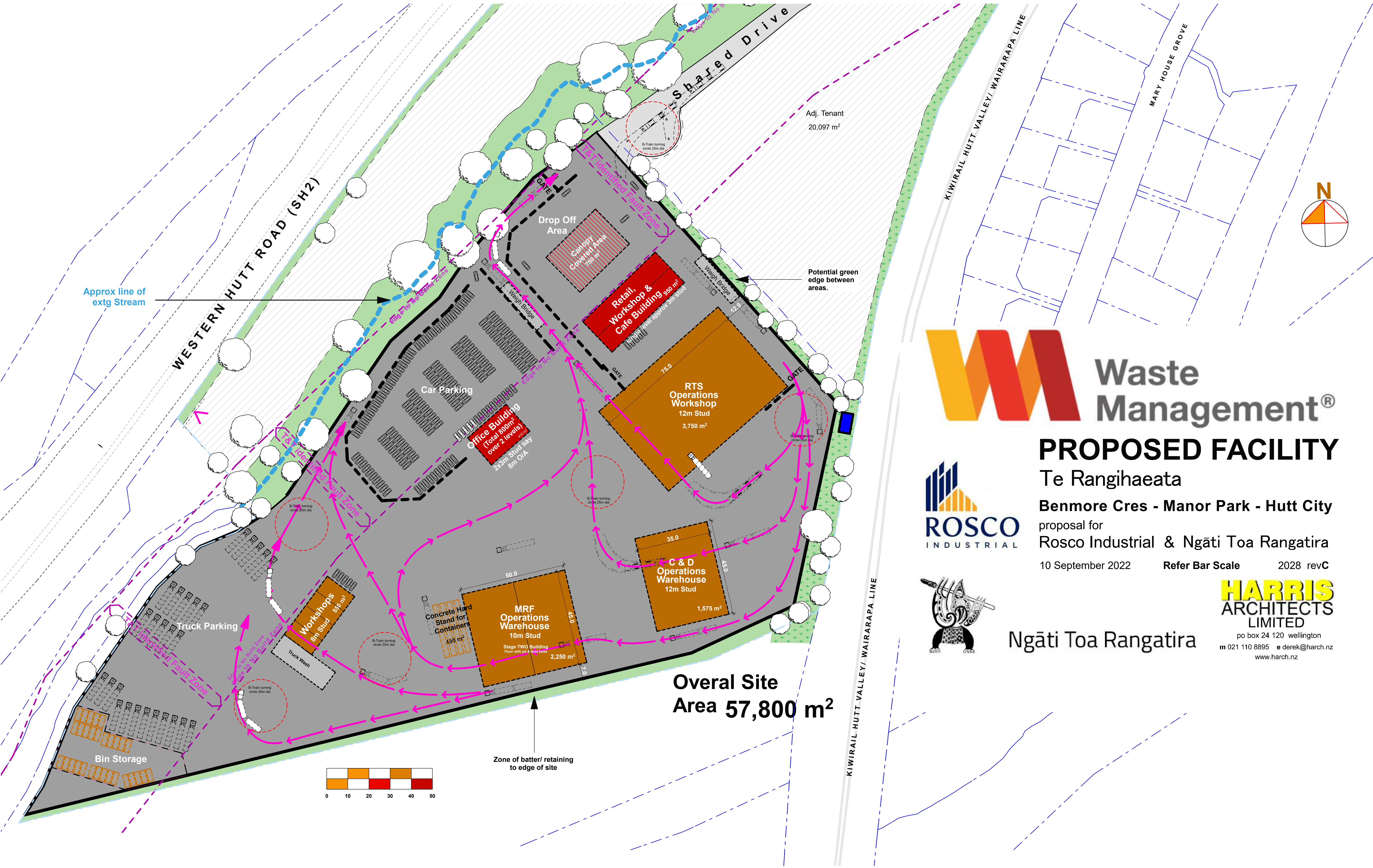
The level of parking proposed at the Site will fully accommodate demands generated by the various on-site activities, without the need to rely on kerbside parking external to the Site.

Overall, it is assessed that there is no traffic engineering reason which would preclude the granting of consent for the proposed development.

Appendices

We design with community in mind

Appendix A Proposed WMNZ Site Layout



Waste Management®
PROPOSED FACILITY
Te Rangiheaeata
Benmore Cres - Manor Park - Hutt City
proposal for
Rosco Industrial & Ngāti Toa Rangatira
10 September 2022
Refer Bar Scale
2028 revC
ROSCO INDUSTRIAL
Ngāti Toa Rangatira
HARRIS ARCHITECTS LIMITED
po box 24 120 wellington
m 021 110 8895 e derek@harch.nz
www.harch.nz
Overal Site Area 57,800 m2
WESTERN HUTT ROAD (SH2)
Shared Drive
KIWIRAIL HUTT VALLEY/ WAIRARAPA LINE
MARY HOUSE GROVE
Approx line of extg Stream
Adj. Tenant 20,097 m2
Potential green edge between areas.
Zone of batter/ retaining to edge of site
Drop Off Area
Canopy Covered Area 750 m2
Retail, Workshop & Cafe Building 950 m2
RTS Operations Workshop 12m Stud 3,750 m2
Office Building (Total 800m2 over 2 levels) 2x3m Stud say 8m O/A
Car Parking
Weigh Bridge
GATE
C & D Operations Warehouse 12m Stud 1,575 m2
MRF Operations Warehouse 10m Stud 2,250 m2
Stage TWO Building
Concrete Hard Stand for Containers 450 m2
Workshops 8m Stud 550 m2
Truck Wash
Truck Parking
Bin Storage
Identified Fault Zone
Edge to No Build Zone
B-Train turning circle 25m dia
N
0 10 20 30 40 50

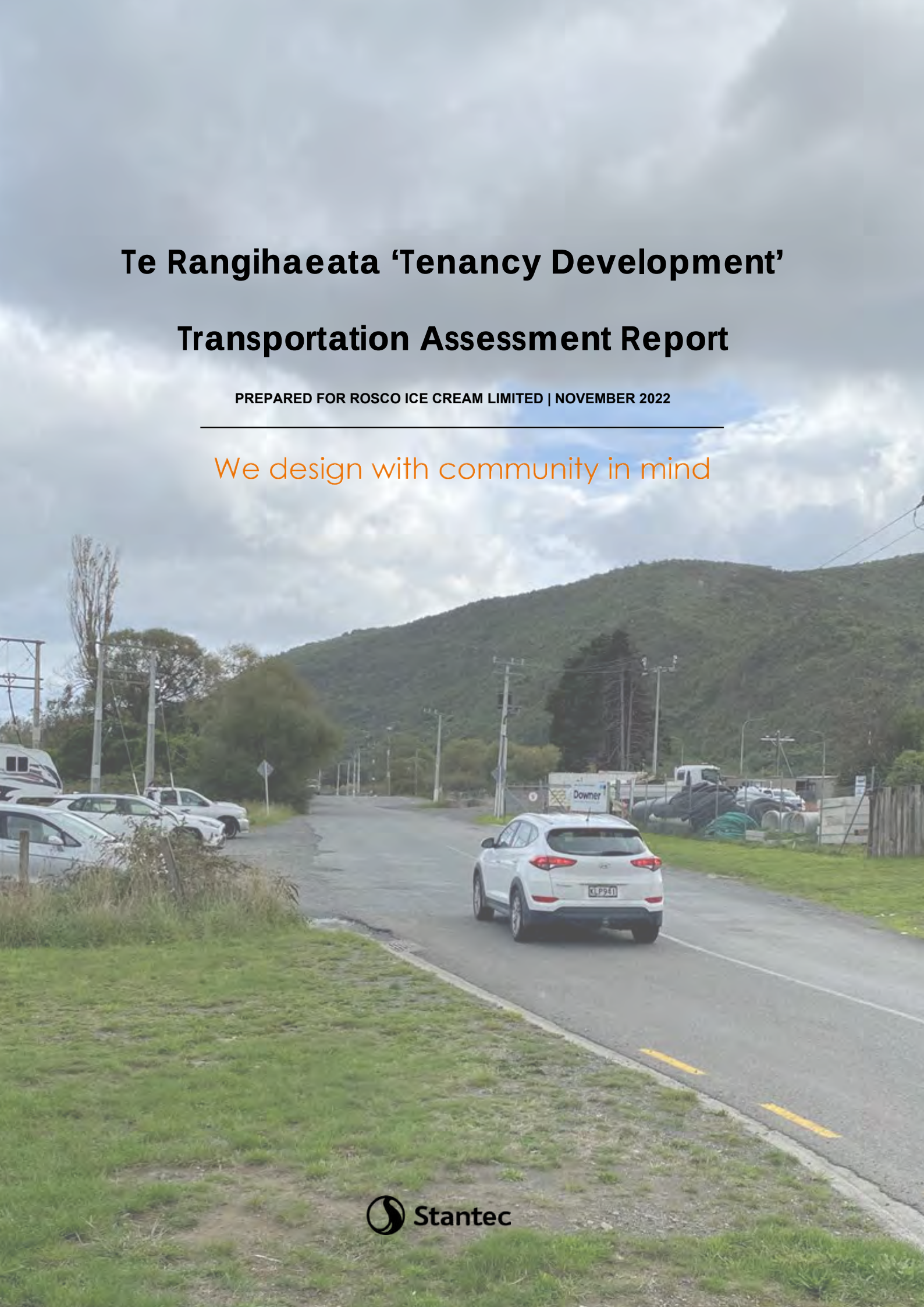
Appendix B Te Rangihaeata 'Tenancy Development' Transportation Assessment Report

Te Rangihaeata 'Tenancy Development'

Transportation Assessment Report

PREPARED FOR ROSCO ICE CREAM LIMITED | NOVEMBER 2022

We design with community in mind



Stantec

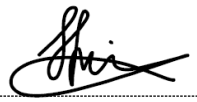
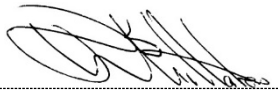
Revision schedule

Rev No	Date	Description	Signature of Typed Name (documentation on file)			
			Prepared by	**Checked by**	**Reviewed by**	**Approved by**
0	26/10	Draft for Comment	SJ	JW	MGG	MGG
1	15/12	Final	SJ	JW	MGG	MGG

This document entitled 'Te Rangihaeata Tenancy Development Transportation Assessment Report' was prepared by Stantec New Zealand ("Stantec") for the account of Rosco Ice Cream Limited (the "Client"). The material in it reflects Stantec's professional judgment in light of the scope, the Client's brief (if any) and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published. In preparing the document, Stantec may have relied on information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. No liability is accepted by Stantec or any employee or sub-consultant of Stantec with respect to its use by a third party.

Quality statement

Project manager	Project technical lead
Cobus De Kock	**Mark Georgeson**

PREPARED BY Steven Jiang		26 / 10 / 2022
CHECKED BY Jamie Whittaker		15 / 12 / 2022
REVIEWED AND APPROVED FOR ISSUE BY Mark Georgeson		15 / 12 / 2022

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P.O Box 13-052, Armagh, Christchurch 8141

STATUS Final | Project No 310204837

Contents

List of appendices

1 Introduction

Rosco Ice-cream Limited is seeking consent to develop a parcel of land between State Highway 2 ("SH2") and the Hutt Rail Line, in Manor Park, for future tenancies. The proposal area extent (the "Site") has an overall footprint of approximately 13.2-hectares, and is intended to be developed for a least three tenants.

Whilst the current application seeks only to provide roading and civil infrastructure for the Site, this report includes detailed analysis of the likely future use of the Site (which includes a concurrent application for a resource recovery park on Area 1), to provide a robust assessment of the transport impacts and infrastructure improvements that are proposed to accommodate the anticipated Site traffic.

Vehicle and pedestrian access to the Site will be achieved via Benmore Crescent, which is an existing cul-de-sac connecting to the wider road network at its northern end via a priority-controlled tee-intersection with Manor Park Road. It is intended to upgrade the current Benmore Crescent formation and subsequent intersection with Manor Park Road, to a standard capable of accommodating the future traffic expected at the Site. Improvements to the adjacent Manor Park Road level crossing are also proposed, which have been developed in collaboration and agreement with KiwiRail.

This report considers the transportation effects of the activities envisaged to occupy the Site, and includes assessment of the Site connection arrangements to the external network, details of the proposed Site layout and internal movement network, expected Site traffic generation, a high-level review of the relevant Hutt City District Plan ("District Plan") provisions, and consideration of rail, walking and cycling connectivity. A full concept design of the upgraded Benmore Crescent / Manor Park Road intersection and adjacent rail crossing has been developed as part of this resource consent application, and is presented in this report.

Based on the assessment undertaken herewith, and subject to the proposed network improvement works being implemented on Benmore Crescent and Manor Park Road, it is concluded that the proposed development of land to provide for future permitted uses, a resource recovery park, and other activities that could reasonably obtain a discretionary resource consent at the Site, will not cause adverse safety or capacity effects on the local transport network that cannot otherwise be managed and mitigated. Further, the Site's location immediately adjacent to the regional SH2 road corridor and established grade separated interchange with State Highway 58 ("SH58"), and good established proximate rail link and active mode connectivity for staff commuting purposes, ensure a good transport outcome.

2 Site Location and Transport Environment

2.1 Site Location

Figure 2-1 shows the location of the Site, in the context of the surrounding transport environment.

Figure 2-1 : Aerial Photograph of Site

As shown in **Figure 2-1,** the development area is bounded by SH2 to the west and the Hutt Rail Line to the east. Access to the development area is achieved via Benmore Crescent, which is a no exit street running generally north-south through the Site and connects with Manor Park Road (to the north) via a priority tee-intersection. Manor Park Road in turn connects with the SH2 / SH58 grade separated interchange ("Interchange") to the north of the development Site.

The local roading arrangements are illustrated in the aerial photograph included at **Figure 2-2,** which shows the current layout of the Benmore Crescent / Manor Park Road intersection adjacent to the Manor Park Road level crossing.

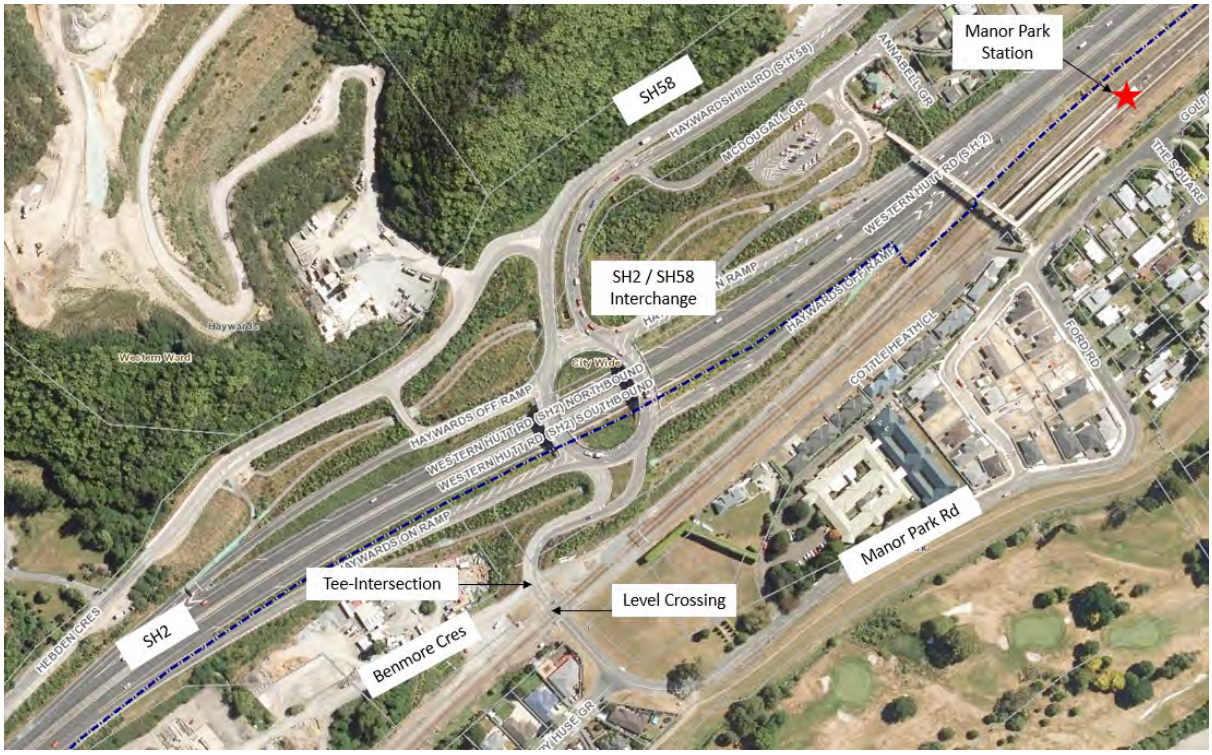


Figure 2-2: Adjacent Roading Arrangements

Further characteristics of the adjacent roads are provided in **Table 2-1**.

Table 2-1: Adjacent Road Characteristics

Characteristic	Manor Park Road	Benmore Crescent	State Highway 2[1]
Average Daily Traffic (ADT)	1,500	400	30,000
Road Hierarchy	Access Road	Access Road	Regional Road
Carriageway Width	9.2m	9m	20m
Speed Limit	50kph[2]	50kph	100 kph

As shown, traffic volumes on Manor Park Road include existing flows of 1,500 vehicles per day ("vpd"), whilst Benmore Crescent carries an estimated 400vpd. Such volumes are commensurate with the 'Access Road' classifications for each and represent the primary property access function they serve.

The existing roading characteristics on Manor Park Road at the Benmore Crescent intersection are illustrated in the photograph included at **Figure 2-3.**

[1] SH2 at Haywards Interchange
[2] Some 15m east of the Level Crossing, Manor Park Road reduces to 40kph

Figure 2-3 : View South on Manor Park Road towards Benmore Crescent Intersection (Google Earth)

Sightlines for traffic turning at the intersection extend approximately 60m to the north (towards the Interchange) and >100m to the east (across the level crossing), thereby satisfying the minimum Stopping Sight Distance[3] ("SSD") requirement of 55m for 50kph design speeds, noting that in practice operating speeds for vehicles approaching the Benmore Crescent intersection on Manor Park Road from the Interchange are less than the posted speed 50kph limit, given the radius of the bend evident in Figure 2-3.

The photograph provided at **Figure 2-4** below illustrates the carriageway environment on Manor Park Road to the east of the Benmore Crescent intersection and shows details of the adjacent level crossing.

Figure 2-4 : View along Manor Park Road over the Rail Level Crossing towards the Benmore Crescent Intersection

[3] Austroads Guide to Road Design Part 3: Geometric Design, 2016 – Table 5.5, based on reaction time of 2-seconds

The Site is currently zoned ‘General Rural’ under the District Plan as illustrated in **Figure 2-5**, with the adjacent areas being zoned a mixture of General Business, General Recreation, with some Residential.

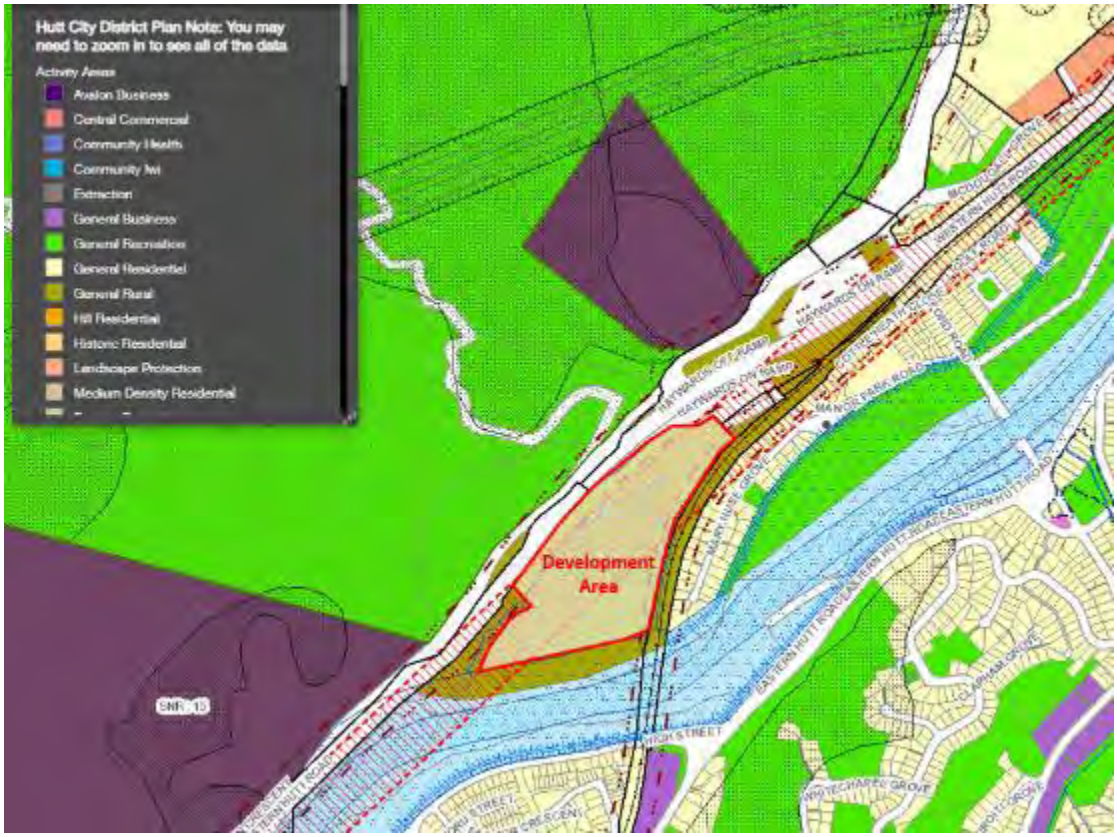


Figure 2-5 : Current District Plan Zoning

2.2 Existing Traffic Patterns

To inform the traffic analysis undertaken for this assessment, a full day classified turn count was undertaken at the Benmore Crescent / Manor Park Road intersection during a typical week (outside of school holidays) in July 2021, to capture the current traffic patterns on these adjacent streets. **Figure 2-6** illustrates these recorded daily traffic profiles.

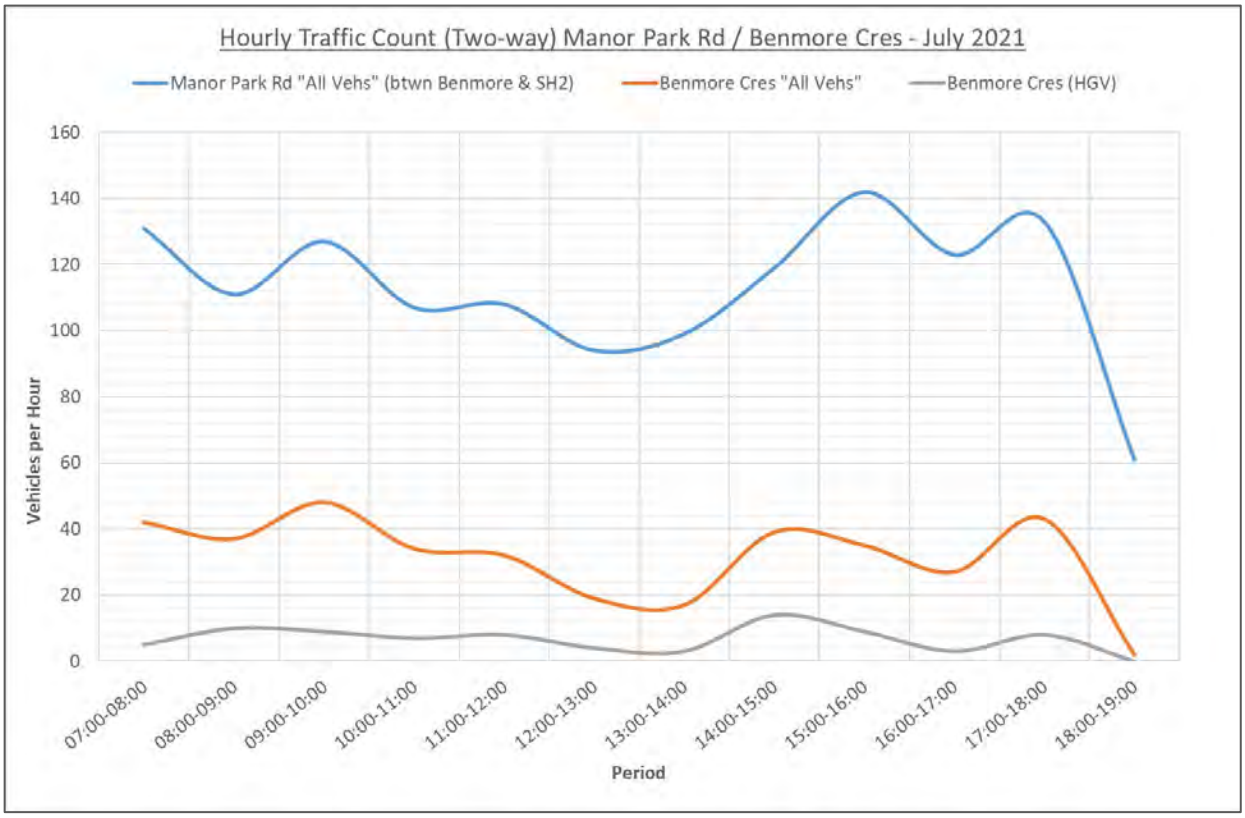


Figure 2-6 : Weekday Daily Traffic Volumes on Adjacent Road Network

As shown, volumes on Manor Park Road (between Benmore Crescent and the Interchange) peak at around 130-140 vehicles per hour ("vph") during the AM and PM peaks. By comparison, traffic volumes on Benmore Crescent indicate peaks of around 40-50vph, with approximately one third of this being Heavy Goods Vehicles ("HGVs"), reflecting the existing industrial nature of those activities currently served by Benmore Crescent. Overall, traffic generated by activities located along Benmore Crescent (primarily the Downer Group works depot) account for around a third of all traffic movements on Manor Park Road adjacent to the Interchange.

Further details of the peak hour turning movements at the Benmore Crescent / Manor Park Road intersection are illustrated in the diagrams included at **Figure 2-7** and **Figure 2-8,** for the AM and PM peak hours, respectively.

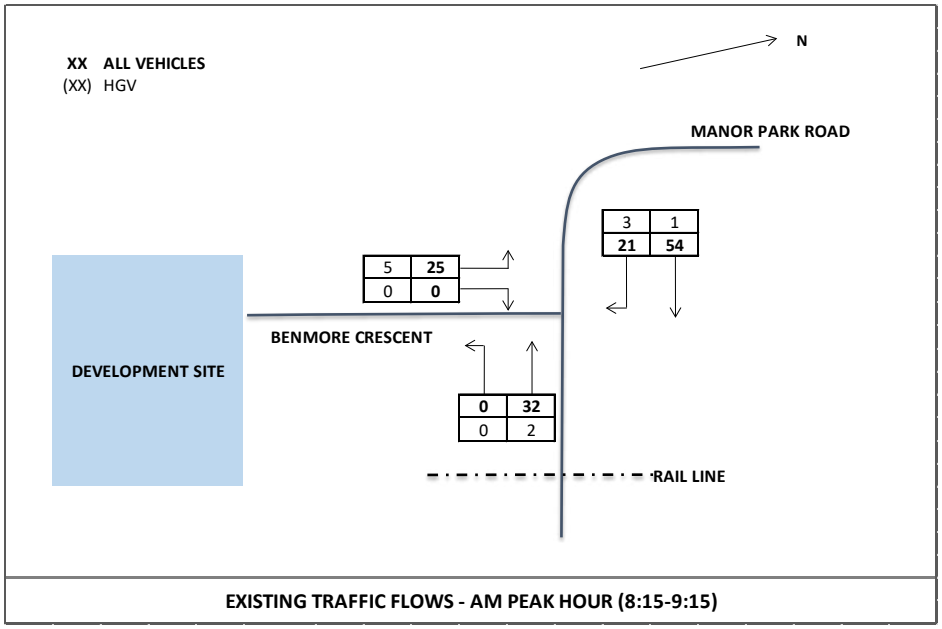


Figure 2-7 : Existing AM Peak Hour Traffic Flows

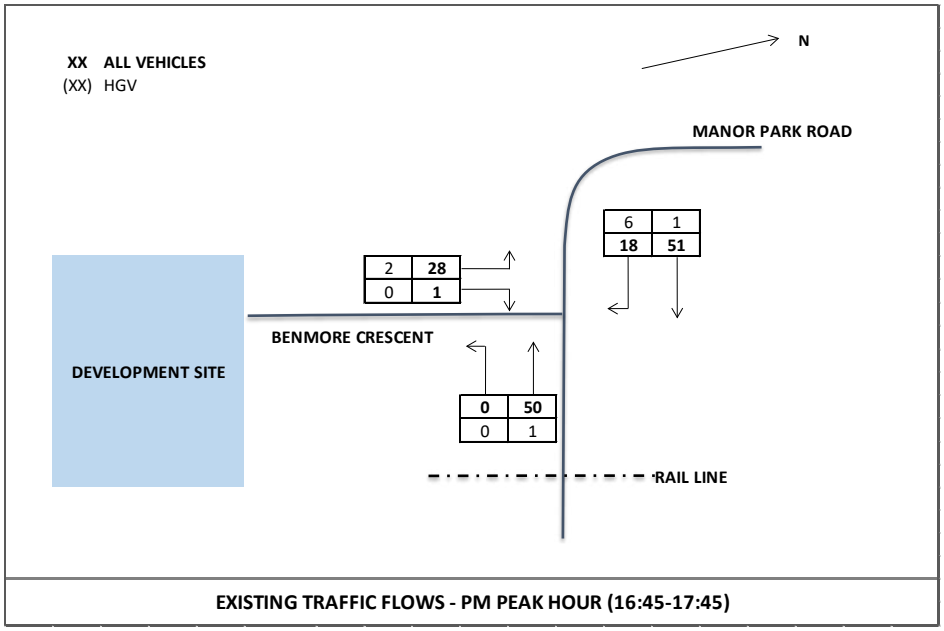


Figure 2-8 : Existing PM Peak Hour Traffic Flows

As can be expected, almost all turning movements at Benmore Crescent are right turn in / left turn out trips to and from the Interchange.

2.3 Road Safety

A search of the Waka Kotahi NZ Transport Agency's 'Crash Analysis System' ("CAS") database has been undertaken for the purposes of reviewing the road safety in the vicinity of the Site. The search area included Manor Park Road from the Interchange to 50m past the rail crossing, inclusive of the Benmore Crescent intersection, for the most recent complete five-year period (2017-2021). The search area is shown in **Figure 2-9** below.

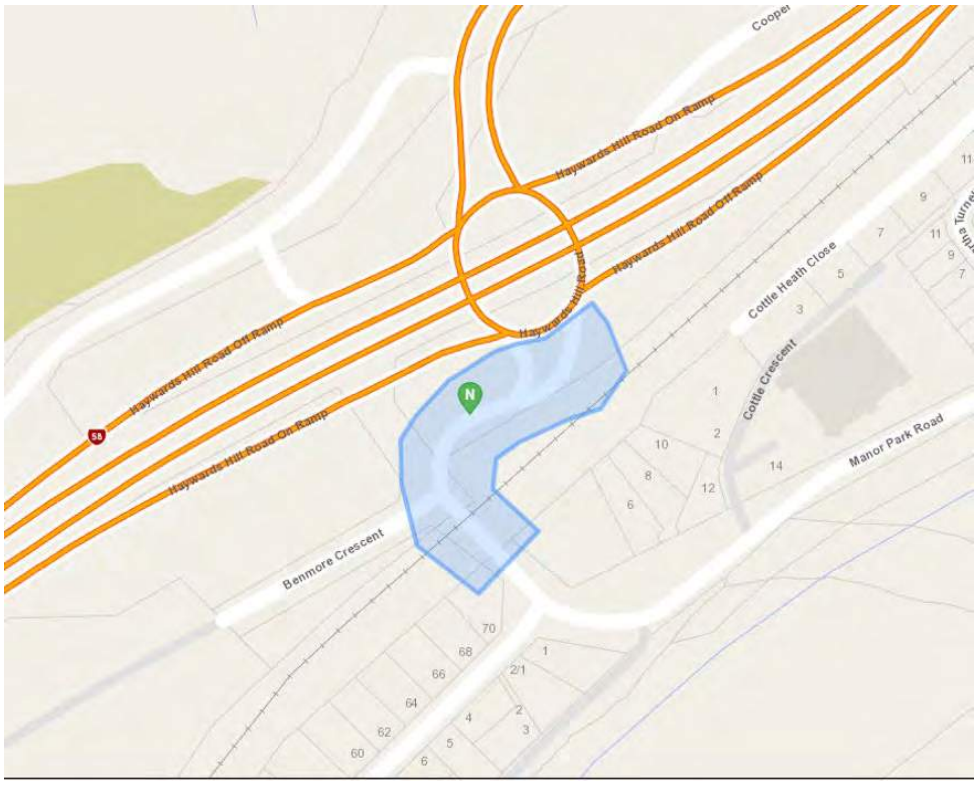


Figure 2-9 : Crash Study Area Extent

There has been one reported crash within the search area between 2017-2021, involving a vehicle turning into Manor Park Road off the Interchange losing control and colliding with the edge safety barrier. The crash was recorded as non-injury (i.e., damage only). A review of any accidents occurring to date in 2022 shows no reported crashes.

The crash record does not indicate there are any existing safety issues on the immediate road network in the vicinity of the Manor Park Road / Benmore Crescent intersection that provides access to the Site.

2.4 Sustainable Transport

The closest bus stops to the Site are located on the eastern side of the Hutt River, for which there are no local crossing opportunities to connect with the Site.

A footpath located on the northern side of Manor Park Road connects through to the Manor Park rail station, as shown by the green line within the detail of **Figure 2-10**. The Manor Park Station lies on the Hutt Valley Line (Wellington – Upper Hutt). Trains operate from this station at a 20-minute frequency between 6:20am to 6:30pm, and half hourly between 6:30pm and 11:30pm. As part of the Site development, it is proposed to construct a footpath along Benmore Crescent and pedestrian crossing facility on Manor Park Road across the railway line, which would enhance the pedestrian connection between the Site and the train station.

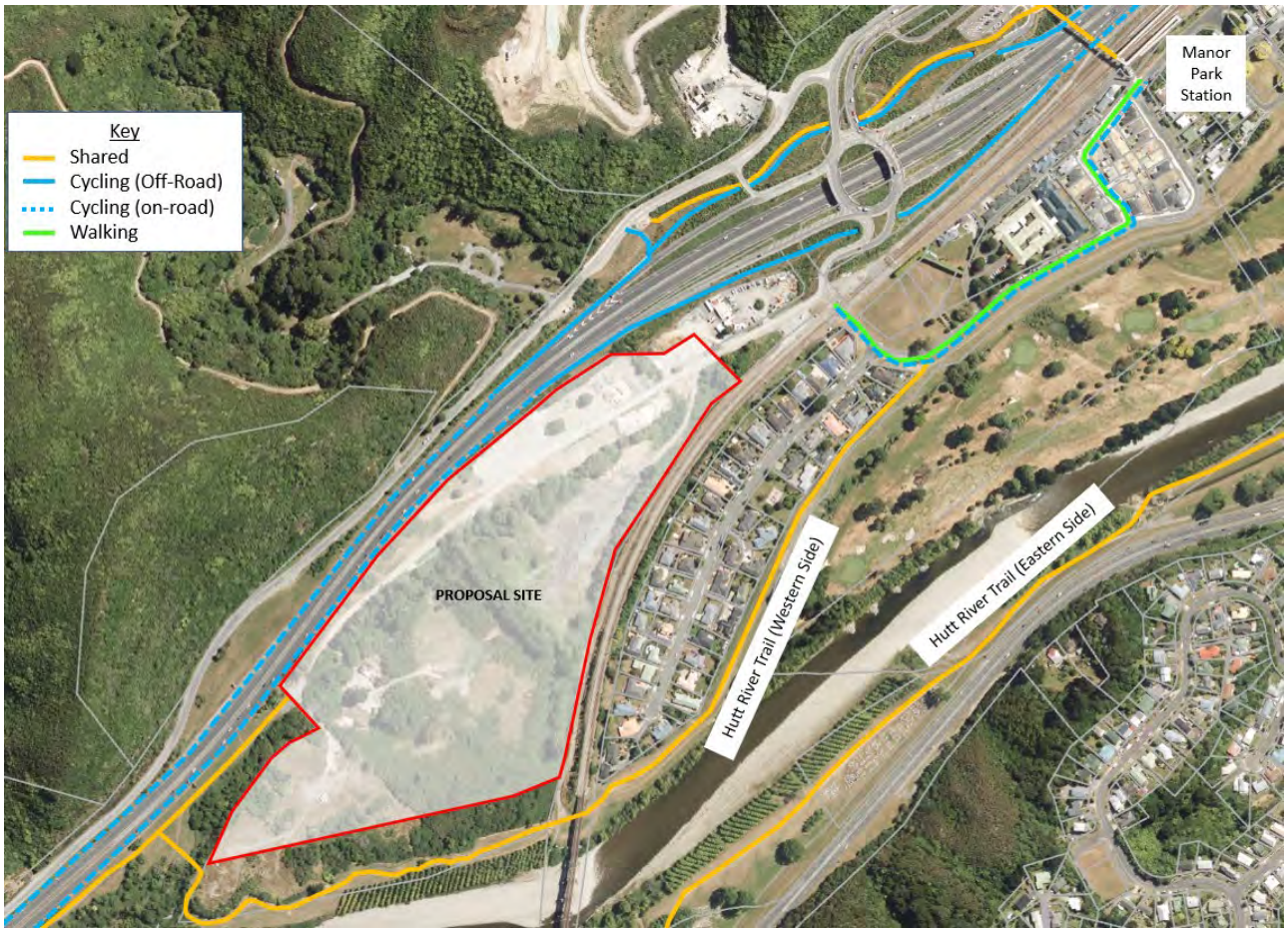


Figure 2-10 : Rail and Active Mode Connections in Transport Network

A series of cycle routes and shared paths serve the surrounding area, as shown in Figure 2-10**.** These include the Hutt River Trail (western side) immediately adjacent to the Site, which is an unsealed shared path that connects the end of Benmore Crescent with the Hutt Valley to the south.

Overall, the Site has good access to the key public transport train services on the Hutt Valley Line, via the nearby Manor Park rail station, and is served by established shared path connections which link with the suburbs to the south. These facilities provide good opportunities for staff to travel to/from the Site by means other than private car.

2.5 Recent Network Changes

Council has recently completed the Hutt Rail Trail (western side) connection from York Avenue (close to the Manor Park rail station) to Silverstream Bridge, to the north. This now facilitates walking and cycling connections between the Site and suburbs to the north and east (via the Silverstream Bridge).

3 Proposed Tenancy Development

The Site, comprising a total useable development area of approximately 10-hectares, is to be developed for three tenancy areas. Although tenants have not yet been confirmed for all areas, development of the Site for a range of permitted rural and some commercial activities is envisaged, including a resource recovery park (that is subject to a separate resource consent application).

The proposed access strategy for the Site includes the upgrade of the Manor Park Road / Benmore Crescent tee-intersection, along with improvements to the existing portion of Benmore Crescent that extends into the Site, to appropriately accommodate the increased traffic and heavy vehicle movements generated to and from the developed Site. A right-turn bay is proposed to be added on Manor Park Road with associated carriageway widening, along with improvements to the adjacent Manor Park Road level crossing.

A tenancy plan has been developed for the Site, as included at **Appendix A**, and provides details of the lease area boundaries and supporting transport infrastructure. In terms of Site access, the current Benmore Crescent carriageway is to be widened and upgraded, with a separate footpath provided to accommodate pedestrians. The section of Benmore Crescent between the Manor Park Road intersection and the Site boundary is proposed to remain as vested road, from which point the road will continue southwards at an equivalent formation as a 'common private road' through the Site and provide access to each of the tenancies.

4 Stakeholder Liaison

4.1 Waka Kotahi Transport Agency

Early discussions were held with Waka Kotahi regarding assessment of the associated transport impacts of the proposed Site development, on the operation of the State Highway Interchange. These discussions confirmed that on the basis there are no knock-on queuing effects arising from the increased traffic movements at the Manor Park Road / Benmore Crescent intersection, then no assessment or modelling of the Interchange operation would be required.

As set out in Chapter 8, the detailed SIDRA assessment of the upgraded Manor Park Road / Benmore Crescent intersection performance with the Site's future development traffic added, demonstrates there will be no material queuing or delays which could interact or cause queues to extend back to the Interchange.

4.2 KiwiRail

The Hutt Valley Line level crossing on Manor Park Road is situated approximately 10m east of the Benmore Crescent intersection. Whilst the development of the Site will not generate any material increase in vehicle trips over the level crossing itself, the proposed improvement works to incorporate a right turn bay at the adjacent Benmore Crescent tee-intersection requires widening of the Manor Park Road carriageway, which in turn will have an impact on the established layout of the level crossing.

Accordingly, Stantec has engaged with KiwiRail on both the land use changes triggered by the proposed Site development, as well as the proposed Manor Park Road intersection improvement works, in relation to the associated impacts on the adjacent level crossing. As part of this liaison, KiwiRail requested a 'Level Crossing Safety Impact Assessment' ("LCSIA") be undertaken, to determine the current and future risk.

The LCSIA subsequently completed by Stantec identified the existing level crossing arrangement fails to satisfy 'Criterion 1' (which requires all level crossings to achieve either a 'medium' or 'medium-low' risk). Notwithstanding, the LCSIA identified a series of recommended upgrades to improve the current crossing facility to mitigate future risk, including the provision of a formal pedestrian crossing facility that is currently lacking. With these improvements in place, the level crossing satisfies Criterion 1 with respect to pedestrians, but not for vehicles.

In any situation where a level crossing fails to meet Criterion 1, a requirement for a 'So Far As Is Reasonably Practicable' ("SFAIRP") assessment is triggered. This SFAIRP must demonstrate why compliance is not achievable, and that the design of the level crossing achieves as much as is 'reasonably practicable' to mitigate the associated risks of not satisfying Criterion 1.

The SFAIRP undertaken by Phil McQueen Consulting (independent of Stantec) in collaboration with KiwiRail and Council concluded that neither grade separation nor closure of the level crossing were reasonable or practicable measures, and that the design developed by Stantec that captured the recommendations set out in the LCSIA (and described in detail at Chapter 6), is appropriate. KiwiRail has subsequently accepted the SFAIRP conclusions and proposed intersection and level crossing upgrade design, and a signed copy of the report is included at **Appendix B** .

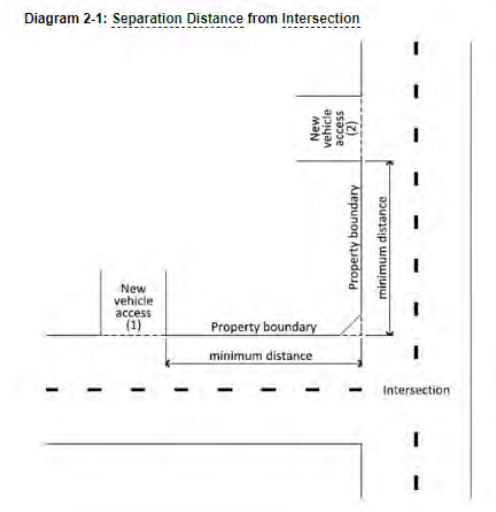
5 District Plan Assessment

Given the proposed development site is zoned 'General Rural' within the provisions of the District Plan, development of the Site for roading and infrastructure is considered a 'discretionary' activity. In addition, compliance is required with the underlying zonings permitted activity standards and the 'Engineering Design' provisions captured under 'Chapter 14A – Transport' (related to access and transport infrastructure).

An assessment of the proposed roading work's compliance with the relevant transport Rules and Standards is set out in **Table 5-1** below.

Table 5-1: District Plan Compliance Assessment

Reference	Rule	Assessment of Compliance
Chapter 14A Transport		
14A.5.1 (c)	Any activity that exceeds the high trip generator thresholds specified in Appendix Transport 2 is a Restricted Discretionary Activity. Discretion is restricted to: I. The effects of the activity on the transport network including impacts on on-street parking. An integrated Transport Assessment, prepared by a suitably qualified traffic engineer/planner, must be submitted within any resource consent application under this rule.	Since the proposed activities would exceed the 500 vehicle trips per day (for 'Any Activity not Listed Above' in the Appendix Transport 2 – High Trip Generator Thresholds) it is considered a High Trip Generator, and this TAR has been prepared accordingly to assess traffic and transport related impacts associated with the proposed Site development.
Chapter 14A Transport – Appendix Transport 1 Standards		
Standard 1	Standards for New Roads	
	(b) Engineering Standards All roads must be designed and constructed in accordance with NZS4404:2010 Land Development and Subdivision Infrastructure.	**Technical Non-Compliance.** The proposed upgrading of Benmore Crescent and new Site access road have been designed to meet the standards set out in NZS4404 in terms of carriageway width, as described at Chapter 8. Given tenancies 1 and 3 only front the eastern side of the road, a footpath is proposed on this side only, rather than on both sides as envisaged by NZS4404. Tenancy 2 will achieve its pedestrian access from the north end, with a crossing facility to the eastern footpath. These road and footpath design arrangements, as proposed, have been developed in collaboration with the Council
	(c) Service Lanes, Private Ways, Pedestrian Accessways and Walkways: Service lanes, private ways, pedestrian accessways and walkways must be designed and constructed in accordance with Section 3 of NZS 4404:2010 Land Development and Subdivision Engineering, except that Table 2-1 replaces the formation requirements for private ways detailed in NZS 4404. (*Note: Table 2-1 refers to 'residential activities', and therefore does not apply to the proposed Site use*).	**Complies.** The proposed new Accessways and active mode infrastructure has been designed to satisfy the requirements of NZS4404. Further detail on the proposed Site movement network

		arrangements is set out at Chapter 9.
Standard 2	Site Access and Manoeuvring Area	
	(a) Vehicle Access (excluding separation distances from intersections) No more than two separate crossings for any front site. The total width of such crossings must not exceed 50% of the road frontage. There must be a separation distance of at least 1 meter between crossings measured at the kerb / carriageway edge. Site access must be designed and constructed in accordance with Section 3 of AS/NZS2890.1:2004 Parking facilities Part 1: Off-street car parking. Where a vehicle access serves three or more dwellings, it must have a minimum width of 4 meters to allow for the service vehicles.	**Existing Use Rights** The Site has frontage to the end of Benmore Crescent and the formation extends into the Site as if it was an extension of the public road. **Can Comply.** Access to each individual tenancy will be designed to meet the standards set out in AS/NZS2890.1. **Does Not Apply.** No residential development will be provided for within the development.
	(b) Separation Distances from Intersections and Rail Level Crossings. The distance between new vehicle accesses and all intersections must be at least: • National or Regional: 30m • Arterial or Primary Collector: 20m • Secondary Collector: 15m • Access Road: 10m The distance between new vehicle accesses and all rail level crossings must be at least 30m. These distances are to be measured between the intersecting points of the site boundaries as shown in Diagram 2-1 below, and also apply to new vehicle accesses on the opposite side of the road from an intersection. Diagram 2-1: Separation Distance from Intersection  	**Can Comply.** The proposed new vehicle crossings providing access to the individual tenancies can achieve the required 10m separation from the Benmore Crescent intersection at Manor Park Road. **Does not Apply.** No new vehicle accesses are proposed to Manor Park Road, which accommodates the closest level crossing to the Site.

	(c) Manoeuvring Area Sufficient area must be provided for vehicles to stand and queue and make all necessary manoeuvres without using the public road reserve, and without using the area provided for parking, servicing, loading or storage purposes. Sufficient area must be provided to allow all vehicles to enter and exit the site in a forward direction except where the access is to a single dwelling and accesses an Access, Secondary Collector or Primary Collector Road.	**Can Comply.** Provision can be made within each of the tenancies to ensure vehicles stand, queue and manoeuvre without using the access road or internal parking / loading areas, and to also enter / exit tenancies in a forward direction.

As shown, the tenancy plan for the Site as proposed, has been designed to satisfy the relevant access and roading standard provisions of the District Plan, noting that whilst the proposed design for the Benmore Crescent and internal access road extension deviates from the NZS4404 typology in only providing a footpath on one side of the road (rather than two), this is considered appropriate since Area 2 to the west is separated from the road by an established stream and can be served by a crossing facility at its northern end to connect with the footpath on the eastern side of Benmore Crescent. These arrangements have been developed in collaboration with the Council.

Since the proposed Site development and future use will result in the generation of more than 500 vehicle trips per day (under the category 'Any activity not specifically listed above' in Appendix Transport 2 – High Trip Generator Thresholds), the proposal triggers the High Trip Generator Threshold under Rule 14A 5.1(c). As such, the preparation of a Transport Assessment is required to examine the transport impacts that may be generated by the development on the adjacent road network. This TAR has been prepared accordingly to assess the transport impacts of the proposed site development and associated effects on the adjacent transport network, and concludes that the demands can be safely and appropriately accommodated with the proposed roading infrastructure and associated improvements in place at the Manor Park Road intersection.

6 Site Access

6.1 Manor Park Road / Benmore Crescent Intersection

As described earlier at Section 2.1, access to the Site is achieved via the current Benmore Crescent tee-intersection with Manor Park Road. At present, vehicles turning right on Manor Park Road to access Benmore Crescent are required to wait within the through traffic lane, noting that with the modest traffic volumes currently turning at the intersection this is seen as an acceptable operation.

The development of the Site will trigger an increase in turning traffic volumes, such that it is appropriate to widen the carriageway in this location to provide for a dedicated right turn bay, to allow right turning vehicles to wait clear of through traffic on Manor Park Road.

Figure 6-1 below shows the proposed intersection upgrade which involves the widening of Manor Park Road to create a right turn bay for traffic accessing Benmore Crescent and the development Site, along with upgrades to the adjacent level crossing. Further details of the intersection upgrade are provided by the drawings included in **Appendix C**. These concept designs are currently being further developed to provide a package of engineering drawings for review and approval by Council, KiwiRail and Waka Kotahi, separately from this resource consent application, and for subsequent physical works tender.

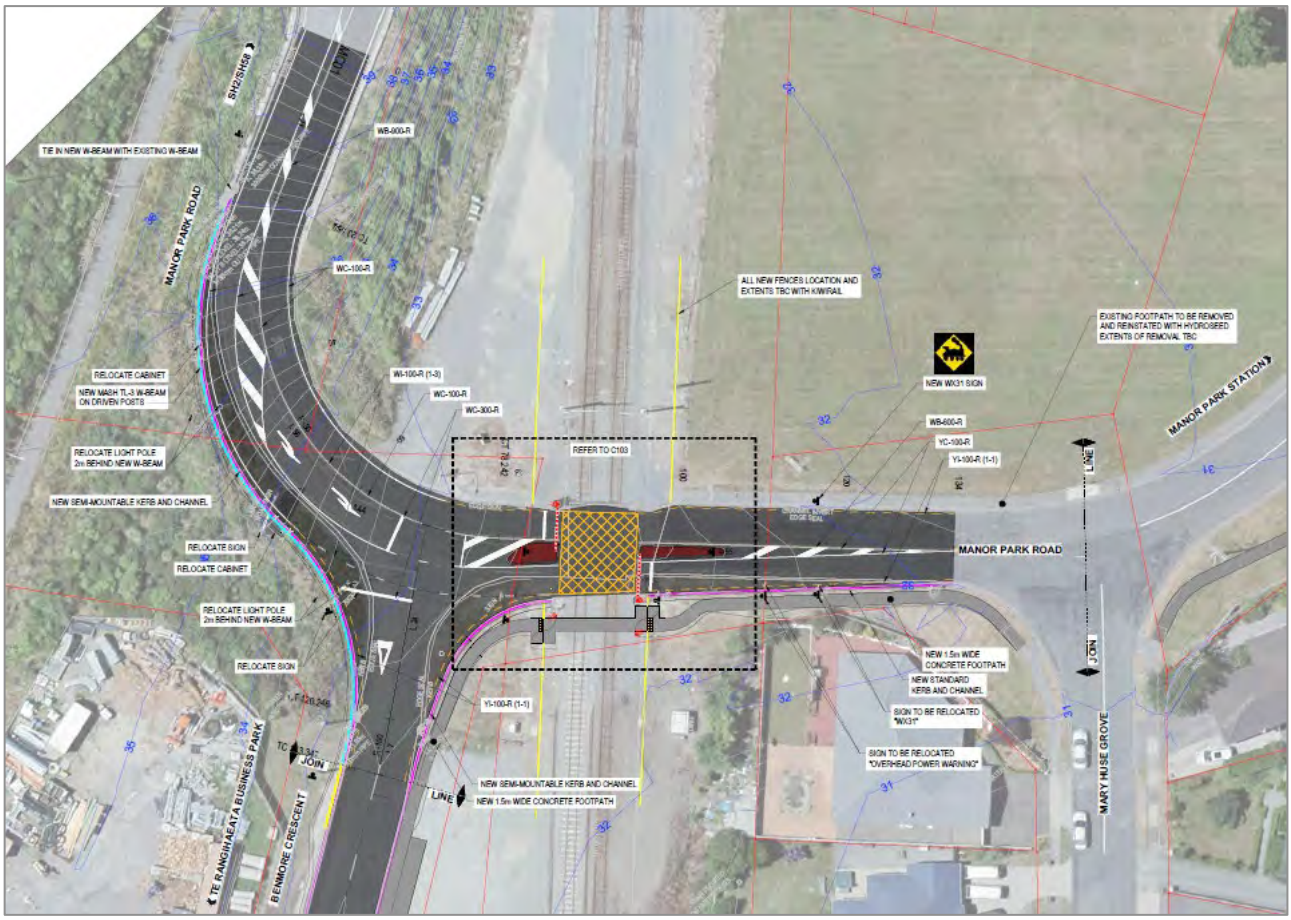


Figure 6-1: Manor Park Road/ Benmore Crescent intersection upgrade

Drawing from the detailed traffic modelling described later at Chapter 8, the design has been developed to provide sufficient queuing capacity to accommodate the forecast demand for right turning vehicles into Benmore Crescent at peak times, once the Site is fully developed. Accordingly, the proposed right turn bay and flush median allows for two semi-trailers to queue and wait without blocking the eastbound through lane on Manor Park Road. In addition to provisioning for the right turn bay, the proposed widening of Manor Park Road also allows for simultaneous right turn in/left turn out movements to/from Benmore Crescent.

6.2 Manor Park Road Level Crossing

As intimated earlier, Stantec has undertaken a LCSIA at the Manor Park Road level crossing. A number of associated recommendations were identified in the LCSIA, including:

- provision of a formal pedestrian path over the rail crossing on the southern side of Manor Park Road;
- provision of additional fencing along the rail corridor to prevent pedestrians crossing outside of the designated area; and
- installation of median islands on each of the Manor Park Road approaches, to prevent vehicles driving around the rail barrier arms.

These recommendations, which have been accepted by KiwiRail as part of the SFAIRP, have been incorporated into the proposed intersection design and stand as a significant improvement to the current arrangements.

In addition to improving safety for vehicles at the crossing, the upgrade works provide for the current Manor Park Road footpath to be extended to connect with Benmore Crescent, and will include a formalised safe pedestrian route across the rail crossing. A new section of footpath will also be constructed on the south side of Manor Park Road to the east of the level crossing that will connect with the Hutt River Trail, and also provide for those people who choose to walk between the Site and the nearby Manor Park rail station.

7 Forecast Site Traffic Generation

An assessment of the proposed Site traffic generation has been undertaken based on a combination of industry standard sources and operational data for anticipated rural ancillary or commercial type activities, including a resource recovery park (that is subject to a separate resource consent application) to be operated by Waste Management NZ ("WMNZ").

Whilst future tenants for all areas are yet to be confirmed, information provided by WMNZ who are expected to occupy Area 1 that comprises approximately 58,000m² (>50% of the development area), has been used to inform the overall development traffic forecasts. This WMNZ data, derived from a combination of their existing sites around the region includes a 20-year future growth allowance, and indicates peak hour and daily traffic generation (two-way) of 180vph and 870vpd (at year-20).

For the balance of the Site which comprises a total combined operational area of approximately 46,500m², trip generation rates reported for a combination of commercial activities (as defined in the District Plan) included in the industry standard NZTA Research Report 453 'Trips and Parking Related to Land Use' ("RR453") have been adopted, which indicates peak hour and daily generation of 410vph and 2,020vpd. It is considered these generations are at the upper end of what could be expected for future activities in this location and, as such, represent a generous level of traffic activity compared with other lesser uses that could establish on the Site.

The resultant forecast peak period and daily traffic generations for the total Site development, including expected HGV volumes, is summarised in **Table 7-1** below.

Table 7-1: Forecast Development Site Traffic Generation

AM		PM		Daily
Total	HGV	Total	HGV	
590	197	590	82	2,900

Under this scenario, peak hour flows in the order of 600vph and daily traffic movements of 2,900vpd are expected. These volumes have been carried forward to the traffic analysis presented in the next chapter.

7.1 Trip Distribution

With respect to trip distribution, it is anticipated Site traffic would route via a mixture of SH2 north / south and SH58, with the adjacent grade-separated interchange including more than adequate capacity to accommodate these movements, as confirmed through liaison with Waka Kotahi.

8 Assessment of Traffic Effects

With development traffic associated with the proposal Site connecting to the network at Manor Park Road, an assessment of the performance of the Benmore Crescent / Manor Park Road intersection has therefore been undertaken.

The intersection has been modelled using the industry-recognised SIDRA intersection analysis software, for the 'base' (existing traffic volumes as shown earlier in Figure 2-7 and Figure 2-8) and for the 'with Site development' traffic identified earlier at Table 7-1 added to the network. It is noted that the 'development' traffic has been modelled assuming the intersection improvements works described earlier at Chapter 6 are in place.

The SIDRA software analyses intersection capacities, vehicle delays and vehicle queuing, to give an indication of the expected intersection performance. It calculates a number of performance indicators including the following:
Level of Service[4] ("LoS"), based on delay to motorists, graded A (excellent performance) to F (poor performance); and average delay (seconds / vehicle), defining delay to the typical motorist.

The resultant LoS and delays by each approach is set out in **Table 8-1** and **Table 8-2**, for the weekday AM and PM peak hours, respectively.

Table 8-1 : SIDRA Traffic Modelling Summary AM Peak

Approach	Movement	Base		Development*	
		Delay (s)	LOS	Delay (s)	LOS
Manor Park Road (North)	Through	-	A	-	A
	Right	4.8	A	4.9	A
Benmore Crescent	Left	4.9	A	5.1	A
	Right	6.4	A	11.5	B
Manor Park Road (South)	Left	3.0	A	3.0	A
	Through	-	A	-	A

**Intersection Improvement Works in place*

Table 8-2 : SIDRA Traffic Modelling Summary PM Peak

Approach	Movement	Base		Development*	
		Delay (s)	LOS	Delay (s)	LOS
Manor Park Road (North)	Through	0.1	A	-	A
	Right	5.1	A	5.4	A
Benmore Crescent	Left	4.8	A	4.8	A
	Right	6.5	A	11.6	B
Manor Park Road (South)	Left	3.0	A	3.0	A
	Through	-	A	-	A

**Intersection Improvement Works in place*

[4] Level of Service (LOS) is a six-level grading system for intersection performance (A to F), where Level A represents totally uncongested operation with minimal delays and queues, and Level F represents highly congested operation with long delays and extensive queuing

The above analysis confirms site observations that the intersection is currently operating well, at LoS A on all approaches and turning movements during both the AM and PM peak hours. The intersection continues to perform well with good Levels of Service with the proposed Site fully developed.

Sensitivity testing of the intersection performance with the proportion of heavy vehicle traffic to and from Benmore Crescent increased from 33% to 50%, showed no substantive change in the above results.

Overall, the assessment shows that with subsequent full development of the Site and the installation of intersection improvements as proposed, there will remain adequate capacity at the immediate connection to the external network to accommodate the forecast development traffic, whilst maintaining good Levels of Service. With little delay and queuing at this Site access intersection, there will be will no knock-on effects of development traffic on the adjacent Interchange which is expected to continue to perform well, as confirmed by Waka Kotahi.

9 Internal Site Design

9.1 Proposed Movement Network

Details of the proposed movement network for the Site are illustrated in the plan included at **Appendix A**. As shown, access to the Site will be achieved via Benmore Crescent, which is proposed to be upgraded to an appropriate standard that will accommodate the transport demands generated by the proposed Site development. The initial section of Benmore Crescent between the Manor Park Road intersection to the Site boundary is intended to remain vested as public road. From here, the road will continue as a common private road providing access to each of the proposed tenancy areas.

9.1.1 Road Formation

The current formation of Benmore Crescent includes an 8-9m wide carriageway and, apart from the section in the immediate vicinity of the Manor Park Road intersection, has no kerb and channel. A view of the existing Benmore Crescent formation is shown in **Figure 9-1** below.

Figure 9-1: Benmore Crescent, view from Manor Park Road

In determining a suitable carriageway cross-section for the proposed public section of Benmore Crescent and connecting private access road extension, the District Plan[5] points to the industry standard NZS4404:2010 'Land Development and Subdivision Infrastructure' ("NZS4404"), which provides guidance on road formations depending on the land use activities they serve. Road Type 'E17' within Table 3.2 of NZS4404 indicates that for suburban 'Make and Move' development areas which include a primary freight access function, 2 x 4.2m wide traffic lanes and 1.5m wide footpaths on both sides of the carriageway are appropriate. Further detail of the NZS4404 road classification 'E17' is provided in **Figure 9-2** below.

[5] Chapter 14A: Transport 'Standard 1 – Standards for New Roads' (b)

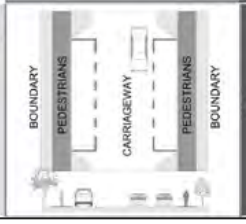
PLACE CONTEXT			DESIGN ENVIRONMENT				LINK CONTEXT					TYPICAL PLAN AND CROSS SECTION	FIGURE NUMBER
Area	Land use	Local attributes	Locality served	Target operating speed (km/h)	Min. road width (m)	Max. grade	Pedestrians	Passing, parking, loading, and shoulder	Cyclists	Movement lane (excluding shoulder)	Classification	SEE APPENDIX E FOR LARGER VERSION OF FIGURES	
Notes	See 3.2.4, table 3.1 & 3.3.1.6	See table 3.1	See table 3.1	See 3.3.5	See 1.2.2, 3.3.1.9, & 3.4.16		See 3.3.11	See 3.3.6 & 3.3.1.4	See 3.3.1.5, 3.3.7, & 3.3.11.2	See 1.2.2, 3.3.1.1, 3.3.1.2, 3.3.1.3, 3.3.1.10, 3.3.11.3	See 3.2.4.2 & 3.3.16 (Typical max. volumes)		
Suburban	Make and move	Primary freight access	Industrial area	40	18	10%	1.5 m each side	Parking and loading bays both sides may be in the movement lane or recessed. See 3.3.6	Shared (in movement lane)	2 x 4.2	Local road (~2,000 vpd)		E17

Figure 9-2 : NZS4404 Road Classification

With the proposed internal road only sharing frontage to tenancy areas on its eastern side (noting Area 2 to the west is separated from the road by an established stream), it is assessed that the provision of a footpath on the eastern side of the road only would be appropriate in this case.

These road and footpath arrangements have been discussed with Council and deemed appropriate.

Accordingly, the tenancy plan provides for the current Benmore Crescent alignment to be upgraded to the NZS4404 standard 'E17' described above, with the private access road extending off this continuing at an equivalent formation to provide access to each of the tenancy areas. Approximately 40m south of the transition from Benmore Crescent to the new private access road, a formed access leg will serve Area 2. A 25m diameter turning head, to facilitate turning of traffic (including trucks), is proposed at the southern end of the new access road adjacent to the entrance to Area 1.

With the exception of the initial portion of the access road which negotiates a gentle bend in the vicinity of the Area 2 access leg, the roading alignment through the Site is generally straight and level, allowing for adequate sightlines to be achieved at the future accessways.

As identified earlier (and illustrated in Figure 2-10), a number of walking and cycling routes exist within the vicinity of the Site, including a footpath on Manor Park Road leading to the nearby rail station, and provision for access to the Hutt River Trail (western side) from Manor Park Road. As part of the recommended improvement works at the Benmore Crescent / Manor Park Road intersection and adjacent level crossing described earlier, the current Manor Park Road footpath is to be extended to connect with Benmore Crescent and will include a formal pedestrian route across the rail crossing.

The proposed redevelopment of Benmore Crescent and construction of the new access road through the Site will include a footpath along the full length, providing for access to and through the development area. Cyclists accessing the Site from Benmore Crescent will be able to share the carriageway, with the widened cross section formed to an appropriate width for cyclists to safely use the shoulder.

9.2 Individual Tenancy Access

The proposed Site layout has been designed with consideration of achieving appropriate access to each tenancy off the internal access road, noting these can be located to ensure adequate sightlines are achievable along the carriageway at driveway interfaces. Access to Area 2 will be able to be designed to intersect with the access road at an appropriate angle to ensure safe operation and appropriate sight distances for turning vehicles.

In addition, the District Plan provisions under Standard 2 that relate to minimum access separation from intersections; restricting accessways to no more than two per site; providing for vehicles to queue and stand clear of the road reserve; and enabling 'forward in' and 'forward out' manoeuvring (to remove the need for reversing to/from the street), can all be practically met and demonstrated at subsequent consent stage.

9.3 Parking Design and Demand

Recent changes to the National Planning Framework and District Plan have removed any requirements to provide on-site carparking. Notwithstanding this, given the larger area of the proposed tenancies relative to the typically lower density of staff anticipated to be employed by future activities, it is expected that provision for sufficient on-site parking will be achievable. Such details will be properly addressed at subsequent consent stages.

It is noted that within NZS2890.1 there are differing parking and manoeuvring dimension requirements depending on whether the car parking is to be assigned to casual (e.g. visitor) or regular (e.g. staff) users. Car parking areas can be designed in accordance with these varying standards.

The District Plan requires that parking for mobility permit holders should be provided and designed in accordance with Section 5 of NZS 4121:2004 Design for Access and Mobility – Buildings and Associated Facilities. There is no reason why sufficient space within the development areas to accommodate these requirements cannot be made, again with such details captured at resource consent.

9.4 Cycle Parking and End of Trip Facilities

Chapter 14, Standard 4 (e) of the District Plan sets out requirements for the provision of cycle parking and end of trip facilities. These requirements are based on the number of staff, and are summarised in **Table 9-1** below.

Table 9-1 : District Plan Cycle Parking Requirements

Number of Staff members	Number of Cycle Parks	Number of Showers
1-5	**0**	**0**
6-10	1	1
10 or more	1 per 10 staff members	1 per 100 staff members

Additionally, any cycle parking facilities must meet a series of minimum standards around design and location. As with car parking, there is sufficient space within the tenancy areas to achieve these requirements.

9.5 Loading and Servicing

Chapter 14, Standard 5 (b) of the District Plan sets out minimum requirements for on-site loading and unloading provision for non-residential activities, as shown in **Table 9-2**.

Table 9-2 : District Plan Loading Zone Requirements

Gross Floor Area	Number of spaces	Minimum Design Vehicle
Up to 500m^2	**Nil**	**-**
501 to 1,000m^2	1	Small rigid vehicle
1,001-3,000m^2	1	Medium rigid vehicle
Greater than 3,001m^2	1	Large rigid vehicle

Again, given the size of the tenancy areas created, sufficient provision to accommodate the required on-site (un)loading areas is achievable, as a minimum. In addition to the requirements identified above, it is recommended that during the design phase the specific loading requirements (e.g. frequency of loading operations, size of truck, etc) of each activity proposed are carefully considered so that appropriate loading and unloading facilities are provided. This consideration should also extend to internal circulation routes and driveways that heavy vehicles would be required to use. Such detail will again be appropriately captured at subsequent resource consent.

10 Conclusions

Rosco Ice-cream Limited is seeking consent to develop an approximately 13.2-hectare area of land between SH2 and the Hutt Rail Line in Manor Park for future tenancies. Subsequent future tenancies of the Site are intended to provide for a range of rural ancillary and commercial activities, including a resource recovery park.

Access to the Site is via Benmore Crescent, an existing cul-de-sac road connecting to the wider road network via a priority-controlled tee-intersection at Manor Park Road. As part of the development works it is intended to upgrade Benmore Crescent and its subsequent intersection with Manor Park Road, to provide the necessary widening to incorporate a right turn bay for traffic entering the Site (via Benmore Crescent), as well as deliver improvements to the adjacent level crossing, including providing a safe footpath connection between the Site and nearby Manor Park rail station.

Analysis of the proposed traffic generation and modelling of the Benmore Crescent / Manor Park Road intersection confirm that, with the proposed upgrade works in place, the intersection and immediate road network can appropriately accommodate the forecast traffic volumes associated with the Site's subsequent development and likely future activities.

The Site's proximity to the established grade-separated Interchange at SH2/SH58 provides an ideal connection to these regional transport corridors, whilst the location of the Manor Park rail station within walking distance of the Site provides a convenient public transport connection for staff, as an alternative to private vehicle travel.

The Site's internal movement network has been designed in accordance with the District Plan and the industry standard NZS4404, and to accommodate the quantum and type of transport demands expected to be generated by the future tenants.

Overall, and based on the assessment of the type of activities that would be established at the Site, the proposed Site development can be supported from a traffic engineering and transport planning perspective.

Appendices

We design with community in mind

Appendix A Tenancy Plan Layout

N

0 10 20 30 40 50

Access road corner to be eased to suit

New 35m wide culvert crossing to stream at site entry

Entry roadway min 10m width.
Approx length 115m

WESTERN HUTT ROAD (SH2)

BENMORE CRES

COMMON PRIVATE ROAD

KIWIRAIL HUTT VALLEY/ WAIRARAPA LINE

MARY HOUSE GROVE

Edge to No Build Zone

2
25,865 m²

3
20 650m²

1
57,800 m²

Approx line of extg Stream

Overall Tenancy Plan

Te Rangihaeata

Benmore Cres - Manor Park - Hutt City

proposal for

Rosco Industrial & Ngāti Toa Rangatira

15 December 2022 **Refer Bar Scale** 2028 revB

ROSCO INDUSTRIAL

Ngāti Toa Rangatira

HARRIS ARCHITECTS LIMITED
po box 24 120 wellington
m 021 110 8895 e derek@harch.nz
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Appendix B SFAIRP Report

SAFETY, HEALTH AND ENVIRONMENT

ENTERPRISE-WIDE SHE TEMPLATE (Adapted for LCRAG SFAIRP Process)

04-TEM-006-SHE
SFAIRP STATEMENT REPORT

1. DOCUMENT DETAILS

Project Name:	Te Rangihaeata Business Park Development Project – adjoining Manor Park Rd Level Crossing, 23.19km, WL

Project Stage:	Design ☒	Implementations/Closeout (Construction) ☐	Operations ☐

Disciplines Covered:					
Track ☒	Civil ☐	Structures ☐	Signals & Comms ☒	Mechanical ☐	Traction/Elec ☐
Facilities ☐	Operations ☒	Rollingstock ☐	Network Services ☒	Ships ☐	
Others Please Specify:					

Document Control:		
DRAFT v1	For internal review by KiwiRail. Agreed by KiwiRail at internal review meeting 4 Oct 2022.	25/08/22
FINAL	Agreed at SFAIRP review meeting. Minor updates to cost proportionality calculations to include updated VoSL.	27/10/22

2. DOCUMENT APPROVAL

Project Assurance SFAIRP Due-diligence Declaration Confirming that:	Completed
1. SHE Risk Assessment has been implemented as intended and communicated to the key stakeholders and that the hazard/risks associated with project stage have been established, understood, and the relevant controls have been identified, implemented or planned.	☐
2. SFAIRP statement demonstrate a reasoned and supported arguments, that there are no other practical measures that could reasonably be taken to reduce risks further and that the controls implemented provide the highest level of protection that is reasonably practicable for these circumstances.	☐
3. Due diligence checks have been undertaken verifying that the identified controls are appropriate and documented evidence is available to confirm the risks have been mitigated to a degree consistent with KiwiRail systems and standards.	☐

Prepared by Author:	Phil McQueen Ltd	Signature		Date	28/10/22
Content Reviewed by:	Senior Level Crossings Engineer	Signature	E COOK	Date	28/10/2022
Technical Authority Approval:	Professional Head Signals and Telecommunications	Signature		Date	03/11/2022
Operations Approval:	GM Metros (Manjot Singh on behalf of Jon Knight)	Signature		Date	10/11/22
Zero Harm Approval:	Head of Safety Risk Assurance	Signature		Date	31/10/22

3. PURPOSE AND SCOPE OF THIS REPORT

The Manor Park Rd level crossing in the Hutt Valley adjoins a nearby business park development proposed by Roscoe Ice Cream Ltd. (The Te Rangihaeata Business Park Development Project).

The effects of the proposal on the level crossing and associated changes in risk have been analysed using the LCSIA process and risk controls have been identified.

The risk controls necessary to achieve criterion 1 for the road crossing are considered by the developer to be "not reasonably practicable". The risk controls that have been proposed will achieve criterion 2, but not criterion 1, hence triggering the requirement for a SFAIRP review for the road crossing.

The risk controls necessary to achieve criterion 1 for the proposed pedestrian crossing are planned to be implemented. As criterion 1 will be achieved there is no requirement for a SFAIRP review for the proposed pedestrian crossing.

Therefore, the SFAIRP Report considers the road crossing, but not the proposed associated pedestrian crossing.

The purpose of the SFAIRP Report is to review the analysis of the proposed risk controls and the conclusions about which controls are "reasonably practicable", by applying the process described in the LCRAG (v5), Appendix 9.

The LCSIA report describes in detail the effects on Manor Park Rd level crossing, the associated changes in risk, and the proposed risk controls. Briefly:

- The business park development will drive modest increases in road and pedestrian traffic at the crossing.
- Population growth and other development growth in the general area is projected to drive increased road traffic volumes at the crossing, and to a greater degree than the business park development.

- The number of trains operating over the crossing is projected to increase but is not related to the business park development.
- Due to the projected increased traffic volumes driven by the business park development, the project was identified as causing a Change in Use effect on the crossing according to KiwiRail's level crossing risk assessment guidance (LCRAG).
- Stantec consultants have prepared an LCSIA report which considers the effect of the changes on the crossing and identified the required controls for the road crossing and for a proposed pedestrian crossing.
- The LCSIA report has found that criterion 1 cannot be achieved for the road crossing other than by grade separation or crossing closure, and that criterion 2 can be achieved by a combination of other controls.
- Grade separation or closure are considered "not reasonably practicable" by the developer, and the criterion 2 controls are proposed instead, hence triggering the requirement for this SFAIRP review.

The figures below show the existing and proposed arrangements and are extracted from the LCSIA report.

Figure 3-2: Manor Park Road Level Crossing Aerial (Source: Hutt City GIS)

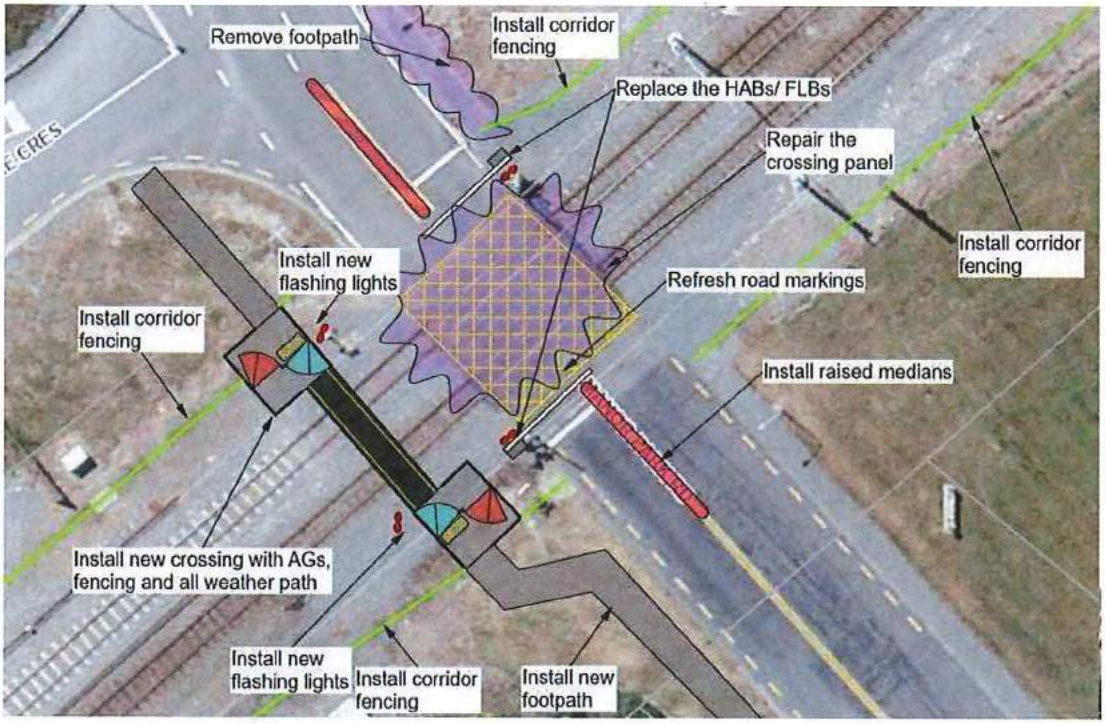


Figure 3-18: Recommendations for the Manor Park Road Level Crossing

4. APPLICABLE REGULATIONS, ACTS AND STANDARDS

Type	Description
KiwiRail Engineering Standards	KiwiRail Infrastructure has a comprehensive suite of engineering standards and supporting documents, including those applying to level crossings. In particular, the Signals and Telecommunication Standard: Active Level Crossings (S-ST-LC-2103), which specifies minimum levels of protection at crossings.
NZTA Traffic control devices manual (TCD manual) – Part 09: Level crossings	The TCD manual provides standards for traffic control devices including at level crossings.
Level crossing risk assessment	The Level Crossing Safety Impact Assessment (LCSIA) and Australian Level Crossings Assessment Model (ALCAM) are methods used in NZ for assessing level crossing risk and identifying appropriate risk controls. The Level Crossing Risk Assessment Guide (LCRAG), prepared jointly by KiwiRail and NZTA Waka Kotahi, provides guidance on risk assessment and describes the SFAIRP review process to be used if there are risk controls identified that are considered to be "not reasonably practicable" to implement.
Act	Railways Act 2005
Act	Health & Safety at Work Act 2015
Regulations	Health & Safety at Work Regulations 2016

5. KEY CONSTRAINTS, ASSUMPTIONS, AND DEPENDENCIES

The risk has been assessed, and risk controls proposed, using the LCSIA process.

This SFAIRP Report has been prepared using the process set out in LCRAG (v5) Appendix 9 and relies on the information contained in the reference documents listed in section 10, and where noted further information provided by Stantec.

6. STAKEHOLDER ENGAGEMENT

The Key Stakeholders are:

Stakeholder	Reason for Engagement
KiwiRail	The KiwiRail Lower North Island Region is responsible for the maintenance of the infrastructure and the rail operations at the level crossing. KiwiRail Engineering and Zero Harm groups are KiwiRail's technical authorities re level crossing design and safety risk. KiwiRail is a project partner for the P2P project.
Transdev Wellington	Transdev Wellington operates the suburban passenger trains at the level crossing.
Hutt City Council	Hutt City Council is the local Road Controlling Authority including for Manor Park Rd.
Roscoe Ice Cream Ltd	Roscoe Ice Cream Ltd is the developer of the proposed business park near Manor Park Rd.

Engagement with stakeholders took place as part of the LCSIA of the crossing and included all relevant parties including worker representatives. Details are in the LCSIA report.

7. RISKS BEING CONSIDERED

Risk/Hazard ID	System/Rail Network - Key Risks/Hazards Description
	The risk of harm caused by a train vs road vehicle collision at the level crossing for the future use cases.

The key factors driving this risk at Manor Park Rd crossing are the existence of a level crossing of road and rail, and the increased road and rail traffic volumes for the future use cases:

- Additional road and pedestrian traffic volumes generated by the proposed development.
- Additional road traffic volumes generated by forecast future population growth and development growth in the area.
- Additional rail traffic volumes generated by forecast future growth of freight and passenger services.

This risk is not new, as it exists to a degree today at the existing Manor Park Rd crossing. Neither is it novel, as the same risk exists in varying degrees at numerous other level crossing locations on the rail network. However, the proposed change of use at Manor Park Rd will result in increased traffic levels with an associated change in risk which must be considered, and appropriate controls identified.

8. SFAIRP JUSTIFICATION STATEMENT

KiwiRail currently manages this risk through a number of existing controls, selected and applied to each crossing site as appropriate, and which fall under KiwiRail's Safety Case and Licence to Operate. Therefore, this SFAIRP statement focuses on how existing controls will be applied at the crossing site.

It is considered that the safety risks associated with future use of the level crossing at the new Manor Park Rd road crossing, 23.19km WL, by projected additional road and rail traffic have been understood, the appropriate

controls have been identified and are planned to be implemented, and that it has been demonstrated that they will be effective through a review of the documentation provided internally and by consultants.

The Risk has been assessed and the following Hierarchy of Controls considered:

Controls Considered		Results
Elimination	Grade Separation Closure	Not Practicable
Substitution	N/A	N/A
Engineering	Flashing Lights & Bells and Half Arm Barriers. Road/rail intersection layout and design details and physical works.	To be Implemented
Administrative	Signs and road markings.	To be Implemented

The controls proposed to be implemented will achieve criterion 2, but not criterion 1. The controls reduce the risk SFAIRP and are fit for the future use of the level crossing by the projected additional road and rail traffic.

The following section "Controls Implemented / Considered" provides further detail on the controls proposed to be implemented and those that were considered and found to be not reasonably practicable.

It should be noted that this report is focused on the safety risk reduction aspects of the proposed solution at Manor Park Rd crossing and does not have scope to consider any wider amenity and development opportunities which might drive a different solution for other reasons as well as safety risk reduction.

9. CONTROLS IMPLEMENTED / CONSIDERED

Risk/Hazard ID	RISK DESCRIPTION	SFAIRP JUSTIFICATION	Hierarchy of Control IMPLEMENTED	Hierarchy of Control CONSIDERED
	The risk of harm caused by a train vs road vehicle collision at the level crossing for the future use cases.	Closure *[Closure of Manor Park Rd crossing is considered in the LCSIA report which states that:* *"...Manor Park Road provides the only access between the wider road network and the suburb of Manor Park and hence closure of the level crossing would not be a practical option."* *"Manor Park suburb is experiencing steady residential development. The construction and occupation of new housing is likely to generate new trips, and the only connection to the wider road network is via Manor Park Road and over the level crossing."* *The current (July 2021) road traffic volume at the crossing is 1,500 vehicles per day and forecast in 2032 to grow to 1,830 vehicles per day.* *Closure of the crossing is a suitable control. However, it is not an available control as there is no alternative access across the railway for the Manor Park suburb which is bounded by the railway on one side and a golf course and the Hutt River on the other. Therefore, closure is not reasonably practicable.]*		Elimination
	The risk of harm caused by a train vs road vehicle collision at the level crossing for the future use cases.	Grade separation *Grade separation of Manor Park Rd crossing is briefly considered in the LCSIA report and Stantec have subsequently provided high level information on indicative costs for comparable grade separation projects. The indicative cost range advised is $50 - 80m, noting that this is a wide range, but that the general observation can clearly be made that costs to achieve grade separation at Manor Park Rd are likely to be very substantial. As a clarification Stantec have also advised that the recent SH2/SH58 Haywards Hill interchange project area did not include Manor Park Rd level*		Elimination

Risk/Hazard ID	RISK DESCRIPTION	SFAIRP JUSTIFICATION	Hierarchy of Control IMPLEMENTED	Hierarchy of Control CONSIDERED
		crossing so an upgrade at the crossing was unlikely to have been considered as part of that project. *Considering cost proportionality:* - *The fatal return period (FRP) calculated by the ALCAM analysis for the updated existing assessment scenario is 404 years. This equates to 0.25 fatalities over 100 years (the assumed life of a grade separation structure).* - *The latest available Ministry of Transport VoSL (June 2021 update) is $4.88M, so the value of the risk reduction is $1.2M.* - *Based on the LCRAG App 9 guidance, an ICAF ratio of greater than 10 will generally be considered grossly disproportionate.* - *Therefore, a cost of more than $12M to build a grade separation would be considered grossly disproportionate.* - *Based on the information noted above, although no specific investigations have been made for Manor Park Rd, $12M is likely to be unrealistically low for a grade separation in this location, with the indicative cost range for comparable projects being $50 – 80m. Using $50m, which is at the lower end of this range, gives an ICAF ratio of about 42, so a $50m cost would be considered grossly disproportionate.* *As a comparator, repeating the above calculation using the FRP for the change in use scenario of 319 years (the worst case FRP scenario), gives an ICAF ratio of 33, so a $50m cost would still be considered grossly disproportionate.* *Based on the information available, grade separation is a suitable control, it is assumed to be an available control, but the cost would be grossly disproportionate to the risk benefit. Therefore, grade separation is not reasonably practicable.]*		
	The risk of harm caused by a train vs road vehicle collision at	Flashing Lights & Bells and Half arm barriers. *[Required to meet KiwiRail's minimum protection standard.*	Engineering	

Risk/Hazard ID	RISK DESCRIPTION	SFAIRP JUSTIFICATION	Hierarchy of Control IMPLEMENTED	Hierarchy of Control CONSIDERED
	the level crossing for the future use cases.	*FLB/HAB already exist at this crossing, although the HABs are old having been installed in the 1960's. The proposal is to renew them.]*		
	The risk of harm caused by a train vs road vehicle collision at the level crossing for the future use cases.	Road/rail intersection layout and design details to maximise effectiveness of controls and reduce hazard likelihood at this site. *[Includes:* - *Install a median island to prevent vehicles driving around the barrier arm when lowered.* - *Reconfigure the signalling at Manor Park station so that stopped trains do not activate the HABs creating long barrier down times and driver frustration.* - *Repair the crossing panel to address minor surfacing and pavement defects.]*	Engineering	
	The risk of harm caused by a train vs road vehicle collision at the level crossing for the future use cases.	Road/rail intersection layout and design details to maximise effectiveness of controls and reduce hazard likelihood at this site. *[Includes:* - *Refresh all road markings.* - *Replace incorrectly installed road signage - install WX1R sign on Manor Park Road east approach, replace signage on Benmore Crescent with correct sign WXR5 sign.* - *Signs and road markings are being designed with due regard to the NZTA Traffic control devices manual (TCD manual) – Part 09: Level crossings, as confirmed by separate email from Stantec.]*	Administrative	

Extract from LCSIA report summarising ALCAM outputs:

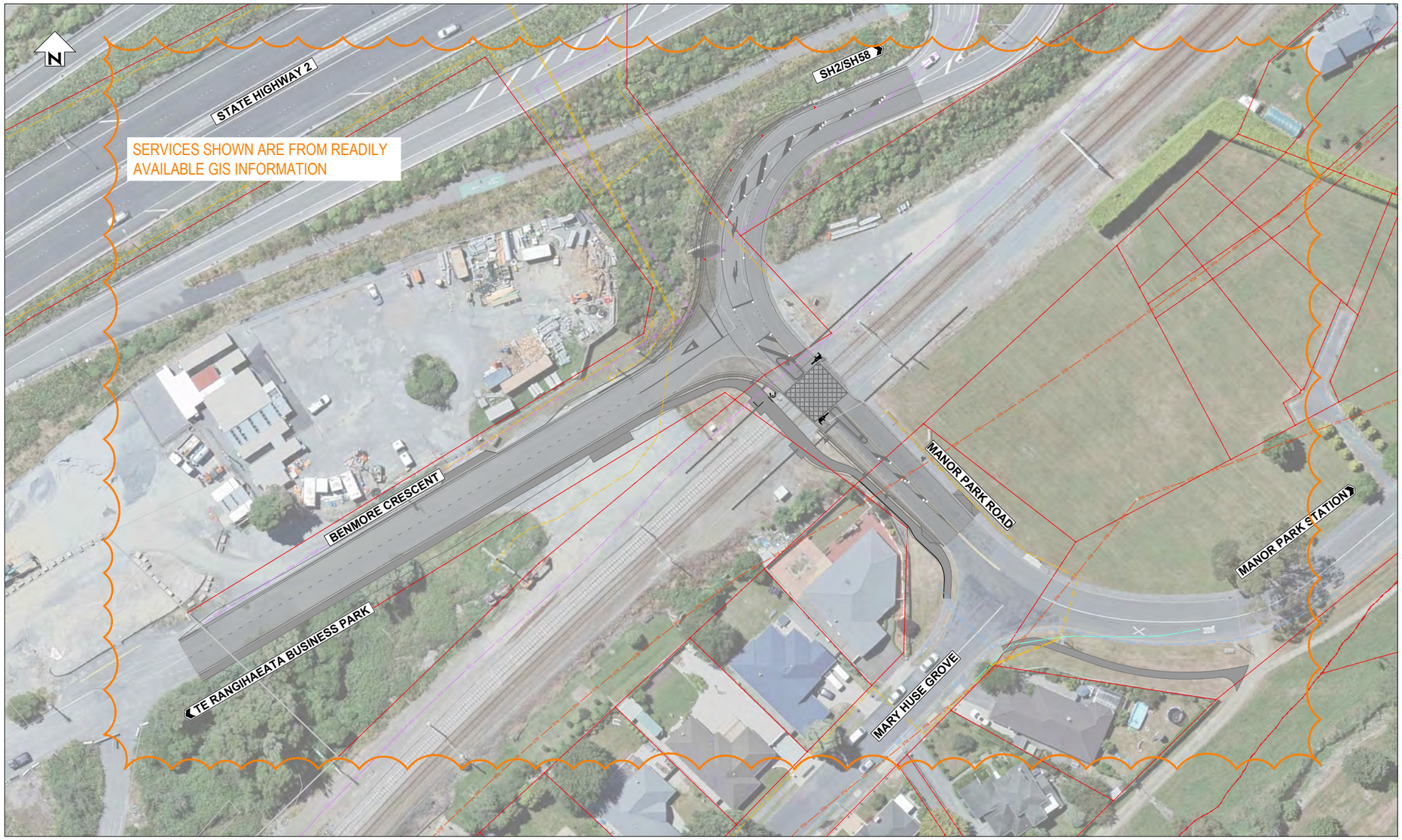
Table 3-13: Manor Park Road Level Crossing ALCAM Changes

Scored Items	Updated Existing	Change In Use	Proposed Design	Future Score
ALCAM risk band	High	High	High	High
ALCAM risk score % change	N/A	27%	-7%	+15%
Fatal return period	404 years	319 years	434 years	350 years

10. REFERENCE DOCUMENTS

1. Stantec report: Manor Park Road Level Crossing Safety Impact Assessment PREPARED FOR ROSCO ICE CREAM LIMITED | JUNE 2022, Rev A, 20/06/2022
2. Joint KiwiRail and Waka Kotahi publication: Level Crossing Risk Assessment Guide (LCRAG), v5.

Appendix C Benmore Crescent / Manor Park Road Intersection Upgrade



PLAN

SCALE 1 : 500 @ A1

NOTES

SURVEY

1. COORDINATES ARE IN TERMS OF NZGD 2000 (WELLINGTON).
2. HEIGHTS ARE IN TERMS OF WELLINGTON DATUM 1953.
3. ORIGIN OF LEVELS:
   - MARK NAME: PIN I SO 497033.
   - REDUCED LEVEL: 31.522m
   - SOURCE: LINZ GDB
4. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL SURVEY MARKS AND THEIR OFFSET POSITIONS.

SERVICES

1. PIPES, CABLES AND OTHER UTILITIES ON THIS DRAWING ARE BASED ONLY ON READILY AVAILABLE RECORD PLANS AND OTHER INFORMATION. THIS INFORMATION MAY NOT BE COMPLETE, ACCURATE NOR UP TO DATE. PRIOR TO CARRYING OUT ANY EXCAVATION OR OTHER PHYSICAL WORKS, CONTRACTORS SHALL OBTAIN THE LATEST INFORMATION FROM UTILITY PROVIDERS AND CARRY OUT DETAILED EXPLORATORY WORK, TRACING, LOCATING, PROTECTION AND ALTERATIONS AS ARE REQUIRED UNDER NZS 3910 CLAUSE 5.13.
2. FOR 'EXISTING SERVICES' PLEASE REFER TO C200 SERIES DRAWINGS.

GENERAL

1. CADASTRAL BOUNDARIES ARE INDICATIVE ONLY AND TO BE VERIFIED BY SURVEY.
2. ALL DIMENSIONS IN METRES UNLESS OTHERWISE NOTED.
3. WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS. ANY DISCREPANCY SHALL BE REFEREED TO THE ENGINEER.
4. ALL LOCATIONS OF HYDRAULIC STRUCTURES TO BE CONFIRMED ON SITE.

BARRIERS

1. ALL ROAD SAFETY BARRIER SYSTEMS ARE TO BE IN COMPLIANCE WITH NZTA M23 AND RELEVANT NZTA STANDARD DRAWINGS.
2. INSTALL ALL ROAD SAFETY BARRIER SYSTEMS IN ACCORDANCE WITH THE MANUFACTURERS REQUIREMENTS.
3. EXISTING ROAD SAFETY BARRIERS TO BE RECOVERED, CHECKED FOR DAMAGE AND REUSED WITH NEW FIXING HARDWARE AS APPROPRIATE.
4. REFER TO EXISTING SERVICE SERIES C200 FOR EXPECTED SERVICE LOCATIONS
5. ALL BARRIERS TO BE INSTALLED WITH ASSOCIATED DELINEATION IN ACCORDANCE WITH WAKA KOTAHI TM-2014

ROAD MARKINGS AND SIGNS

1. ALL SIGNS AND MARKINGS SHOULD BE IN ACCORDANCE WITH TCD / MOTSAM

SERVICES LEGEND

- WELLINGTON ELECTRIC 400V
- WELLINGTON ELECTRIC 11kV
- VODACOM
- VODACOM (PLANNED) - POSSIBLY OBSOLETE
- SEWER TRUNK MAIN
- WATER
- POWERCO GAS
- CHORUS (INFO TO BE SOURCED)

NOT FOR CONSTRUCTION

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	09.2022
DRAWN	Janco Jordaan	09.2022
CAD REVIEW		
DESIGN CHECK		
DESIGN REVIEW		
APPROVED	NOT APPROVED	
PROF REGISTRATION:		

Stantec

Client:

BENMORE CRESCENT

LOCALITY, SERVICES PLAN AND NOTES

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: AS SHOWN

Drawing No.: 310204837-01-100-C100

Rev.: A

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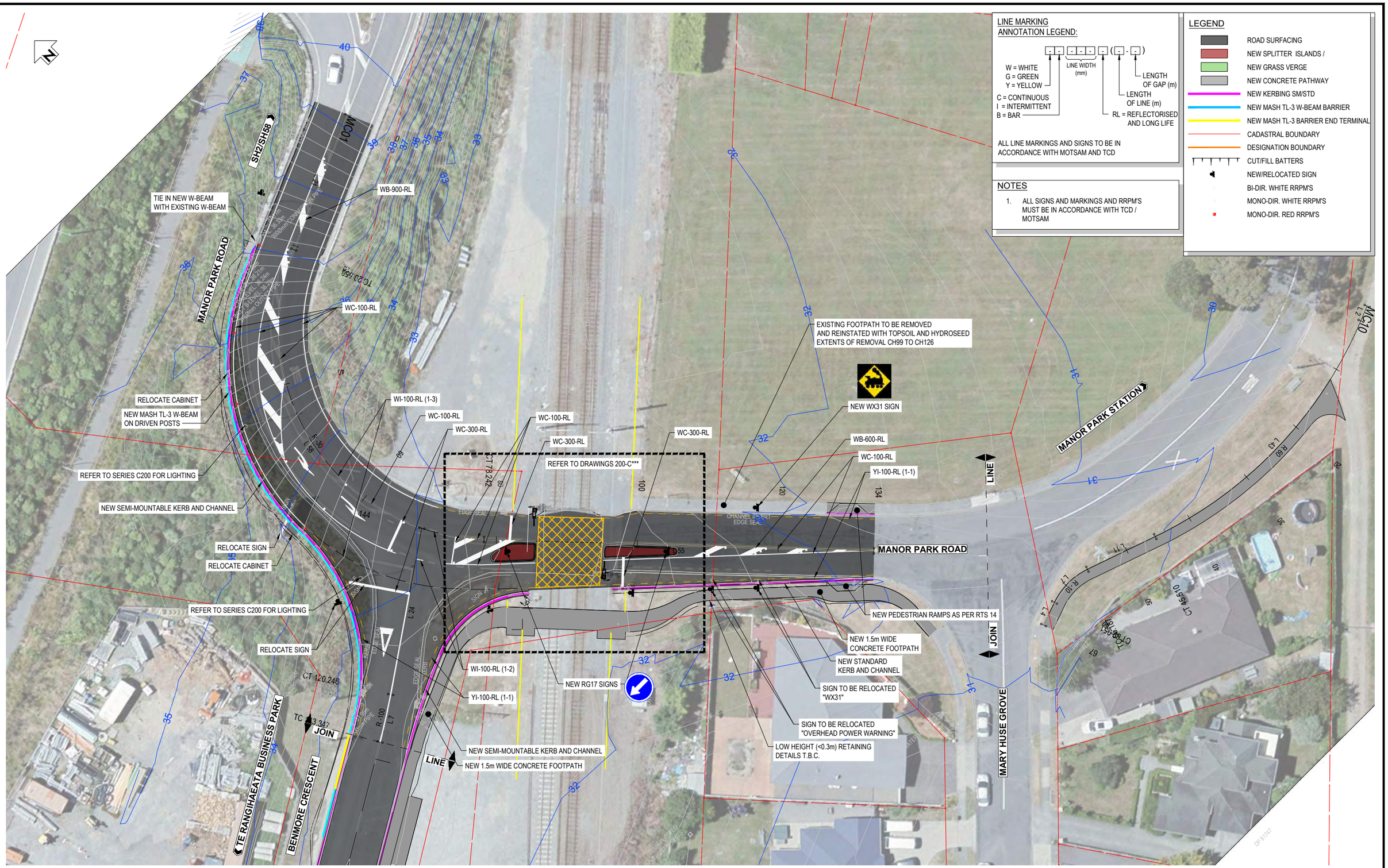

PLAN

SCALE 1 : 250 @ A1

NOT FOR CONSTRUCTION

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	09.2022
DRAWN	Janco Jordaan	09.2022
CAD REVIEW		
DESIGN CHECK		
DESIGN REVIEW		
APPROVED	**NOT APPROVED**	
PROF REGISTRATION:		

Stantec

Client:

BENMORE CRESCENT

GENERAL ARRANGEMENT
MANOR PARK ROAD - MC01

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales: AS SHOWN

Drawing No.: 310204837-01-100-C101

Rev.: A

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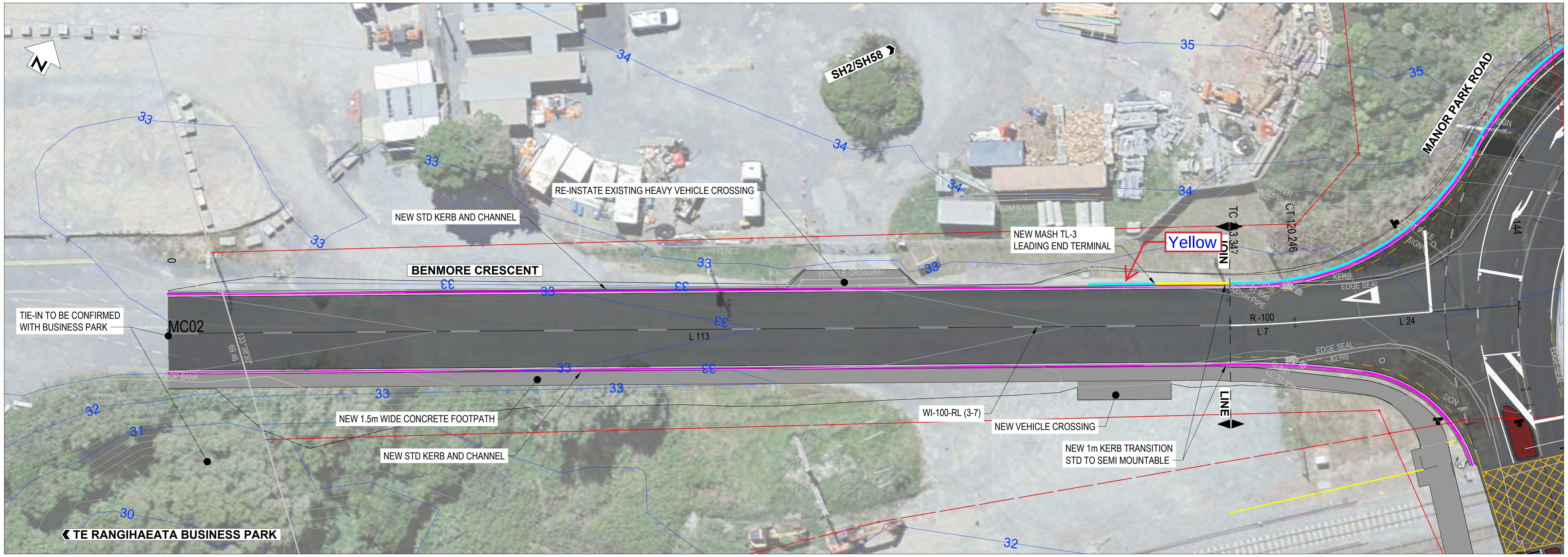


PLAN
SCALE 1 : 250 @ A1

LEGEND

- ROAD SURFACING
- NEW SPLITTER ISLANDS /
- NEW GRASS VERGE
- NEW CONCRETE PATHWAY
- NEW KERBING SM/STD
- NEW MASH TL-3 W-BEAM BARRIER
- NEW MASH TL-3 BARRIER END TERMINAL
- CADASTRAL BOUNDARY
- DESIGNATION BOUNDARY
- CUT/FILL BATTERS
- NEW/RELOCATED SIGN
- BI-DIR. WHITE RRPM'S
- MONO-DIR. WHITE RRPM'S
- MONO-DIR. RED RRPM'S

Background

LINE MARKING ANNOTATION LEGEND:

- - (- -)

W = WHITE
G = GREEN
Y = YELLOW

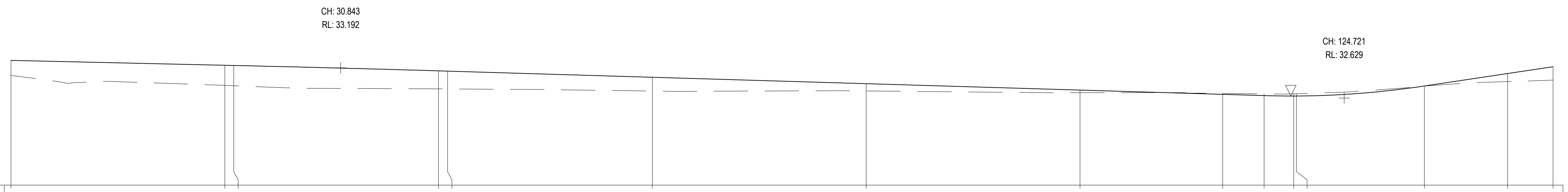
C = CONTINUOUS
I = INTERMITTENT
B = BAR

LINE WIDTH (mm)
RL = REFLECTORISED AND LONG LIFE
LENGTH OF LINE (m)
LENGTH OF GAP (m)

ALL LINE MARKINGS AND SIGNS TO BE IN ACCORDANCE WITH MOTSAM AND TCD

NOTES

1. ALL SIGNS AND MARKINGS AND RRPM'S MUST BE IN ACCORDANCE WITH TCD / MOTSAM



DATUM RL 31.00

DESIGN LEVEL	33.332	33.241	33.238	33.137	33.132	33.017	32.897	32.777	32.697	32.674	32.667	32.667	32.854	33.087	33.215
EXISTING LEVEL	33.052	32.865	32.858	32.800	32.799	32.759	32.760	32.728	32.716	32.707	32.708	32.709	32.851	32.936	32.964
CUT/FILL	0.280	0.376	0.379	0.337	0.333	0.258	0.137	0.049	-0.018	-0.033	-0.041	-0.042	0.003	0.151	0.251
CHAINAGE	0.000	20.000	20.843	40.000	40.843	60.000	80.000	100.000	113.347	117.221	120.000	120.246	132.221	140.000	144.251

HORIZONTAL GEOMETRY	L=113.35	R=-100 L=6.9	L=24

VERTICAL GEOMETRY	P=-0.45% L=20.84	K=135.73 L=20	P=-0.6% L=76.38	K=4.17 L=15	P=3% L=12.03

SUPERELEVATION

MC02 - LONGITUDINAL SECTION
SCALES - HZ 1:250
VT 1:50

NOT FOR CONSTRUCTION

REV	REVISIONS	DRN	CHK	APP	DATE

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	09.2022
DRAWN	Janco Jordaan	09.2022
CAD REVIEW		
DESIGN CHECK		
DESIGN REVIEW	NOT APPROVED	
APPROVED		
PROF REGISTRATION:		

Stantec

Client: ROSCO INDUSTRIAL

BENMORE CRESCENT

GENERAL ARRANGEMENT

Status Stamp: **WORKING PLOT**
Date Stamp:
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C102
Rev.:

ORIGINAL SIZE A1

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LEGEND

- NEW ROAD PAVEMENT
- NEW CONCRETE ISLANDS/PATH
- NEW PAVEMENT/SURFACING OVER RAIL

NOTES

1. PAVEMENT DESIGN AND EXTENTS ARE TO BE CONFIRMED

PLAN

SCALE 1 : 500 @ A1

DO NOT SCALE - IF IN DOUBT, ASK

ORIGINAL SIZE A1

NOT FOR CONSTRUCTION

REV	REVISIONS	DRN	CHK	APP	DATE

SURVEYED	SPENCER HOLMES	08.2022
DESIGNED	Janco Jordaan	09.2022
DRAWN	Janco Jordaan	09.2022
CAD REVIEW		
DESIGN CHECK		
DESIGN REVIEW		
APPROVED	NOT APPROVED	
PROF REGISTRATION:		

Stantec

Client:

BENMORE CRESCENT

PAVEMENT PLAN

Status Stamp: **WORKING PLOT**

Date Stamp:

Scales:

Drawing No.: 310204837-01-100-C600

Rev.: A

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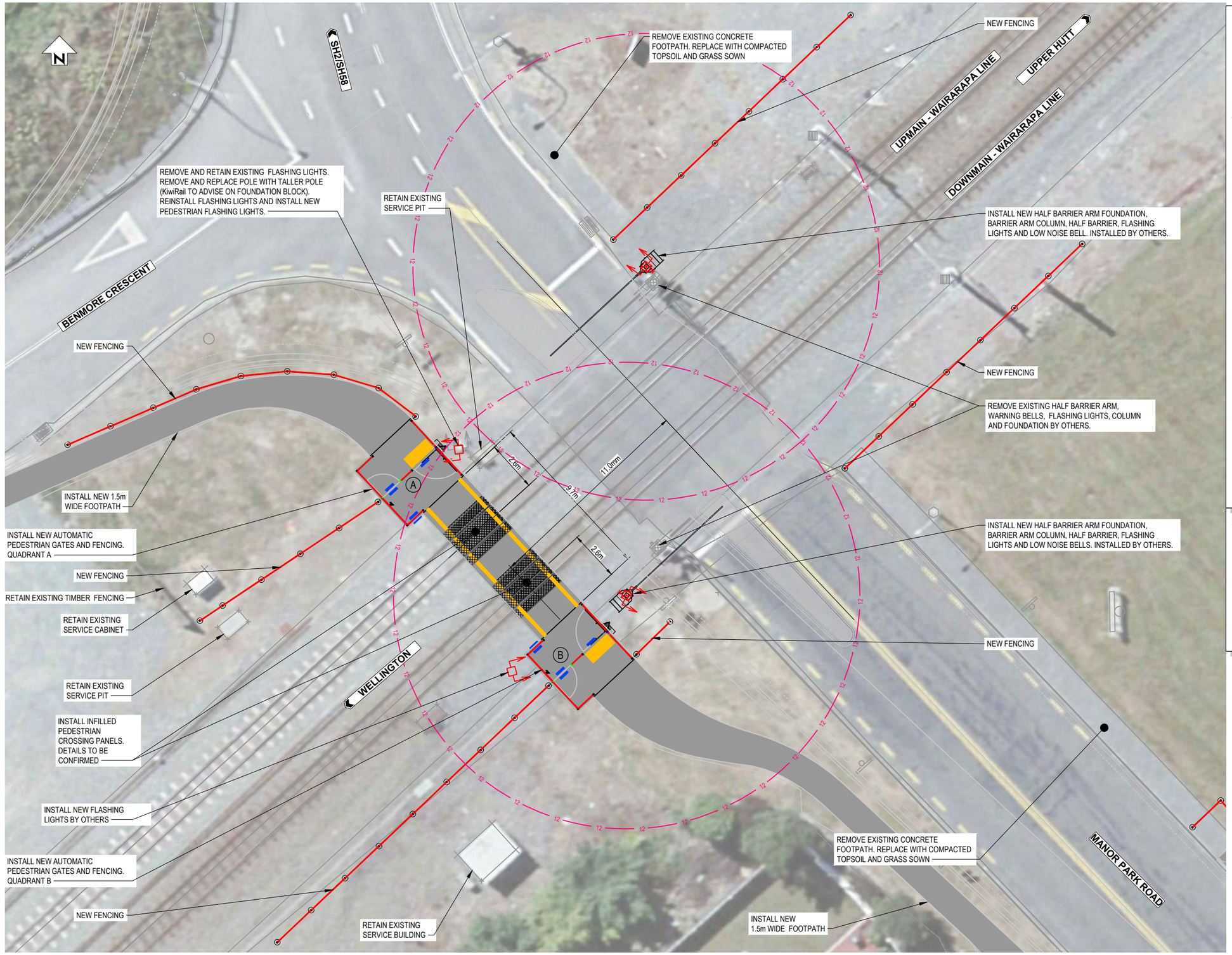

LEGEND:

- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS AND LOW LEVEL BELLS.
- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS.
- NEW VEHICLE BARRIER ARM WITH ONE PAIR OF FLASHING LIGHTS AND BELL. "RAILWAY", "2", " TRACKS" SIGNS
- EXISTING PAIR OF FLASHING LIGHTS AND BELLS
- EXISTING PAIR OF LIGHTS
- EXISTING BELLS
- EXISTING VEHICLE BARRIER ARM
- NEW TGSI TACTILE INDICATOR 300x300
- NEW TGSI TACTILE INDICATOR 300x150
- PROPOSED NEW FOLDED WIRE FENCE
- (A) GATE REFERENCE
- NEW 65mm POST
- NEW 75mm POST
- NEW 90mm POST
- NEW DUCT
- NEW MARLEY PIT
- LOW NOISE

NOTE:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH:
   - C002 STANDARD NOTES;
   - C003 STANDARD GATES DETAILS;
   - C004 STANDARD FENCE AND SIGNS DETAILS.
2. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE COMMENCING CONSTRUCTION.
3. ALL UNDER TRACK DUCTS TO BE INSTALLED AS PER THE REQUIREMENTS OF S-ST-CW-2140, PARTICULARLY SECTIONS 12 AND 13.
4. ALL SETOUT DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE QUADRANT DETAIL DRAWINGS.

2 0 5m
SCALE 1:100

PLAN
SCALE 1 : 100

NOT FOR CONSTRUCTION

DO NOT SCALE - IF IN DOUBT, ASK
ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE

SURVEYED		
DESIGNED		11.2022
DRAWN		11.2022
CAD REVIEW		
DESIGN CHECK		
DESIGN REVIEW		
APPROVED		
PROF REGISTRATION:		

Stantec

Client:

BENMORE CRESCENT

MANOR PARK ROAD - PEDESTRIAN RAIL CROSSING
GENERAL LAYOUT PLAN

Status Stamp: **WORKING PLOT**
Date Stamp:
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C301
Rev.: A

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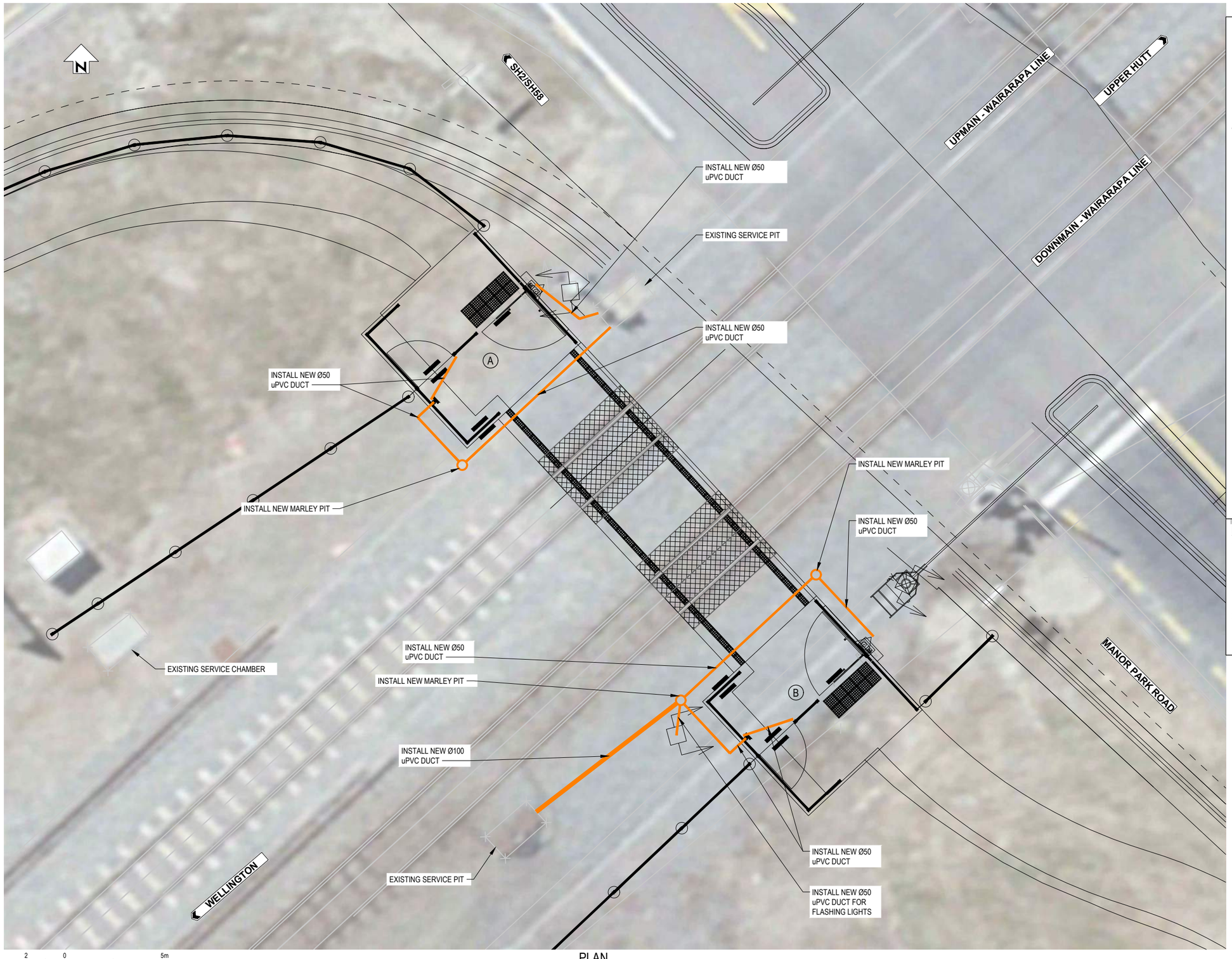

2 0 5m
SCALE 1:100

PLAN
SCALE 1 : 100

LEGEND:

- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS AND LOW LEVEL BELLS.
- NEW MAST FITTED WITH ONE PAIR OF FLASHING LIGHTS.
- NEW VEHICLE BARRIER ARM WITH ONE PAIR OF FLASHING LIGHTS AND BELL. "RAILWAY", "2", " TRACKS" SIGNS
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- EXISTING PAIR OF LIGHTS
- EXISTING BELLS
- EXISTING VEHICLE BARRIER ARM
- NEW TGSI TACTILE INDICATOR 300x300
- NEW TGSI TACTILE INDICATOR 300x150
- PROPOSED NEW FOLDED WIRE FENCE
- (A) GATE REFERENCE
- NEW 65mm POST
- NEW 75mm POST
- NEW 90mm POST
- NEW DUCT
- NEW MARLEY PIT
- LOW NOISE

NOTE:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH:
   - C002 STANDARD NOTES;
   - C003 STANDARD GATES DETAILS;
   - C004 STANDARD FENCE AND SIGNS DETAILS.
2. ALL DIMENSIONS TO BE CHECKED ON SITE BEFORE COMMENCING CONSTRUCTION.
3. ALL UNDER TRACK DUCTS TO BE INSTALLED AS PER THE REQUIREMENTS OF S-ST-CW-2140, PARTICULARLY SECTIONS 12 AND 13.
4. ALL SETOUT DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE QUADRANT DETAIL DRAWINGS.

NOT FOR CONSTRUCTION

DO NOT SCALE - IF IN DOUBT, ASK
ORIGINAL SIZE A1

REV	REVISIONS	DRN	CHK	APP	DATE

SURVEYED		
DESIGNED		11.2022
DRAWN		11.2022
CAD REVIEW		
DESIGN CHECK		
DESIGN REVIEW		
APPROVED		
PROF REGISTRATION:		

Stantec

Client:

BENMORE CRESCENT

MANOR PARK ROAD - PEDESTRIAN RAIL CROSSING
DUCTING LAYOUT PLAN

Status Stamp: **WORKING PLOT**
Date Stamp:
Scales: AS SHOWN
Drawing No.: 310204837-01-100-C307
Rev.: A

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DESIGN WITH COMMUNITY IN MIND

Communities are fundamental. Whether around the corner or across the globe, they provide a foundation, a sense of place and of belonging. That's why at Stantec, we always design with community in mind.

We care about the communities we serve—because they're our communities too. This allows us to assess what's needed and connect our expertise, to appreciate nuances and envision what's never been considered, to bring together diverse perspectives so we can collaborate toward a shared success.

We're designers, engineers, scientists, and project managers, innovating together at the intersection of community, creativity, and client relationships. Balancing these priorities results in projects that advance the quality of life in communities across the globe.

Stantec trades on the TSX and the NYSE under the symbol STN.
Visit us at stantec.com or find us on social media.

Level 15, 10 Brandon Street, Wellington Central
PO Box: 13-052 Armagh, Christchurch 8141
New Zealand | www.stantec.com

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Level 15, 10 Brandon Street, Wellington Central
PO Box 13-052 Armagh, Christchurch 8141
New Zealand | www.stantec.com

Appendix 11: Acoustic Assessment – Tonkin and Taylor

REPORT

Tonkin+Taylor

Waste Management NZ - Manor Park

Acoustic assessment

Prepared for
Waste Management NZ
Prepared by
Tonkin & Taylor Ltd
Date
31 October 2022
Job Number
1015081 v1

Together we create and sustain a better world
www.tonkintaylor.co.nz

Document control

Title: Waste Management NZ - Manor Park					
Date	Version	Description	Prepared by:	Reviewed by:	Authorised by:
19/10/22	1	DRAFT	A Healy	D Humpheson	
31/10/22	1	FINAL	A Healy	D Humpheson	C Hillman

Distribution:

Waste Management NZ	1 PDF copy
Tonkin & Taylor Ltd (FILE)	1 electronic copy

Table of contents

1 Introduction

Waste Management New Zealand Ltd (Waste Management) is proposing to construct and operate a waste transfer facility off Benmore Crescent, Manor Park, Lower Hutt.

Tonkin & Taylor Ltd (T+T) has been engaged to provide an acoustic assessment for the construction and operation of this facility. The work is conducted in accordance with our agreement dated 18 July 2022.

The planned Waste Management site will include operational facilities, office and maintenance buildings, and carparking for Waste Management trucks and staff vehicles. The operational facilities include a recycling transfer station, a construction and demolition waste recycling facility, and a materials recovery facility.

These services are currently offered at two sites in Seaview, Lower Hutt. The development of this facility will combine all services in a single location.

The site location is shown in Figure 1.1.

Figure 1.1: Location of proposed Waste Management site

2 Performance standards

2.1 Hutt City District Plan

The area to be occupied by Waste Management NZ is zoned General Rural in the HCDP. Properties nearby are zoned General Residential, General Recreational, General Business, and General Rural.

The relevant noise standards are set out in Rule 14C of the HCDP. The objective of the noise rules is stated as:

> *To maintain or enhance the amenity value of all activity areas by ensuring that the adverse effects of excessive noise on the environment are avoided or mitigated.*

The policies guiding the development of the HCDP rules are:

a To recognise that background noise levels are markedly different throughout the city.

b To recognise that acceptable noise levels will vary according to the nature of the principal activities occurring within activity areas.

c To ensure that residential activity areas are protected by establishing appropriate noise levels at the interface between residential activity areas and non-residential activity areas.

d That maximum noise levels are established within each activity area to ensure that amenity values are protected.

e To make provision for those situations where there has already been considerable history to the establishment of specified noise conditions.

f To recognise that noise levels may be different through a construction phase.

g To recognise that Noise Management Plans may be appropriate to manage matters beyond those addressed in this District Plan.

The noise standards of Rule 14C are:

> *14C 2.1 Permitted Activity – Conditions*
>
> *In all Activity Areas*
>
> *(c) The noise levels shall be measured in accordance with NZS 6801:1991 "Measurement of Sound", and assessed in accordance with NZS 6802: 1991 "Assessment of Environmental Sound". The noise level is the L_{10} descriptor, as defined in NZS 6801:1991.*
>
> *(d) The lower levels shall apply between the commencement of the lower level on a Saturday evening and Monday morning, and Public Holidays, unless otherwise specified.*
>
> *(f) All construction, demolition, and maintenance work shall comply with NZS 6803P 'Measurement and Assessment of Noise from Construction, Maintenance and demolition work".*

The site is zoned as General Rural, therefore the following permitted activity noise standards apply:

> *14C 2.1.10 General Rural Activity Area*
>
> *All non-residential activities must not exceed the conditions as specified, measured anywhere beyond the site on which the activity takes place:*
>
> *Maximum 50 dBA 7:00 am – 10:00 pm*
>
> *Maximum 40 dBA 10:00 pm – 7:00 am*

2.2 NZS 6803:1999

HCDP permitted activity noise standard 14C 2.1(f) requires that all construction, demolition, and maintenance work shall comply with *NZS 6803P "Measurement and Assessment of Noise from Construction, Maintenance and Demolition Work".* The provisional version of NZS 6803 has been replaced with the 1999 version of the Standard.

The construction noise limits of NZS 6803:1999 are detailed in Table 2.1 and apply at 1 m from the façade of residential dwellings. Normal construction hours are highlighted. It would be unusual for construction work to occur outside these hours.

Table 2.1: Construction noise limits for residential dwellings taken from Table 2 of NZS 6803:1999

Time of week	Time period	Duration of work					
		Up to 14 calendar days		Between 2 weeks and 20 weeks		Greater than 20 weeks	
		LAeq	LAmax	LAeq	LAmax	LAeq	LAmax
Weekdays	6:30 am – 7:30 am	65	75	60	75	55	75
	7:30 am – 6:00 pm	80	95	75	90	70	85
	6:00 pm – 8:00 pm	75	90	70	85	65	80
	8:00 pm – 6:30 am	45	75	45	75	45	75
Saturdays	6:30 am – 7:30 am	45	75	45	75	45	75
	7:30 am – 6:00 pm	80	95	75	90	70	85
	6:00 pm – 8:00 pm	45	75	45	75	45	75
	8:00 pm – 6:30 am	45	75	45	75	45	75
Sundays and public holidays	6:30 am – 7:30 am	45	75	45	75	45	75
	7:30 am – 6:00 pm	55	85	55	85	55	85
	6:00 pm – 8:00 pm	45	75	45	75	45	75
	8:00 pm – 6:30 am	45	75	45	75	45	75

3 Project criteria

3.1 Noise

Construction is anticipated to last longer than 20 weeks and be undertaken throughout the hours of 7:30 am – 6:00 pm Monday to Saturday. The applicable construction noise limits are included in Table 3.1. Construction noise limits apply at the 1 m from the façade of any occupied dwelling.

Table 3.1: Construction noise limits during regular hours

Hours of construction	Noise limit
Monday to Saturday 7:30 am to 6:00 pm	70 dB $L_{Aeq(15min)}$
	85 dB L_{Amax}

Works outside of these hours will be required to comply with the limits for works greater than 20 weeks in duration in Table 2.1.

Operation of the facility will be required to comply with the rural zone limits in the HCDP. The permitted activity limits for this zone are included in Table 3.2. Operational noise limits apply at the notional boundary of any occupied dwelling. The notional boundary is up to 20 m from the closest point of the dwelling, but not beyond the property boundary.

Table 3.2: Operational noise permitted activity limits

Zone	Noise limit	Hours
General Rural	50 dB	7:00 am – 10:00 pm
	40 dB	10:00 pm – 7:00 am

3.2 Vibration

There are no vibration limits in the HCDP. Standard practice in New Zealand is to use the vibration guideline levels in German vibration standard DIN 4150-3:1999. These guidelines, as reproduced in Table 3.3, when applied to residential buildings relate to the potential for vibration to cause cosmetic damage. Vibration is only a concern during construction of the proposed development.

Table 3.3: Project vibration limits

Line	Type of structure	Vibration at the foundation at a frequency of			Vibration at horizontal plane of the highest floor
		1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz	All frequencies
2	Dwellings and buildings of similar design and/or occupancy	5 mm/s	5 to 15 mm/s	15 to 20 mm/s	15 mm/s

4 Existing environment

The existing noise environment is dominated by SH2 (sometimes referred to as the Western Hutt Road, or the Hutt Expressway). Trains on the Hutt rail line will create isolated noise events with elevated noise levels at the residential properties on Mary Huse Grove.

The nearest residential receivers are on Mary Hulse Grove, to the east of the site. The closest being number 27; approximately 45 m from the nearest corner of the site. The nearest receivers to the south are on High Street, approximately 230 m from the southern border of the site. There are no sensitive receivers in the vicinity to the west or north.

The nearest sensitive receivers on Mary Huse Grove, and two receivers representative of the closest receivers on High Street are identified in Figure 4.1.

Figure 4.1: Location of nearest receivers

5 Operations

5.1 Site details

A plan of the facility is shown in Figure 5.1 and includes:

- Recycling transfer station
- Materials recovery facility
- Construction and demolition waste recycling
- Workshop
- Office facilities
- Truck wash
- Parking

The Transfer Station will operate between 7 am and 6 pm 7 days per week. Outside of those hours some heavy vehicles will leave site from the parking area. The bulk of heavy vehicle movements

during night-time hours will be within 6 am and 7 am. The site will be open at all hours for staff parking on the western edge of the site by Western Hutt Road (SH2).

It is anticipated that an average day will see 604 vehicle movements, including 275 light vehicle and 329 heavy vehicle movements.

Most movements will occur during daytime hours. Over the night-time period some heavy vehicles will leave the parking area following the path closest to the western site boundary, i.e. furthest from the closest residential receivers. Staff who arrive in personal vehicles between 10 pm and 7 am will access staff carparking directly, without following the route around the RTS Operations workshop, which would take them closer to the receivers.

There will be some additional operations from small industrial vehicles such as forklifts and bobcats. These are expected to operate within buildings and on the concrete pad. The contribution of these to the total noise situation would be negligible.

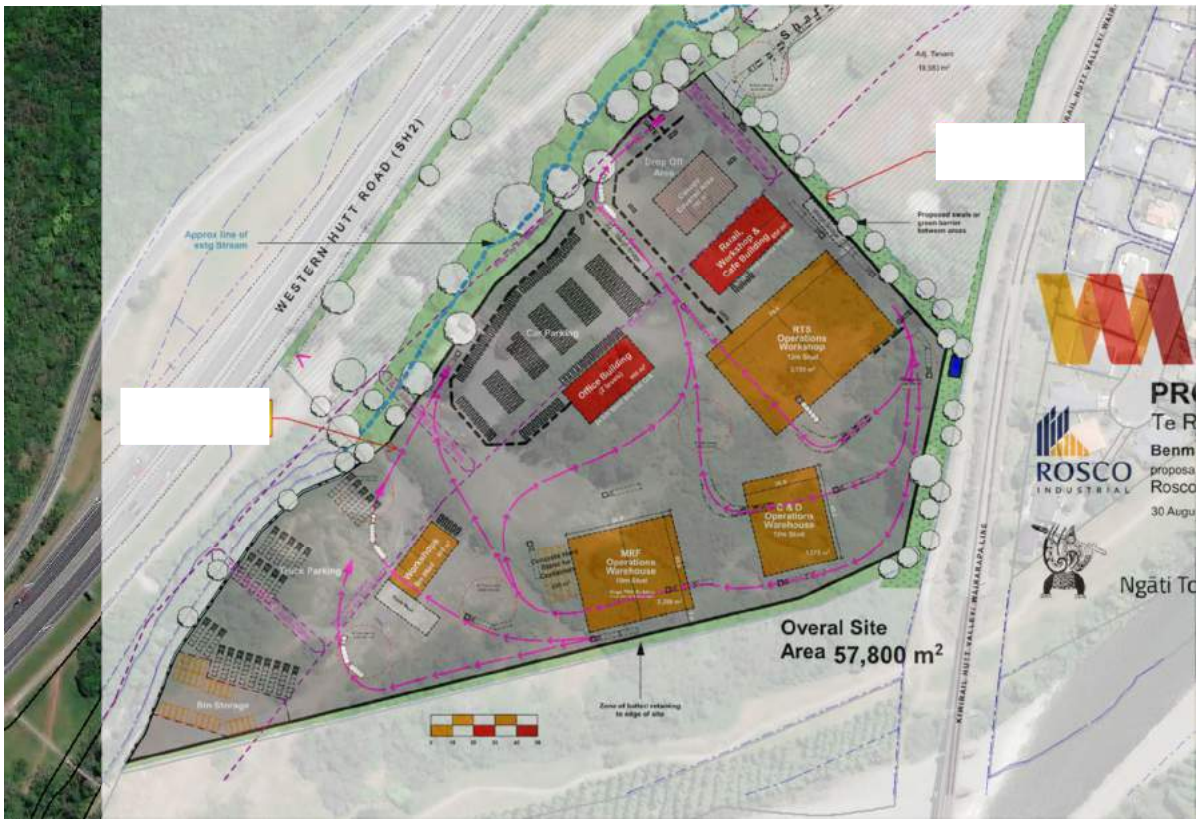

Figure 5.1: Site plan

5.2 Noise level data

Likely operational noise levels are listed in Table 5.1 and Table 5.2.

Table 5.1: Noise levels from site operations

Activity	Noise source	Source data		
		Data source	Sound pressure level at 10 m - L_{pA}	Modelled sound power - L_{WA}
Transfer Station	Front-end loader	Technical datasheet (Case 521G)	74 dB	102 dB
	Small excavator (24t)	BS5228-1 Table C.8 (10)	59 dB	87 dB
Materials recovery facility	Baler	BS5228-1 Table C.8 (4)	80 dB	108 dB
	Electric materials handler	Technical datasheet (Liebherr)	74 dB	102 dB
Construction and demolition waste recycling	Incline conveyer	BS5228-1 Table C.10 (21)	76 dB	104 dB
	Electric materials handler	Technical datasheet (Liebherr)	74 dB	102 dB
Workshop	Internal - General operation areas	Sherwin, 1996. Accessed from ACC.co.nz	55 – 71 dB[1]	99 dB
Truck wash and bin wash	Pressure washer	Technical datasheet (Karcher HD 6/15)	62 dB	90 dB
General site activities	Electric forklift Electric bobcat	BS52280-1 Table D.7 (96) T+T Library	77 dB 76 dB	Not modelled, likely operating in buildings

[1]Internal sound pressure level

Table 5.2: Noise levels from vehicles on site

Period	Activity	Noise source	Source data		
			Data source	Sound pressure level at 10 m - L_{pA}	Modelled sound power - L_{WA}
daytime	Trucks accessing RTS	WM truck at 24/hour	Measured	74 dB (per truck) (max from passby) L_{WA} 107 dB	116 dB @ 10km/h
	Light vehicles accessing RTS	Utes at 17/hour	T+T Library	70 dB (per ute) L_{WA} 98 dB	110 dB @10km/h
	Trucks accessing parking	WM trucks at 7/hour	Measured	74 dB (per truck) (max from passby) L_{WA} 107 dB	110 dB @10km/h

	Light vehicles accessing parking	Utes at 7/hour	T+T Library	70 dB (per ute) L_{WA} 98 dB	106 dB @10km/h
Night-time	Trucks leaving parking	WM trucks at peak of 12 movements between 6am and 7am	Measured	74 dB (per truck) (max from passby) L_{WA} 107 dB	116 dB @10km/h
	Light vehicles accessing parking	Utes at 8/hour	T+T Library	70 dB (per ute) L_{WA} 98 dB	107 dB @10km/h

6 Construction

The site will need to be cleared, new buildings constructed, and parking areas paved. The expected phases of construction, plant used, and predicted noise levels are detailed in Table 6.1.

Table 6.1: Phases and associated noise levels

Stage or Phase	Noise source	Source data		
		Data source	Sound pressure level at 10 m - L_{pA}	Duty cycle over 15-minutes
Site clearance	Excavator 20t	Library	74 dB	80%
	Trucks	Library	72 dB	80%
	Bulldozer	Library	76 dB	80%
	Chainsaw	Library	68 dB	50%
Earthworks	Bulldozer	Library	76 dB	80%
	Excavator 20t	Library	74 dB	80%
	Trucks	Library	72 dB	80%
	Roller	Library	78 dB	80%
Paving	Asphalt paver + tipper lorry	BS5228	75 dB	100%
Construction of buildings	Hand tools (rattle gun)	Library	65 dB	80%
	General works	Library	67 dB	100%
	Mobile crane	Library	73 dB	50%

The two largest sources of vibration during general construction projects are piling and vibratory rolling. Piling is not anticipated for this site. If it is required as part of foundation construction, it is unlikely to be perceptible at any receivers due to the distance of the site buildings from the nearest residences.

Vibratory rolling may be required during earthworks. Prior measurements showed the vibration on a concrete foundation from a vibratory roller was approximately 1.6 mm/s Peak Particle Velocity (PPV) at 20 m from the works.

7 Predicted noise levels

7.1 Operation

Operational noise levels have been modelled using the industry standard software SoundPlan 8.2. In order to assess compliance during the daytime and night-time hours two scenarios were assessed:

- Daytime operation – All plant operating including transfer station and vehicles on site.
- Night-time peak operation – limited Waste Management vehicles leaving/parking and light vehicles of staff arriving and parking.

The daytime scenario accounts for all mobile plant in the operational buildings operating continuously over a full daytime period alongside vehicle movements on site.

The night-time scenario is based on the expected number of workers arriving on site by light vehicle during the busiest 15-minutes between 6 am and 7 am, and the advised number of heavy vehicles leaving site parking between 6 am and 7 am.

Noise levels were calculated at the closest three properties on Mary Huse Drive and two indicative properties on High Street, as shown in Table 7.1.

Table 7.1: Worst-case operational noise levels at nearby receivers

Address	27 Mary Huse Grove	29 Mary Huse Grove	31 Mary Huse Grove	1397 High Street	1404 High Street
Daytime	46 dB	48 dB	46 dB	36 dB	37 dB
Night-time	25 dB	27 dB	26 dB	30 dB	28 dB

Operational noise levels are compliant with Rule 14 C 2.1.10 during both the daytime and night-time period.

A noise survey undertaken by T+T in March 2022 showed that background noise levels on and around Mary Huse Grove fluctuated around 45-51 dB(A) when measured during one of the quietest periods of the day for motorway traffic (12.40pm - 1.40 pm).

The anticipated noise levels due to operation of the site during the day will be similar to the existing noise environment and the effects of the proposed development on nearby residential receivers are considered reasonable.

7.2 Construction

Construction noise levels at the closest sensitive residential receiver, 27 Mary Huse Grove, have been predicted. All works in each phase of construction are assumed to be operating concurrently at the closest location to the property and therefore this represents a conservative estimate of the maximum noise level which may be experienced.

All groundwork and site preparation phases are assumed to be active over the entirety of the site and may be as close as 45 m to the property. Construction of the site buildings will be 90 m from the property at the closest point.

The estimated noise levels from each phase are provided in Table 7.2.

Table 7.2: $L_{Aeq(15\ min)}$ at the closest sensitive receiver (27 Mary Huse Grove) during construction

Phase of construction	Site clearance	Earthworks	Paving	Construction of buildings
$L_{Aeq(15min)}$ at facade	67 dB	69 dB	65 dB	54 dB

Construction noise levels are compliant with NZS 6803 as experienced at the closest property during all phases of work. All more distant receivers will also comply with the 70 dB daytime noise limit.

Calculated noise levels do not account for topographical features. Therefore, actual noise levels are likely to be lower due to the noise screening from the rail bund.

It is unlikely that vibration from the construction activities will be perceptible at the nearest residential properties.

8 Summary

Waste Management is proposing to construct and operate a waste transfer facility off Benmore Crescent, Manor Park, Lower Hutt.

Construction of the facility is required to comply with the noise limits contained within NZS 6803:1999. A conservative assessment of noise during the expected construction phases demonstrated that the noise levels will comply with these limits at the closest property. All other properties will experience lower noise levels.

This site is currently zoned General Rural and to be a permitted activity the operations have to meet the rural zone noise limits during the day and at night. A noise model of the site operation was developed and modelled noise levels at all nearby residential properties comply with the General Rural zone noise limits. Operation of the site complies with the permitted activity noise standards.

9 Applicability

This report has been prepared for the exclusive use of our client Waste Management NZ, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

We understand and agree that our client will submit this report as part of an application for resource consent and that Hutt City Council as the consenting authority will use this report for the purpose of assessing that application.

Tonkin & Taylor Ltd
Environmental and Engineering Consultants

Report prepared by:

.....

Aaron Healy
Acoustic Consultant

Authorised for Tonkin & Taylor Ltd by:

.....

Chris Hillman
Project Director

AAHE
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www.tonkintaylor.co.nz

Appendix 12: Application for Servicing and Access – Spencer Holmes

S200380c01(RC to LHCC).docx

SpencerHolmes
engineers - surveyors - planners

PO Box 588
Level 10, 57 Willis Street
Wellington 6140, New Zealand
Phone 04 472 2261
Email admin@spencerholmes.co.nz

20 January 2023

Resource Consents Team
Environmental Consents Division
Hutt City Council
Private Bag 31912
Lower Hutt 5040

Attention: Resource Consents Team

Dear Sir/Madam,

Resource Consent Application - 30 Benmore Crescent, Manor Park

On behalf of the applicant, Rosco Ice Cream Ltd, we submit an electronic version of a resource consent application for earthworks at the above address.

This application is made pursuant to section 88 of the Resource Management Act 1991, and incorporates all information required by Form 9 and Schedule 4 to the Act.

Please issue an invoice for the processing fee deposit required by Council. The applicant intends to make payment of the fee via internet banking. We trust the attached information is satisfactory and look forward to your favourable response.

If you have any further queries, please do not hesitate to contact me on (04) 472 2261.

Yours faithfully
Spencer Holmes Limited

David Gibson
Associate - Planning

adg@spencerholmes.co.nz

Enc: RC Appln

Application for Land Use Consent

30 Benmore Crescent Manor Park

Spencer Holmes Limited
P O Box 588
WELLINGTON 6140
Phone: (04) 472 2261
Email: admin@spencerholmes.co.nz

January 2023
(S200380)
Prepared for: Rosco Ice Cream Ltd

FORM 9
APPLICATION FOR RESOURCE CONSENT UNDER SECTION 88 OF THE RESOURCE MANAGEMENT ACT 1991

TO: Hutt City Council
Private Bag 31-912
LOWER HUTT 5040

1. **Rosco Ice Cream Limited** (the Applicant) hereby applies for the following resource consents:

- **A land use consent:** For earthworks related to construction of roading and installation of civil infrastructure to serve future tenancies.

2. **Activity & Classification:**

The earthworks have been assessed as a restricted discretionary activity pursuant to rule 14I 2.2(a) of the District Plan.

3. **The location to which this application relates:**

Street Address: 30 Benmore Crescent, Manor Park

Figure 1: Location Aerial - Extract from GRIP Maps

4. **The owner of the site is: -**

Section 1 SO 493901 (RT 738223) is owned by Te Runanga O Toa Rangatira Incorporated. The Applicant has entered into a joint venture agreement with the owners.

5. **There are no other activities that are part of the proposal to which the application relates.**

6. Are any additional resource consents are needed for the proposed activity.

While the site is not listed on the GWRC SLUR register, a detailed site investigation (DSI) has been undertaken, which identified that the site has been subject to some historical activities included on the Hazardous Activities and Industries List (HAIL).

We note that a previous land use consent application for bulk earthworks (RM220258) includes consent under the NES Contaminated Soil.

Additionally, an application to GWRC will be made concurrently with this earthworks application. The GWRC Council application will include consents / permits for an urban development associated with earthworks over 3,000m^2.

7. Attached, in accordance with Clauses 6 & 7 of the Fourth Schedule of the Resource Management Act 1991, is an assessment of environmental effects in the detail that corresponds with the scale and significance of the effects that the proposed activity may have on the environment.

8. Attached is an assessment of the proposal against Part 2 Resource Management Act 1991.

9. Attached is an assessment of the proposal against Section 104(1)(b) Resource Management Act 1991 including any relevant objectives, policies or rules.

10. Also attached is any information required to be included in this application by the District Plan, a Regional Plan, the Resource Management Act 1991, or any regulations made under that Act.

The relevant assessment of environmental effects, proposal plans and other information required by the Hutt City District Plan are attached.

Rosco Ice Cream Limited
by their duly authorised agent

.....
David Gibson for Spencer Holmes Limited.

Date: January 2023

Address for Service:

Spencer Holmes Limited
Surveyors, Engineers & Planners
PO Box 588
WELLINGTON 6140

Telephone: (04) 472-2261
Email:

All Invoices to:

Rosco Ice Cream Limited
Attn: Richard Burrell

029 244 1913
richard@building-solutions.co.nz

ATTACHMENTS

1. Record of Title
2. Site Layout Plans
3. Earthworks Plans
4. Civil Engineering Drawings
5. Transportation Assessment
6. Landscape & Visual Assessment
7. Three Waters Infrastructure Assessment
8. KiwiRail Consultation
9. Waka Kotahi Consultation
10. Iwi Consultation
11. GWRC (Flood Protection) Consultation
12. Approved Earthworks Land Use Consent

CONTENTS

DESCRIPTION OF PROPOSAL & ASSESSMENT OF EFFECTS ON ENVIRONMENT

1 THE PROPOSAL

1.1 Background

The site was previously taken by the Crown in the 1950's for railway and motorway purposes and more recently used in association with the upgrading of State Highway Two, which adjoins the property. Upon completion of the highway works, the site was offered back to Ngati Toa Rangatira under their claims settlement. Te Runanga O Toa Rangatira Inc. acquired the land in March 2020. Subsequently, the applicant and Te Runanga O Toa Rangatira Inc. have formed a joint venture to develop the land.

The applicant has recently obtained land use consent to undertake bulk earthwork at the site under RM220258. Regional consents have also been obtained for the bulk earthworks and culverts works at the site WGN230031[38481][38482][38483]. Additionally, a further application for various resource consents related to urban development associated with the earthworks will also be lodged with Greater Wellington Regional Council, concurrently with this application.

1.2 Site History & Locality

This site was originally part of the Hutt River valley floor and used for horticultural activities. The original alignment of Dry Creek ran more directly (to the south-east) into the Hutt River. The realignment of the Wairarapa Rail Line in the mid-1950s resulted in Dry Creek being diverted and realigned to run to the south-west and more parallel with the (now) State Highway Two (SH2). The original alignment of the Wairarapa Railway has now become an internal access road through the site. A railway workers village was also established on the site in association with construction of the realignment of the Wairarapa Rail Line.

By the 1970's the southern portion of the site was being used for gravel and concrete batching associated with the construction of SH2. The central area was still used for horticultural activities with a number of sheds and greenhouses. The northern portion was occupied with a number of houses and cabins, which would appear to be from the railway workers village. Some of the more substantial houses survived into the late 1980s.

By the mid-1990s the buildings associated with the former railway workers village had been removed and various yard based industrial activities and sheds had established at the northern end of the property. In particular, the area between the railway and the realigned Dry Creek has been cleared and was used for (we understand) the abrasive blasting and coating of steel.

During late 1990's and early to mid-2000's various parts of the site on the eastern side of the realigned Dry Creek were filled substantially. The remainder of the site is largely vacant, though a paintball recreational activity and related obstacles was established at the southern end of the site during this period.

From the mid-2000's to the mid-2010's a number of medium sized industrial yard based activities had established at the northern end of the site off the end of Benmore Crescent.

From 2015, construction of the Hutt Expressway and Manor Park / SH58 interchange began. The various yard based activities continued until the expressway was completed.

An aerial photograph of the site circa 2021 is shown at Figure 2 below.

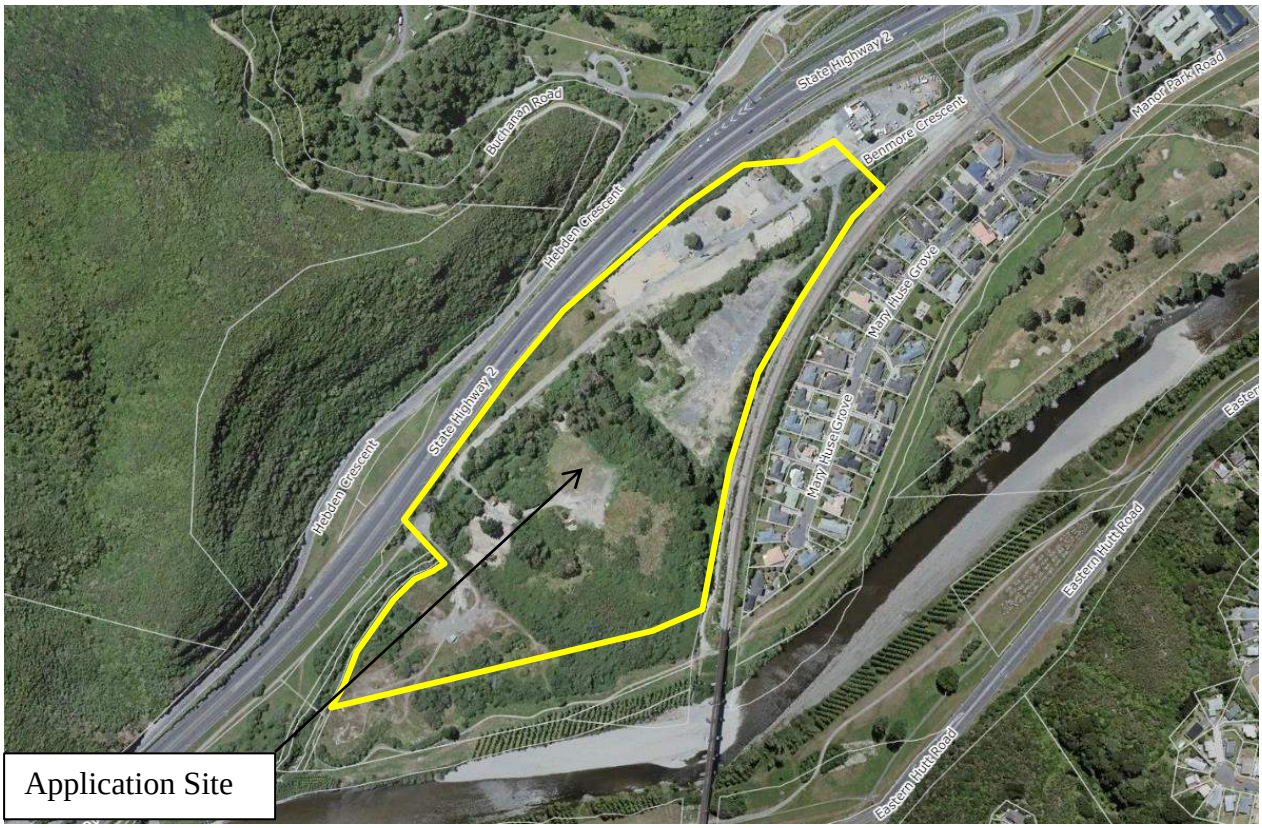

Figure 2: Aerial of Site – Extract from GRIP Maps

1.3 Site Description

The subject site is known as 30 Benmore Crescent, Manor Park and is located between State Highway Two (SH2) and the Wairarapa Rail Line, just to the south of the interchange with State Highway 58 and Manor Park Road. To the south of the site is the Hutt River corridor (GWRC owned), which includes cycling / walking trails. The works also involve off-site works within the legal road corridor of Benmore Crescent, Manor Park Road and within the Wairarapa Rail Line.

As the site is bounded by transport routes and the Hutt River it does not have any adjacent private neighbours. To the east, on the other side of the railway line there is a small enclave of residential properties on Mary Huse Grove.

Dry Creek runs through the site for a distance of approx. 620m. The average width of the stream is less than 3m within the site.

1.4 Legal Description

Section 1 SO 493901 (RT 738223) is owned by Te Runanga O Toa Rangatira Incorporated. The property has an area of 13.2121 ha.

A copy of the title is attached (Attachment 1). Encumbrance 11676592.2 is registered on the title in favour of the New Zealand Transport Agency. This encumbrance limits or specifies requirements for the follow on the site:

- Noise sensitive activities.
- Objections against state highway activities.
- Restricting state highway activities.

There are no restrictions on the title that would prevent the proposed earthworks and civil works.

1.5 Description of Proposal

1.5.1 Proposed Lease Areas

It is proposed to lease the site with three tenants initially. The overall layout of the site and the lease areas is shown on Harris Architects plan 2028 Rev C included as Attachment 2.

The term of the leases would be less than 35 years (including renewals), and thus does not require a subdivision consent. We note that Lease Area 3 may be split into further sub-tenancies in the future.

A private access road would be extended into the site from the end of Benmore Crescent to provide access to the lease areas. A 25m wide corridor containing Dry Creek would be excluded from the lease areas.

Table 1 below sets out the size of each of the lease areas.

Table 1: Subdivision Configuration

Lease Area	Area (ha)	Description
1	5.6901	Lease site for proposed resource recovery park. Accessed via private driveway from end of Benmore Crescent.
2	2.4612	Lease site for rural ancillary services on western side of Dry Creek. Accessed via private driveway from end of Benmore Crescent.
3	2.0665	Lease sites (3 or more) for rural ancillary services on eastern side of Dry Creek. Accessed via private driveway from end of Benmore Crescent.

1.5.2 Future Uses of Lease Areas

In respect of Area 1, the applicant has entered into a heads of agreement with Waste Management Ltd to establish a resource recovery park. A resource recovery park is a form of transfer station that is based around recycling and recovery of particular forms of waste. While a transfer station is not a permitted activity, it is provided for as a discretionary activity under rule 8B 2.3(e). Therefore, the use of Area 1 for a resource recovery park is anticipated by the District Plan. Waste Management Ltd are applying for a land use consent in respect of Area 1 to establish and operate a resource recovery park under a separate, but concurrent resource consent application.

The intended use of Areas 2 & 3 is not known at this stage. However, we note that rural ancillary activities and some commercial activities would be permitted. In addition, we note that commercial recreation, visitor accommodation, cafes/restaurants, retirement villages and intensive farming operations are provided for as restricted discretionary activities by the District Plan. Therefore, Areas 2 & 3 could be utilised by a range of activities, albeit that some activities my need to be authorised by further resource consents.

The permitted building coverage for the site is 1,000m^2, which would be utilised by the proposed resource recovery park. Therefore, any additional buildings within Areas 2 & 3 would also require further resource consents.

1.5.3 Benmore Crescent / Manor Park Road

Vehicle access to the site will be from the end of Benmore Crescent. Benmore Crescent is a short street off Manor Park Road and the Manor Park access ramp for State Highway Two.

It is anticipated that heavy vehicles will access the site, including trucks for the resource recovery park. Therefore, widening of the intersection of Benmore Crescent and Manor Park Road is required. Refer to the attached traffic report and intersection upgrade drawings by Stantec at Attachment 5.

The intersection of Benmore Crescent and Manor Park Road is controlled by Lower Hutt City Council, while the access ramp for SH2 is under the control of Waka Kotahi. The design of the intersection upgrade works have been undertaken in consultation with Waka Kotahi. As SH2 is subject to a designation, the written approval of Waka Kotahi is required in accordance with section 176 of the RMA. Consultation is currently underway with Waka Kotahi regarding details of the intersection and access ramp upgrade works. It is anticipated that a formal approval from Waka Kotahi will be obtained in the near future and submitted before processing of this application is completed.

Copies of consultation emails with Waka Kotahi are included as Attachment 9.

1.5.4 Manor Park Road Level Crossing

In conjunction with the upgrades to the intersection of Benmore Crescent and Manor Park Road, the level crossing over the Hutt Valley section of the Wairarapa Railway Line is also proposed to be upgraded. Refer to the attached traffic report and level crossing upgrade drawings by Stantec.

The upgrade works are required due to the widening of the nearby intersection of Benmore Crescent and Manor Park Road. The works involve widening of the vehicle carriageway for the level crossing (which will include raised medians) as well as adding a separate pedestrian crossing point beside the level crossing.

Stantec, on behalf of the applicant, has undertaken consultation with KiwiRail regarding the design of the proposed upgrade works. This has resulted in a "so far as is reasonably possible" (SFAIRP) agreement being signed by KiwiRail in respect of the proposed upgrade works to the level crossing. A so far as is reasonably possible approach is required as the level crossing and the proposed upgrades do not fully comply with the "level crossing risk assessment guidelines" (LCRAG).

As the Wairarapa Railway Line is subject to a designation, the written approval of Kiwi Rail is required in accordance with section 176 of the RMA. Consultation is currently underway with Kiwi Rail regarding the level crossing works. It is anticipated that a formal approval from Kiwi Rail will be obtained in the near future and submitted before processing of this application is completed.

Copies of consultation emails with Kiwi Rail are included as Attachment 8.

1.5.5 Internal Driveway Access

The initial section of the private driveway within the site will appear as an extension of Benmore Crescent. The driveway will then form a 'T' intersection with a second driveway turning to the south-east, while the main driveway continues toward the south-west, over the upgraded culvert

crossing of Dry Creek and into Area 2. This initial section of the driveway involves an 8.5m wide carriageway, 0.15m kerbs and with a 1.5m footpath on the eastern side.

The second driveway runs around the south-eastern side of Dry Creek and extends approx. halfway down the site providing access to Areas 1 & 3. This section of the driveway involves an 8.4m wide carriageway, 0.15m kerbs and with a 1.5m footpath on the eastern side.

There is a turning head at the end of the driveway on the south eastern side of Dry Creek.

1.5.6 Civil Infrastructure Services

The supply of three waters services to the site has been investigated by Vecta Ltd in their report included as Attachment 7.

The Vecta report notes that the provision of a standard water supply network for the subdivision is not possible due the current restrictions within the existing reticulated water supply. These restrictions include the small size of the existing reservoir ($232m^3$) supplying Manor Park as well as restrictions due to pipe sizes in the network.

1.5.6.1 Sewer

A trunk sewer main (Ø825mm) runs through the site. The trunk main passes under the railway line from the Mary Huse Grove area and passes under Dry Creek. The trunk main then runs down the alignment of the existing access track on the western side of the stream.

New shared private drains and public sewer mains will be installed for the proposed lease areas as shown on the civil engineering drawings included at Attachment 4. The new sewage network for Areas 1 & 3 on the eastern side of Dry Creek would run down to the southern area of the site, where the sewer pipe would cross over the stream (via a pipe support bridging structure) to join the trunk main.

1.5.6.2 Stormwater

New private stormwater networks would be installed for the proposed lease areas. There would be separate networks on each side of Dry Creek, which would discharge to the stream via specifically designed stormwater outlet systems. The layout of the stormwater networks is shown on the civil engineering drawings included at Attachment 4.

As large areas of the site would be sealed with impervious surfaces, the stormwater networks will include water sensitive design features to treat the quality of stormwater run-off for the discharge of stormwater from the site to Dry Creek.

The waste management resource recovery park in Area 1 will utilise water harvesting and re-use for vehicle washdown and WC flushing. This will require a number of above ground rainwater storage tanks, which will reduce the volume of stormwater discharged from the site.

1.5.6.3 Water Supply

A new watermain Ø200mm will be extended into the site from Manor Park Road, commencing on the eastern side of the railway line. The new watermain would pass under the railway crossing and then run along Benmore Crescent to the site. Within the site, the watermain would run down the private driveway. The new water main would feed a number of storage tanks on each tenancy area to hold water for suppling potable water to the proposed lease areas and also for fire-fighting purposes.

Given the water supply limitations, the future buildings would require sprinkler systems, which would be fed from the on-site storage tanks.

The on-site water storage tanks are an interim solution until such time as LHCC undertakes an upgrade to the Manor Park Reservoir and the local reticulated networks. A financial contribution would be payable by the applicant toward the cost of the water network upgrades.

1.5.7 Landscaping

Landscaping around the periphery of the site will be undertaken as shown on the Boffa Miskell plans included as Attachment 6. Riparian planting for restoration of Dry Creek would also be undertaken as recommended by Boffa Miskell.

The landscaping proposal includes planting within the Hutt River Corridor owned by GWRC. Consultation is currently underway with GWRC's Flood Protection team regarding details of the planting. It is anticipated that a formal agreement from GWRC will be obtained in the near future and submitted before processing of this application is completed.

1.6 Earthworks

Bulk earthworks for the formation of useable areas and possible future building platforms have been approved under land use consent RM220258.

Additional earthworks related to the construction of roading and installation of civil infrastructure to facilitate future tenancies of the site are required to form the internal access roads, upgrade Benmore Crescent and the intersection with Manor Park Road, upgrade the level crossing over the Wairarapa Railway Line as well as install drainage and other servicing infrastructure.

Erosion and sediment control measures will be put in place during construction of the roads.

1.7 Flooding

The District Plan indicates that the site is subject to inundation. We also note that permitted standard 8B 2.1.1(q) only allows buildings to be located on land above RL28.0 msl.

The northern and western areas of the existing site are generally above RL28.0. Nevertheless, the applicant has engaged River Edge Consulting Ltd to undertake a flooding analysis of the site. As a result River Edge have undertaken new modelling of the Hutt River, which indicates that there would be limited flooding of the lower areas of the site and that the 440 year flood level (including freeboard) is much lower than RL28.0.

Nevertheless, the proposed bulk earthworks under RM220258 would elevate the site so that it is not subject to flooding from the Hutt River or Dry Creek. A flooding report by River Edge Consulting was attached to the bulk earthworks application. This flooding report also assessed the flooding potential from Dry Creek and found that the site (following the completion of bulk earthworks) would not be inundated by Dry Creek.

2 PLANNING PROVISIONS

2.1 Zoning

The site is located in the **General Rural Activity Area**. The Wellington Faultline Study Area passes through the site. Part of the site is shown to be within the secondary river corridor of the Hutt River. In addition, parts of the site are subject to the State Highway and Railway Corridor Buffer Overlays.

The TNZ 3 designation lies to the west covering the Haywards Interchange on State Highway 2 and which is shown to extend up to 6.5m into the site for distance of approx. 140m. The TNZ 3 designation also covers the intersection of Benmore Crescent and Manor Park Road. The NZR 3 designation for the Wairarapa Rail Line adjoins to the east and covers the Manor Park level crossing.

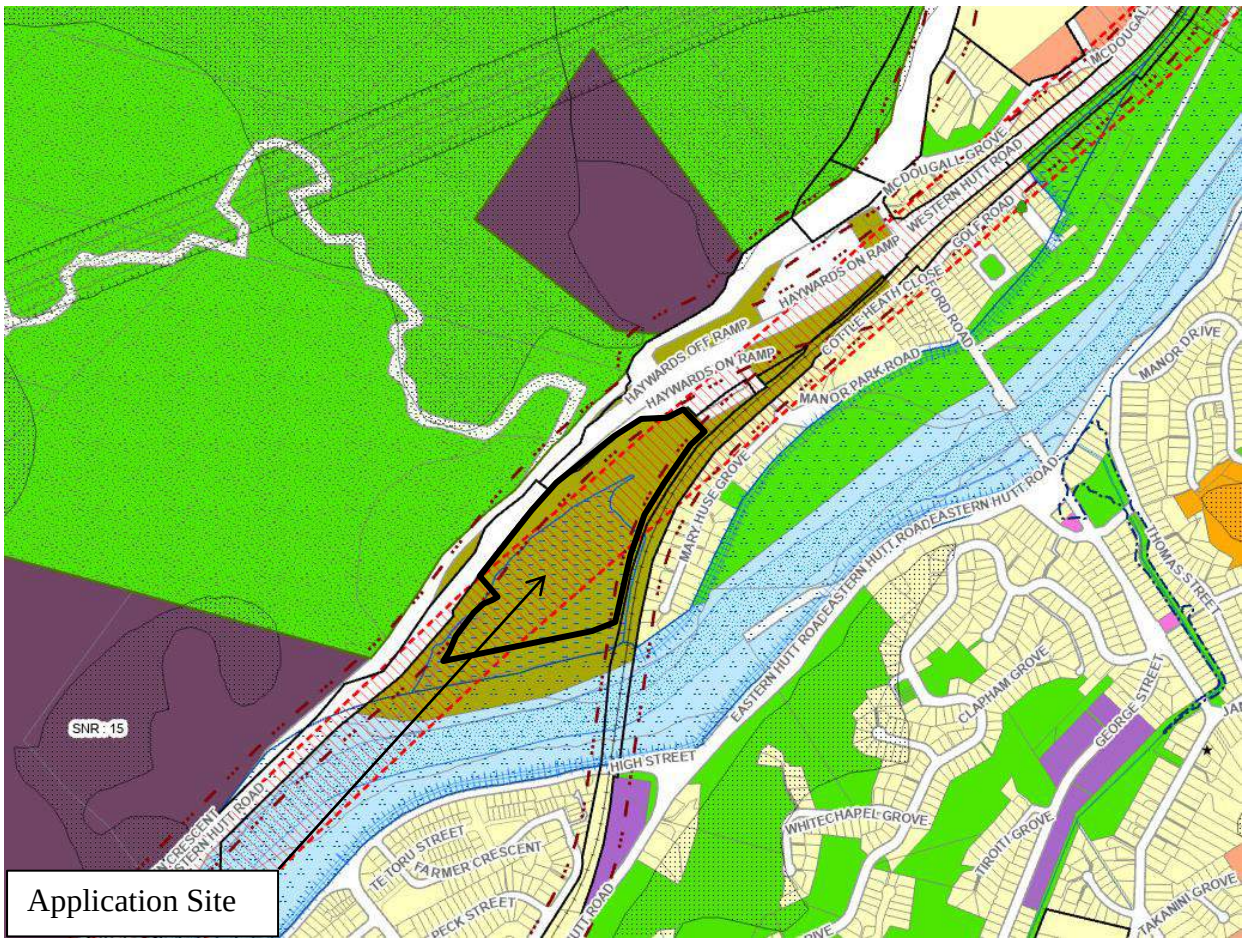

Figure 3: Site Zoning – extract from LHCC Online District Plan Maps

2.2 Compliance with District Plan Standards

2.2.1 Earthworks

Earthworks (additional to those under RM220258) are required to provide the roading and civil infrastructure needed for future use of the site. Specifically, these earthworks are related to the construction of the private road to access the future tenancy areas, as well as undertaking upgrades and widening of the existing section of public road within Benmore Crescent and its intersection with Manor Park Road. Earthworks are also required for trenching to install sewage and stormwater drainage, water supply and other services. Some further earthworks are required for

the construction of an upgraded level crossing over the Wairarapa Railway Line for the Manor Park Road crossing.

The earthworks for the private access road involves disturbance of an area of 4,800m^2 and changing the ground level by up to 0.6m vertically for excavation and 0.3m vertically for filling. The volume of these earthworks is approximately 650m^3.

The earthworks for the upgrades to the public road (Benmore Crescent and Manor Park Road) involves disturbance of an area of 2,870m^2 and changing the ground level by up to 0.9m vertically for excavation and 1.2m vertically for filling. The volume of these earthworks is approximately 620m^3.

Therefore, a land use consent as a restricted discretionary activity under rule 14I 2.2(a) is required for the proposed earthworks to exceed a quantity of 50m^3.

2.3 NES on Soil Contamination

The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (the NES) came into force on 1 January 2012. Regulation 5(7) outlines the land to which the NES applies. That is, the NES applies to land where a HAIL activity is, has or is more likely to have been undertaken on the piece of land.

Consequently, there are two issues that need to be considered for the proposed works. Firstly, has there been a HAIL activity undertaken on the site? If not, the NES does not apply. Secondly, even if there has been a HAIL activity on the site, the NES only applies to that part of the site where the Hail activity was/is undertaken (i.e. "the piece of land").

With respect to the first matter, the site is not listed on the GWRC's Selected Land Use Register (SLUR). The SLUR lists sites where a HAIL activity is known to have been undertaken.

Nevertheless, a Detailed Site Investigation (DSI) has been undertaken over the site by Engeo Ltd. The DSI confirmed some historical HAIL activities at the site, and soil testing identified some elevated levels of some heavy metals and polycyclic aromatic hydrocarbons (PAH). However, the levels of these contaminants are at acceptable levels for the use of the site for commercial / industrial activities. The DSI report was submitted for the bulk earthworks application (RM220258) and resource consent approved under the NES.

The activities to which the NES applies are outlined at Regulations 5(2) – 5(6). These activities include removing a fuel storage system (Subclause 2), soil sampling (Subclause 3), disturbing the soil (Subclause 4), subdivision (Subclause 5) and changing the use of a site to a use where the site may cause harm to human health (Subclause 6).

The site is zoned General Rural. Residential activities are only permitted on sites over 15ha. The site is less than 15ha and is not proposed to be subdivided. The site is intended to be used for a resource recovery park and for rural ancillary services. Thus it is highly unlikely that the lots will be used for residential activities. Therefore, the risk to human health from any potential soil contamination is minimal, if any.

Regulation 9(3) provides for the change of use of a contaminated site as a controlled activity where:

- a detailed site investigation of the piece of land must exist;

- the report on the detailed site investigation must state that the soil contamination does not exceed the applicable standard in regulation 7;
- the consent authority must have the report;
- conditions arising from the application of subclause (4), if there are any, must be complied with.

As mentioned previously, the DSI submitted for RM220258 concludes that the level of soil contamination is acceptable for commercial / industrial uses. The DSI recommends the use of management plans for mitigation of any contamination risk associated with the proposed earthworks being considered under RM220258. Thus the works would be undertaken in accordance with any relevant conditions prior to any change of use of the site.

Therefore, we consider that the land use consent for earthworks to construct roading and civil infrastructure to facilitate future use and tenancies at the site is a controlled activity under regulation 9(3) of the NES.

2.4 Activity Status

The assessment of the provisions of the Operative District Plan in the preceding sections shows that the proposal to undertake earthworks related to roading construction and installation of civil infrastructure and services to facilitate future use and tenancies at the site must be assessed as the following:

- Land Use Consent for earthworks related to construction of roading and installation of civil infrastructure. As the earthworks would exceed the permitted standards for quantity of earthworks, the earthworks are a restricted discretionary activity under rule 14I 2.2(a).
- Land Use Consent for a change of use of the potentially contaminated site, which is a controlled activity under the NES.

3 ASSESSMENT OF EFFECTS ON THE ENVIRONMENT

3.1 Introduction

This assessment of environmental effects on neighbouring properties and the wider community has been prepared in such detail as corresponds with the scale and significance of the effects that the proposal may have on the environment.

The effects arising out of this application that we consider would potentially impact on the amenity of neighbours and the wider community, including physical effects are listed below:

- Landscape / Visual effects;
- Traffic effects;
- Servicing effects;
- Construction effects;
- Contamination effects;
- Flooding effects.

3.2 Landscape and Visual Effects

The earthworks and proposed roading and infrastructure will allow the site to be tenanted by creating three areas for future use and leasing. Areas 1 & 3 cover the main land area on the south-eastern side of Dry Creek. This area will be split in two given its size and to coincide with the 6ha area (Area 1) which is intended to be leased to Waste Management Ltd for the purpose of operating a resource recovery park and processing facility. Area 3 comprises three parts, which may be subject to separate leases in the future. The main useable portion is a triangular area to the north of Area 1, with two small areas on either side of the private access road at the entrance to the site. A tenant(s) for Area 3 has not yet been secured. Area 2 contains the long strip of land on the north-western side of Dry Creek beside State Highway Two.

Resource consent for bulk earthworks to raise the site above flooding levels and to shape the surface for site drainage control has recently been granted by Council (RM220258). The effects on the landscape and visual amenity values from the bulk earthworks have been considered and taken into account as part of the approval of RM220258. Therefore, the landscape and visual effects of the bulk earthworks are not considered further as part of this application.

While the site is zoned rural, it is an isolated land parcel separated from other private property by State Highway 2, the Hutt River and the Wairarapa Railway Line. Additionally, there are no other rural properties nearby. The closest rural property is associated with the Belmont Quarry on Hebden Crescent, which is a kilometre away on the opposite side of SH2. More importantly, the site has not been used for any rural activity since the 1950's when it was used in association with the realignment of the Wairarapa Railway Line. Subsequently it has been used in association with the construction and upgrading of SH2. During this time the site has been subject to the disposal of surplus material from these transport infrastructure projects and other developments over the last few decades.

As a result, the site exhibits very little rural character, particularly in terms of landscape and visual values associated with the site. This is confirmed by the Assessment of Landscape Effects report undertaken by Boffa Miskell (Attachment 6) in respect of the site and the proposed works to facilitate future tenants for the site.

Currently the rural land use provisions of the District Plan anticipate a single building or group of buildings covering 1,000m^2 on the site up to 8m high – with no specific controls on the design and appearance of the building(s). The restriction of 1,000m^2 of building for the whole site will continue to apply.

The Landscape Effects assessment by Boffa Miskell has undertaken a visual assessment of the site from many vantage points, both near and far. The proposal includes landscape planting around the perimeter of the site as well as improvement planting of the riparian margins of Dry Creek. The conclusion reached by Boffa Miskell is that potential visual effects of the anticipated future use and tenancy of the site are generally neutral, or low adverse at worst with the mitigation planting proposed.

Consequently, we consider that the landscape and visual related effects by the proposal to construct roading and install infrastructure for future tenancies are less than minor.

3.3 Traffic effects

The site is located close to the Manor Park / SH58 interchange on State Highway 2. The Manor Park train station is also less than a kilometre away. As well the Hutt River Trail for walking / cycling is close by. Thus the site is well positioned for easy access to transport networks for all modes of transport.

Currently, the site generates little traffic as it has not been actively used in recent years, previously it has been used for construction related works for the SH2 upgrades, filling operations and a paintball recreational activity. The permitted uses of the site include any rural activity and rural ancillary activities including piggeries, forestry and prospecting. We also consider that some commercial activities would be permitted provided they are not industrial in nature (as defined in the District Plan), do not involve retailing or is not a service station.

Therefore, the site could be used for many permitted activities where the baseline for traffic related effects is set by the High Trip Generator limits of 500 vehicle trips per day.

The anticipated traffic effects from the likely future uses and tenancy of the site have been assessed by Stantec in their Transportation Assessment (included as Attachment 5). The transportation assessment includes the traffic generation from the proposed resource recovery park so as to provide a wholistic assessment of future traffic volumes and related effects on the transport networks.

As per the Transportation Assessment, the forecast daily traffic movements from future use of the site is estimated to be in the order of 2,900 vehicles per day. This exceeds the 500 limit per day, and so the traffic effects from the site on the transport network and on-street parking should be assessed.

Consequently, the Transportation Assessment recommends that local roading upgrades are needed at the intersection of Benmore Crescent and Manor Park Road (which is essentially at the bottom of the access ramp to the SH2 interchange) to create a right turn lane on Manor Park Road and to allow a wider swept path for trucks turning left out of Benmore Crescent. The details of the intersection upgrades are shown in the drawings included with the Transportation Assessment.

Given the proximity of the intersection to the SH2 interchange, the design of the intersection upgrade has been undertaken in consultation with Waka Kotahi. Consultation is on-going with Waka Kotahi regarding the detailed design aspects of the upgrade. Consequently, we anticipate

obtaining approval from Waka Kotahi in due course, including their approval in terms of section 176 RMA.

A flow on effect of upgrading the intersection, is that the width and alignment of the nearby level crossing on Manor Park Road will also require improvements. These improvements include a widened carriageway, raised medians and the creation of a separated pedestrian crossing of the railway line. The details of the level crossing upgrades are also shown in the drawings included with the Transportation Assessment.

KiwiRail have been consulted regarding the proposed level crossing upgrade works. This has resulted in a "so far as is reasonably possible" (SFAIRP) agreement being signed by KiwiRail. Consultation is on-going with KiwiRail regarding the proposed works. Consequently, we anticipate obtaining approval from KiwiRail in due course, including their approval in terms of section 176 RMA.

The Transportation Assessment has considered the likely traffic generated by the future uses of the site and recommends that traffic improvements are undertaken. With these upgrade works in place, the conclusion of the Transportation Assessment is that the future traffic from the likely use of the site would not impact on the capacity of the local road network, which in turn means that there is no flow on effects for the State Highway 2 interchange.

Therefore, we consider that the traffic and transportation related effects by the proposal are less than minor.

3.4 Servicing Effects

The subject site is generally remote from Council services. Though a trunk sewer main runs through the site. Therefore, the services to the site have required specific solutions that have involved variations to the traditional methods of providing complying services as outlined in the District Plan and NZS 4404.

3.4.1 Stormwater

In terms of stormwater control, drainage systems are provided to direct stormwater runoff from each lot and from the private driveway to Dry Creek. It should be noted that Dry Creek is the only viable option for discharge of stormwater from the site.

For Area 2 on the western side of the site, a swale drain would be installed at the top of the batter along the length of Dry Creek, which would discharge to Dry Creek via a specifically designed rip-rap outlet. The swale drain would allow the stormwater to be treated by the grassed swale prior to discharge to the creek.

Areas 1 & 3 on the eastern side, would have stormwater control via traditional piped networks that collect stormwater from the future users and the private driveway, that is also discharged to Dry Creek via three rip-rap outlets. These piped networks would also contain proprietary treatment systems (Vortechs systems designed by Stormwater 360) to provide treatment of the stormwater prior to discharge to the creek.

Drawings of the proposed drainage networks are included at Attachment 4.

We also note that stormwater re-use will be facilitated by the future uses of the site, which will help reduce the volume of water discharged from the site.

3.4.2 Water Supply

The local water network is inadequate to service the site and the future activities. This is due to the small size of the Manor Park reservoir and the small diameter of the pipes within some sections of the existing reticulated network. Therefore, a specifically designed water supply system is proposed to service the site. This solution would be an interim solution, until such time as Council can upgrade the reservoir and network. We note that a specific development contribution may need to be paid in conjunction with the further development and buildings on the site, as a contribution towards funding of the water supply upgrade works.

A new watermain would be laid to the site from Manor Park Road, from the eastern side of the railway. This water supply would provide a domestic supply to the site and the three lease areas, but would be insufficient for fire-fighting supply to large buildings and the buildings proposed for the resource recovery park. Therefore, on-site tank farms are proposed that would be trickle feed from the new extended mains, and then used with a pump system to supply water to sprinkler systems for buildings.

Details of the existing water supply network and the proposed water supply solutions are provided in the Three Waters Infrastructure Assessment at Attachment 7.

3.4.3 Sewer

A trunk sewer main Ø825mm passes through the site. There is also a Ø300mm branch plus an existing local sewer main at the northern end of the site, which can be utilised by future activities on the site. For the remainder of the site, a new sewer network would be installed running down the eastern side of Dry Creek. At the southern end, the new sewer main would cross over the creek, supported on a pipe bridge. The sewer would then connect into the trunk network at a manhole located within GWRC property.

3.4.4 Services Assessment

These proposed servicing arrangements do not fully comply with the District Plan and NZS 4404. However, they have been designed to meet the equivalent performance objectives of these documents. Hence the servicing arrangements are appropriate for the site and the future users, and do not result in adverse effects on Council's existing networks or to other users of those networks.

3.5 Construction Effects

Site development works such as the construction of driveways and services associated with the future use of the site have the potential to generate a range of effects. In our experience of this type of development, construction effects relating to noise, dust, run-off & erosion and truck movements are the key aspects that need to be addressed.

These nuisance effects are only associated with the construction period, which is anticipated to be over a six month period for this development. Thus these effects will not be permanent and are simply to enable future uses of the site.

Noise effects can be minimised through the use of muffled machinery and limiting the working hours to the normal daytime period. In addition, the provisions of NZS 6803:1999 "Acoustics – Construction Noise" will apply in respect of noise during construction activities in the residential area. The consent holder will be bound by these provisions and any other conditions of a consent approval.

Dust may only be a problem during dry and windy weather events. Dust suppression measures can be undertaken to avoid the adverse effects of dust blown from the site by dampening the working area. A water truck would be available at the site for this purpose. If weather conditions are more extreme stopping works may be required to alleviate dust problems.

The earthworks for the private and public road works would be undertaken separately in two different stages to minimise the disturbed area at any particular time. As the earthworks would primarily involve excavation of the road alignments and re-filling with base-course material, there would be little opportunity for sediment in stormwater run-off to leave the site. Nevertheless, silt fencing is proposed along the top of the batter adjacent to the creek to avoid sediment entering the creek corridor. Thus the potential for a sediment discharge is low and can be minimised with appropriate site management and controls.

The remaining works would be to excavate for the stormwater outlets to the creek. During construction of the stormwater outlets, a silt fence would be constructed along the water's edge to minimise sediment entering the stream from the disturbance of the bank.

Preliminary erosion and sediment control plans are included at Attachment 3.

A Construction Management Plan would be utilised by the contractor in order to ensure appropriate measures are put in place during the earthworks and construction activities to control the site and avoid adverse effects beyond the site. A condition is proposed for a Construction Management Plan to be submitted to Council for approval prior to services installation and driveway construction works commencing.

Construction of the infrastructure and driveway access areas will require delivery of drainage metal and also the delivery of pipes, manholes & concrete etc. The truck movements associated with the works will require management to ensure as little disruption as possible to traffic on Manor Park Road. The Construction Management Plan should also include matters to be utilised to control truck movements to and from the site during the construction process.

Overall we consider that these potential construction effects can be appropriately managed by good work practices and site management. These measures can be enforced through the proposed consent conditions that seek to control dust, noise, truck movements & silt laden storm-water run-off from impacting on the local environment. We therefore consider that any adverse construction effects of the proposed development will be less than minor.

3.6 Contamination Effects

The previously submitted Detailed Site Investigation by Engeo notes that there may be contaminants in the soil (heavy metals and PAH) at the site. However, the level of contamination is sufficiently low so as not to be a health risk to workers and occupants of the site while the site is used for commercial and/or industrial type activities. As a result, Engeo have prepared various Site Management Plans (SMPs) for the site relating to procedures during soil disturbance. The bulk earthworks approved under RM220258 includes conditions for the earthworks to be undertaken in accordance with the Engeo Site Management Plans and that a Site Validation Report is submitted upon completion of the earthworks.

Provided the bulk earthworks and site preparation works are undertaken in accordance with SMPs, the subsequent Site Validation Report may include a Long Term Site Management Plan outlining any restrictions that may need to be adhered to in the future. The installation of drainage networks,

services and construction of the driveway would involve earthworks for which specific SMP's would be required and can mitigate the potential effects of soil contamination at the site.

Therefore, we consider that any potential effects from soil contaminant during the earthworks, in association with the driveway construction and installation of services, are less than minor.

3.7 Flooding Effects

The site is identified on the District Plan maps as being within the secondary river corridor of the Hutt River. Permitted activity condition 8B 2.1.1(q) specifies that any building or structures within the secondary river corridor must be located on land that is above RL28.0 (msl).

The topographic survey of the site confirms that large areas of the site are already higher than RL28.0 (msl).

Nevertheless, the applicant has engaged River Edge Consulting to undertake a flooding hazard analysis of the site. The flooding analysis has considered the Hutt River flooding in a 440 year event, as well as a 100 year event in the Dry Creek stream that runs through the site.

The flood modelling work and assessment by River Edge Consulting confirms that once the site is filled via the earthworks approved under RM 220258 the site would be flood free.

Therefore, the potential flooding hazard at the site is avoided by the preceding earthworks such that the risk of flooding is minimal.

4 DISTRICT PLAN ASSESSMENT

4.1 Objectives and Policies

Section 104(1)(b)(vi) of the Resource Management Act requires the Council to consider the relevant provisions of the District Plan when assessing applications for resource consent. This includes the relevant objectives and policies of the District Plan, which in this case are considered to be:

General Rural Activity Area

Objective 8B 1.1.1	*To maintain and enhance the open character and amenity values which are prevalent in rural areas.*
Policy 8B 1.1.1(a)	*To allow for those activities which are appropriate in rural areas and which maintain and enhance the open character and amenity values of rural areas together with the intrinsic values of ecosystems.*
Policy 8B 1.1.1(b)	*To ensure that sites are of a size that the open space character and amenity values of rural areas are maintained and enhanced.*
Policy 8B 1.1.1(c)	*The preservation of the natural character of wetlands, lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development.*

The landscape assessment undertaken by Boffa Miskell notes that the site is not rural in character. Nevertheless, the proposal includes additional planting of the existing riparian area and also around the perimeter of the site to maintain and enhance the open character of the existing views to the site. The site is adjacent to the Hutt River Corridor and maintains the natural character of the Hutt River and the river trail environment. Therefore, the proposed earthworks to construct a driveway and install services is consistent with this objective and its policies.

Objective 8B 1.2.1	*To recognise those elements within the site that determine the character, amenity values and adverse effects of flood hazards of rural areas and manage them appropriately.*
Policy 8B 1.2.1(a)	*To ensure the character and amenity values of rural areas are retained and enhanced through specific minimum site area conditions for dwellings.*
Policy 8B 1.2.1(b)	*To require minimum setback requirements and maximum site coverage for all buildings.*
Policy 8B 1.2.1(c)	*To establish appropriate minimum conditions for the size and shape of sites.*
Policy 8B 1.2.1(d)	*To manage the siting of all buildings and structures to mitigate the effects of a flood hazard on development.*
Policy 8B 1.2.1(e)	*To discourage the siting of buildings and structures in the Primary and Secondary River Corridors.*
Policy 8B 1.2.1(f)	*To ensure that buildings and structures in the Primary or Secondary River Corridor of the Hutt River have no more than minor adverse effects on flood protection structures.*
Policy 8B 1.2.1(g)	*To mitigate the effects of flood hazards on buildings and structures in the Primary and Secondary River Corridors by managing their location, size and scale.*

The Dry Creek corridor runs through the site, the riparian environment of the creek would be supplemented with additional planting as required by this policy. The flooding effects from the Hutt River and Dry Creek have been analysed and the site would not be subject to flooding upon completion of the earthworks as per RM220258. Therefore, the secondary river corridor notation in the District Plan is not particularly relevant for the development.

Earthworks

Objective 14I 1.1	*To ensure that earthworks are designed to maintain the natural features that contribute to the City's landscape.*
Policy 14I 1.1(a)	*To ensure that earthworks are designed to be sympathetic to the natural topography.*
Policy 14I 1.1(b)	*To protect significant escarpments, steep hillside areas, and the coastal area by ensuring that earthworks are designed to retain the existing topography, protect natural features, and prevent erosion and slips.*

The proposed earthworks are to constructed roading and install civil infrastructure, which does not involve any substantial change to the topography. The site is on the valley floor and does not involve risks of slips and erosion.

Objective 14I 1.2	*To ensure earthworks do not affect adversely the visual amenity values, cultural values or historical significance of an area, natural feature or site.*
Policy 14I 1.2(a)	*To protect the visual amenity values of land which provides a visual backdrop to the City.*
Policy 14I 1.2(b)	*That rehabilitation measures be undertaken to mitigate adverse effects of earthworks upon the visual amenity values.*
Policy 14I 1.2(c)	*To protect any sites with historical significance from inappropriate earthworks.*
Policy 14I 1.2(d)	*To recognise the importance of cultural and spiritual values to the mana whenua associated with any cultural material that may be disinterred through earthworks and to ensure that these values are protected from inappropriate earthworks.*

The site is not highly visible in the landscape, and is surrounded by transport networks. Despite the moderate extent of the earthworks, landscape planning is proposed around the site periphery and along the Dry Creek corridor.

Conclusion

The overall intention of these objectives and policies are met by this proposal. The proposed roading and infrastructure has been designed around the earthworks approved under RM220258. Appropriate servicing of the sites and future tenancy areas can be achieved.

Due to the history of the site, it is not noted for its rural character and does not display rural amenity. As part of the development, planting of Dry Creek will be undertaken as well as planting around the perimeter of the site. Therefore, the amenity of the site will be improved and potential visual effects avoided.

Therefore, we consider that the proposal accords with the District Plan objectives and policies.

5 MITIGATION AND MONITORING MEASURES

Due to the proposed earthworks required to construct the driveway and civil infrastructure so as to achieve useable areas for future activities, together with the proximity of the wellington Faultline, specific mitigation conditions are proposed. Therefore, we propose the following conditions for the subdivision.

5.1 Suggested Conditions

1. The proposed building works must be in accordance with the plans and information provided with the application.

2. A Construction Traffic Management Plan (CTMP) must be submitted to the Compliance Officer for approval, at least 10 working days prior to any work commencing. The CTMP must include, but not be limited to, the following matters:

    1. Location where vehicles relating to the construction activities will park, load / unload and manoeuvre;
    2. Times and days of construction activities;
    3. Expected duration of construction activities;
    4. Expected volume and frequency of heavy vehicle movements;
    5. How complaints from the public will be able to contact site manager (a sign should be placed on Benmore Crescent with site manager's contact details);
    6. How dirt on vehicles leaving the site will be controlled;
    7. All transport corridor traffic management must be to the NZTA COPTTM and must be in conjunction with a Work Access Permit issued by the WCC Network Operations Transport Asset Performance team via Submitica as necessary.

3. A final Earthworks Management Plan (EMP) must be submitted to the Compliance Officer for approval, at least 10 working days prior to any work commencing. The plan must include methods to address erosion, silt and dust control measures to be used at the site, including:

    1. Erosion and sediment controls on the site;
    2. Covering of soil or other material that is to be trucked on or off the site;
    3. All vehicles (including trucks) to be substantially cleaned of dust, mud or other nuisance material before exiting the site;
    4. An accidental discovery protocol.

4. The earthworks and other work must be carried out in accordance with the EMP to the satisfaction of the Compliance Officer. The erosion and sediment control measures must not be removed until the site is remediated to the satisfaction of the Compliance Officer.

    Note: If necessary, the Compliance Officer may require changes to the implementation of the EMP, to address any problem that occurs during the work or before the ground surface protected by grass or other materials.

5. Working hours for the earthworks and construction are to be as follows:
    - Monday to Saturday: 7.30am to 6pm (No work on Sundays or Public Holidays)

6. Silt and stormwater run-off must be controlled for the duration of the works. Earth or debris must not collect on land beyond the site. Untreated stormwater runoff must not enter the Council's stormwater system.

7. Any soil or demolition material that falls on the road, footpath, berm or neighbouring property, must be cleaned up immediately. The material must not be swept or washed into street channels or stormwater inlets, or dumped on the side of the road. The clean-up must be carried out to the satisfaction of the Council's Compliance Monitoring Officer.

8. The consent holder must ensure that the discharge of dust created by the earthworks, transportation and construction activities is suitably controlled to minimise dust hazard or nuisance. The controls must be implemented for the duration of the site works and continue until the ground surface has been stabilised by construction, paving or planting.

9. A landscape plan must be submitted for approval prior to landscape works commencing. The landscape works must be implemented by the consent holder within 3 months of completion of construction. The plantings must be monitored for 18 months from time of planting in order to allow for plant establishment to the satisfaction of the Council's Compliance Monitoring Officer. Within this period monitoring includes the removal of weeds within the vicinity of the plantings and the replacement of plants that die, or are removed unlawfully, with plants of the same species and original size. Any plants that fail must be replaced at the expense of the consent holder.

10. A general monitoring condition.

Aside from the above, we anticipate that the standard conditions Council normally impose on land use consents of this nature will be sufficient to ensure that the proposed earthworks are carried out in a manner that is consistent with Council's expectations for development in the district.

6 ALTERNATIVES CONSIDERED

An assessment of possible alternatives is only required when the proposal would result in significant adverse effects. The proposed earthworks to construct roading and install infrastructure will not result in significant adverse effects.

7 ASSESSMENT OF NOTIFICATION AND AFFECTED PERSONS

The provisions of sections 95A to 95E RMA are considered in this section.

7.1 Public Notification Assessment

With reference to Public Notification Step One under s.95A(3), the applicant does not request public notification, s.95C does not apply, and the application does not include the exchange of reserve land.

In terms of Public Notification Step Two under s.95A(5), the application is for a restricted discretionary activity (rule 14I 2.2(a)) where there is no expressed provisions that public notification is precluded. Therefore, Public Notification Step Three must be considered. This is despite section 17.2.2(a) of the District Plan stating that *"public notification of applications for resource consent for all restricted discretionary activities need not be required"*.

For Public Notification Step Three under s.95A(8), the assessment of effects at Section 3 concluded that the adverse effects of the proposed earthworks are not more than minor, after taking into consideration the criteria under s.95D. In addition, for Public Notification Step Four, we consider that there are no special circumstances relating to the application. Therefore, public notification of the application is not required.

7.2 Limited Notification Assessment

Regarding Limited Notification Step One under s.95B(2), the application does not involve customary rights groups or customary marine title groups, nor does it involve land subject to a statutory acknowledgement.

In assessing Limited Notification Step Two under s.95B(6), the application is for a restricted discretionary activity (rule 14I 2.2(a)) where there is no expressed provisions that limited notification is precluded. Therefore, Limited Notification Step Three must be considered. Again, this is despite section 17.2.2(b) of the District Plan stating that *"limited notification of applications for resource consent for all restricted discretionary activities need not be required"*.

To assess the application in terms of section 95E (for Limited Notification Step Three), the proposed earthworks have been assessed in terms of the neighbouring properties. We note that the bulk earthworks for the site are assessed under a separate land use consent (RM220258). The landscape and visual effects of the subsequent earthworks for construction of roading and installation of infrastructure, together with the proposed mitigations have been assessed and found to be less than minor.

The proposed development involves off-site works, which involve works on requiring authority assets. Therefore, an approval process as per section 176 of the RMA is required for these off-site works. Consultation with the relevant requiring authorities, as well as Iwi consultation, is outlined in Section 8 below.

However, in terms of sections 95A to 95E, and anticipating successful consultation with requiring authorities, there would be no affected persons by the proposal.

To assess the application in terms of section 95B(10) (for Limited Notification Step Four), we consider that there are no special circumstances relating to the application that apply to other parties. Therefore, limited notification of the application is not required.

7.3 Notification Conclusion

From our assessment it is clear that the proposed earthworks for construction of roading and installation of infrastructure can meet the requirements of the Act for Council to determine that public or limited notification is not required.

8 CONSULTATION

8.1 Waka Kotahi

As the roading improvements to the intersection of Benmore Crescent and Manor Park Road are within the TNZ 3 designation, approval from Waka Kotahi is required in terms of section 176 of the Act. The applicant is currently in discussions with Waka Kotahi regarding the intersection works.

The design of the roading upgrade has been undertaken with input from Waka Kotahi. Nevertheless, the applicant is currently consulting with Waka Kotahi on the engineering details and conditions to be applied to the works.

The outcome of this consultation with Waka Kotahi will be provided in the near future.

8.2 Kiwi Rail

The upgrade of the level crossing on the Wairarapa Line at Manor Park Road is within the NZR 3 designation. Therefore, approval from Kiwi Rail is required in terms of section 176 of the Act. The applicant has been in discussions with Kiwi Rail regarding the level crossing works, which has resulted in a "so far as is reasonably practical" assessment being undertaken and agreement with Kiwi Rail.

Subsequent to the "so far as is reasonably practical" agreement, the applicant is currently consulting with Kiwi Rail the engineering details and conditions to be applied to the works.

The outcome of this consultation with Kiwi Rail will be provided in the near future.

8.3 Iwi Authorities

While the works do not directly affect the Hutt River (Te Awakairangi) a tributary, referred to as Dry Creek, runs through the site. The Hutt River is subject to statutory acknowledgements with Taranaki Whānui ki Te Upoko o Te Ika and also Ngati Toa Rangatira.

Consequently, the applicant has supplied a copy of the resource consent application to both Iwi Authorities and invited their feedback. Once any response is received, this will be communicated to Council.

8.4 GWRC

An aspect of the landscape and visual mitigation is to undertake planting within the adjacent land to the south of the property that is owned by GWRC. The applicant is currently consulting with GWRC officers regarding approval of the proposal for planting on the Council's land.

The outcome of this consultation with GWRC will be provided in the near future.

9 POSITIVE EFFECTS – SECTION 104(1)(a)

The proposed earthworks will have the following positive effects:

- The proposal meets the intention of the RMA in terms of sustainable management of what is in reality an urban land resource, as the site is in an established urban area and in close proximity to transport networks.
- The proposed roading and infrastructure provides areas for tenants that can accommodate a range of potential rural and some commercial activities that will enhance the economic and social wellbeing of both current and future occupiers and owners.
- The proposal will result in the efficient use of resources as it utilises existing infrastructure wherever possible and includes upgrades as appropriate.

10 ASSESSMENT OF PART 2 RMA

We consider that the proposed earthworks are entirely consistent with the main purpose of the Act, which is the sustainable management of resources. In particular, the development can be incorporated into the local environment with appropriate mitigation which provides for the future wellbeing of the applicant and community in terms of their social and economic needs. In doing so any adverse effects are less than minor.

We have considered the matters of national importance and do not believe that any of the particular matters are applicable to the subject site. There are no other matters under Part II of the Act that are relevant to the proposal that have not already been addressed in this application. Overall, it is considered that the proposed activity would be consistent with Part II of the Act.

11 CONCLUSION

The proposal for earthworks to construct roading and install civil infrastructure has been assessed as a restricted discretionary activity pursuant to rule 11I 2.2(a) of the District Plan.

We have assessed the adverse effects of the proposal and included mitigation measures in respect of potential visual landscape effects and effects during construction. Therefore, we are of the view that the proposal will have less than minor adverse effects on the environment with the mitigation measures proposed.

Our conclusion is that the proposal is not inconsistent with the objectives and policies of the District Plan. The proposal will be a sustainable use of resources and consistent with section 5 outcomes. There are no matters of national importance relevant to the proposal. The proposal is also not inconsistent with any section 7 matters.

Therefore in our view, consent can be granted to the proposal pursuant to s104B of the Act on a non-notified basis with appropriate conditions as suggested.

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