



# **Porirua City Council**

## **Construction and Demolition Waste Minimisation Project – Report 6 Site Selection**

Morrison Low & Associates Limited

07 May 2021

**GHD Limited**

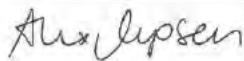

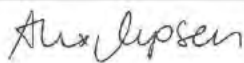

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# 1. Introduction

## 1.1 Purpose of this report

A number of large-scale housing redevelopment and construction projects are occurring in Porirua City. It is anticipated that significant amounts of construction and demolition material will be generated from these development activities. Therefore, Porirua City Council (PCC) and its partners (Kāinga Ora, Hutt City Council and Kāpiti Coast District Council) are seeking to put forward a business case to utilise, repurpose and sell resources that may otherwise end up in landfill. PCC will prepare the business case, with Morrison Low in partnership with GHD (the consultants) providing professional advice in the form of seven specialist reports that support their development of a robust business case as shown below.

This report is known as the 'Site Location Report' and is one of eight reports that Morrison Low and Associates and GHD are completing to provide support for the PCC business case (see Figure 1.1 below).

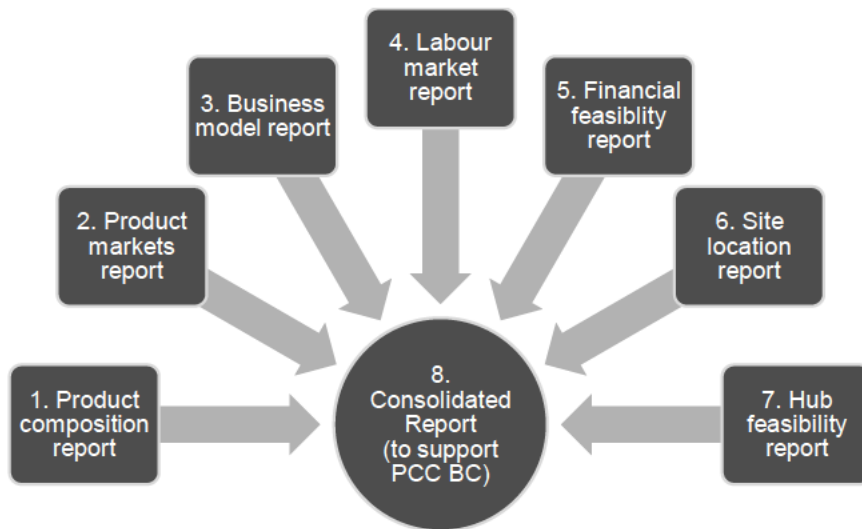


Figure 1.1 - Supporting reports for PCC Business Case

The purpose of this report is to identify and assess potential sites within Porirua City, Kāpiti Coast District and Hutt City where a potential Construction and Demolition (C&D) waste processing facility could be established.

It is a high-level desktop study and GHD's GIS Multi Criteria Analysis model (MCA) has been used to identify potential sites. The report identifies the various constraints that could impact the site selection process for a C&D waste processing facility. These constraints have been scored and weighted and then overlaid within GIS to create a 'heatmap' of scores drawn from the multiple constraints. This has helped to identify favourable, less favourable, and no-go areas. Generally, the no-go areas are those with very difficult constraints, such as high valued archaeological sites, significant ecological areas, sensitive land uses and non-viable transportation routes. It is noted that some sites were also considered as 'satellite sites', whereby a smaller site could be used for stockpiling or sorting before the C&D waste is moved for processing at a larger site.

From the 'heatmap', a shortlist of six sites have been identified and a high-level planning assessment has been completed for each of these sites. From this analysis, PCC are then able to decide which site would be its preference for a C&D waste processing facility in conjunction with the seven other reports.

## 1.2 Scope and limitations

*This report: has been prepared by GHD for Morrison Low and Associates and may only be used and relied on by Morrison Low and Associates for the purpose agreed between GHD and Morrison Low and Associates as set out in section 1.1 of this report.*

*GHD otherwise disclaims responsibility to any person other than Morrison Low and Associates arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.*

*The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.*

*The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.*

*GHD has prepared this report on the basis of information provided by Morrison Low and Associates and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.*

## 2. GIS Site Selection

### 2.1 Spatial Multi Criteria Analysis (MCA) Methodology

Spatial MCA is a proven method for determining appropriate locations for infrastructure development. In this instance, spatial MCA has been used to identify appropriate sites to establish a C&D waste processing facility.

The method uses GIS technology to select, on a scientific basis, optimum locations for infrastructure development based on geographically characterised social, economic, engineering, planning and environmental criteria. Using this method, the criteria are considered in terms of constraints and opportunities, geographically and mathematically.

The outcome of the spatial MCA is a map which uses different colours to generally represent potential locations as favourable, less favourable, or no-go areas (known as a 'heat map').

The key steps in the method are summarised in Figure 2.1.

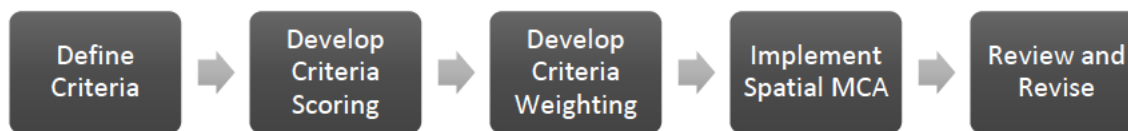


Figure 2.1 - Spatial MCS method summary

The specific methodology developed for this project is explained in detail in the following sections, including an explanation of the:

- Study area
- Selection criteria
- Scoring system
- Data sources

#### 2.1.1 Study area

The study area for the MCA included on the local authority boundaries of Porirua City Council, Hutt City Council and Kāpiti Coast District Council.

#### 2.1.2 Criteria

A range of criteria were selected to help identify feasible sites within the study area for a C&D waste processing facility. These criteria are outlined within Table 2.1. The criteria were weighted to reflect relative importance which is outlined within the 'weighting methodology' column.

Note: as described above, for the purposes of the spatial MCA, the 'criteria' are considered in terms of constraints and opportunities, geographically and mathematically. Table 2.1 refers to the relevant 'criteria' as 'constraints'.

Table 2.1 - Constraints

Constraint Category	Sub Category	Weighting methodology
Social Constraints	Land Zoning	Industrial Zones most preferable (score 0) with Rural Zones also considered. Sensitive zones such as Residential and Open Space zones were identified as NO GO.

	Heritage Areas	Heritage and waahi tapu areas are identified as NO GO with buffers provided around notable trees and identified archaeological/waahi tapu sites.
	Special and Significant Landscapes	These include significant natural areas, outstanding natural features and landscapes as NO GO sites.
<b>Building Constraints</b>	Site size	A general minimum site size of two hectares was initially set to allow for an appropriate size to allow for the area required for a functional C&D Waste processing facility. However, smaller sites have been considered for satellite processing facilities.
	Proximity to Roads and Rail	A 10m – 20 m buffer set to road and rail corridors to allow for appropriate setbacks.
	Large infrastructure – National Grid Corridor, Gas Transmission Lines, 450 dia or larger wastewater/water/stormwater pipelines.	A 5m buffer set to allow for appropriate setbacks from significant infrastructure.
<b>Environmental Constraints</b>	Topography	Sites with flat or gentle slopes preferred to steeper sloped sites given the need for extensive earthworks.
	Geology	NO GO areas only identified for high-risk geology such as 'swamp' or 'peat'.
	Water bodies	20m buffers set from edge of rivers, lakes, streams and ponds.
	Land cover	NO GO zones identified for indigenous forest, estuaries and waterbodies.
	Hazards – flood, coastal inundation, liquefaction	Higher constraint scores given to flood hazardous areas including overland flowpaths and coastal inundation.
	Wells and bores	20m buffer set from identified wells and bores.

### 2.1.3 Scoring system

A scoring system was used to assess sites within the study area against the defined criteria. The scores reflect the range of suitability or feasibility for a given criterion. The scoring scale ranges from 0 – no constraints, through to 200 – completely unfeasible (NO GO). The scoring system used for this project is described in Table 2.2 below.

Table 2.2 - Spatial MCA scoring

Score	Meaning
0	No Constraints
10	Low Constraints
20	Moderately constrained
40	Highly constrained
200	Not feasible at all

The total scores are translated into colours to identify favourability within the 'heat map' as follows, lower scores, less constraints, higher scores, more constraints:

Total Scores



## 2.1.4 Data Sources

GHD have been in contact with the GIS departments of Greater Wellington Regional Council (GWRC), Porirua City Council (PCC), Hutt City Council (HCC) and Kāpiti Coast District Council (KCDC) to extract available data to input into the MCA. National data has also been extracted from Land Information New Zealand (LINZ) and MoE.

Where data has been provided as 'read only', shape files have been captured to identify zoning in HCC.

## **2.2 MCA Findings**

The 'heat map' has identified pockets of land that are considered preferable for a C&D waste processing facility using the above criteria and scoring. For ease of reference, the 'heat map' has been broken up to look at each local authority area (as a part of the wider study area) in more detail as follows.

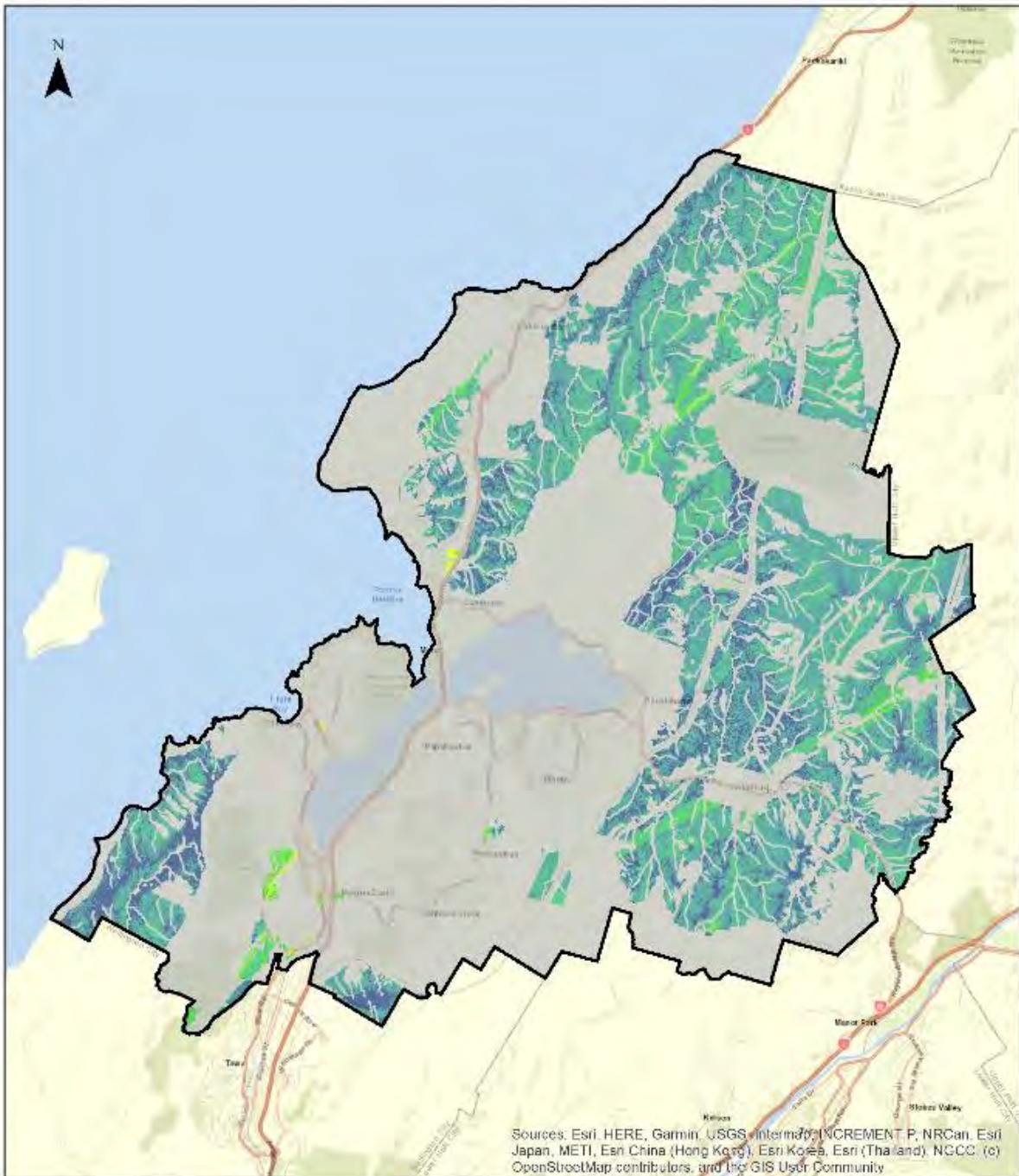
### **2.2.1 Porirua City**

#### **2.2.1.1 Porirua City Council District Plans**

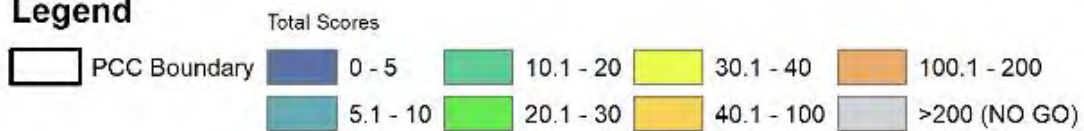
PCC are currently undergoing a district plan review. The Proposed District Plan (PDP) was notified on 28 August 2020. Currently, further submissions are being sought until the 11<sup>th</sup> of May 2021. This means that the PDP does not have any legal effect. Whilst it cannot be predicted when the PDP will become operative, this could be expected within 18 months. Given this timeframe, the MCA has considered both the operative and proposed district plans when considering zoning and overlays.

The most notable change is that the pockets of industrial zoned land are decreasing and being replaced with the 'Large Format Retail' Zone and 'Mixed Use' Zone which is not favourable when considering sites for C&D Waste processing facilities.

## 2.2.1.2 PCC Heat Map



### Legend



NOTE:  
Lower score, less constraints

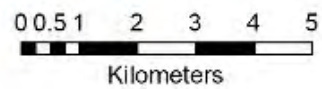
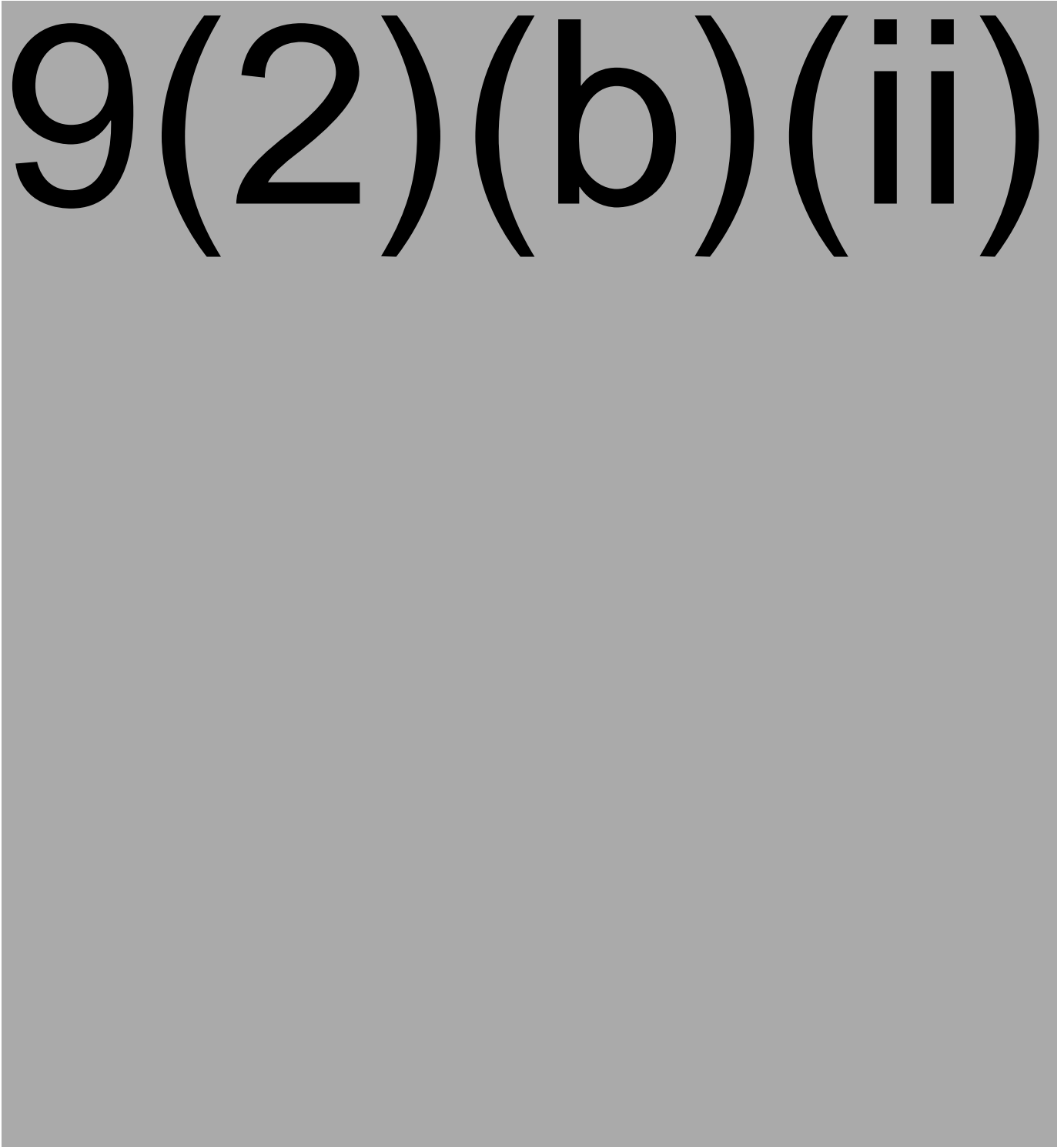


Figure 2.2 'Heat Map' of PCC

The heat map of PCC identifies significant areas of 'Rural' Zoned land that could be feasible for the establishment of a C&D waste processing facility. This is most likely because of the size of the site coupled with areas of gently sloped land. The heat map identifies some areas of the PCC industrial zoned sites as feasible, but not desirable given the size of the allotments and building constraints. There are a limited number of sites within PCC industrial pockets that exceed 2 hectares in area.

What the heat map does not identify is two sites of interest being Spicer Landfill and Sievers Grove (closed landfill). This is because both sites are zoned Open Space Zone which is set as a NO GO constraint within the MCA parameters. A closer look at these areas identifies some potential sites being:

*Table 2.3 - PCC - Possible sites*



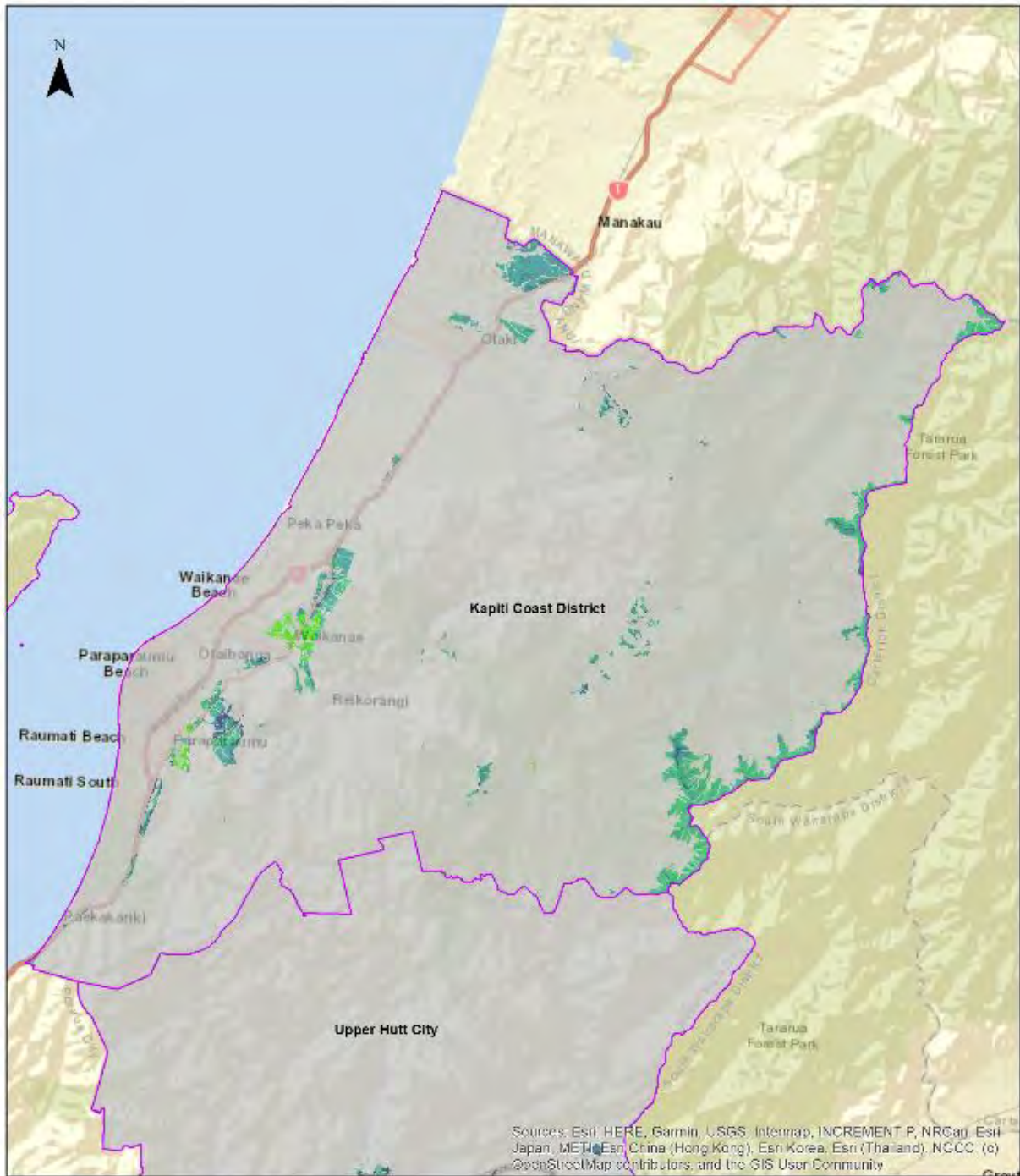
9(2)(b)(ii)

## 2.2.2 Kāpiti Coast District

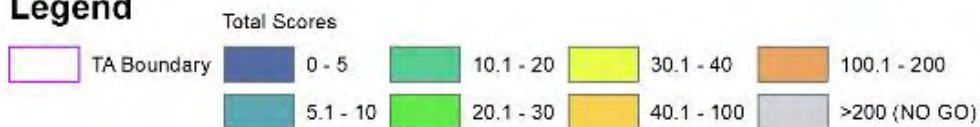
### 2.2.2.1 Kāpiti Coast District Council District Plans

Kāpiti Coast District Council have been reviewing their district plan. The Proposed District Plan (PDP) Appeals Version 2018 is now treated as operative with all appeals resolved. The PDP has therefore only been considered through the MCA process.

### 2.2.2.2 KCDC Heat Map



#### Legend



NOTE:  
Lower score, less constraints

Property size constraint is not included on this map

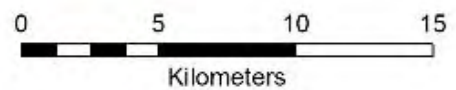


Figure 2.3 'Heat Map' of KCDC

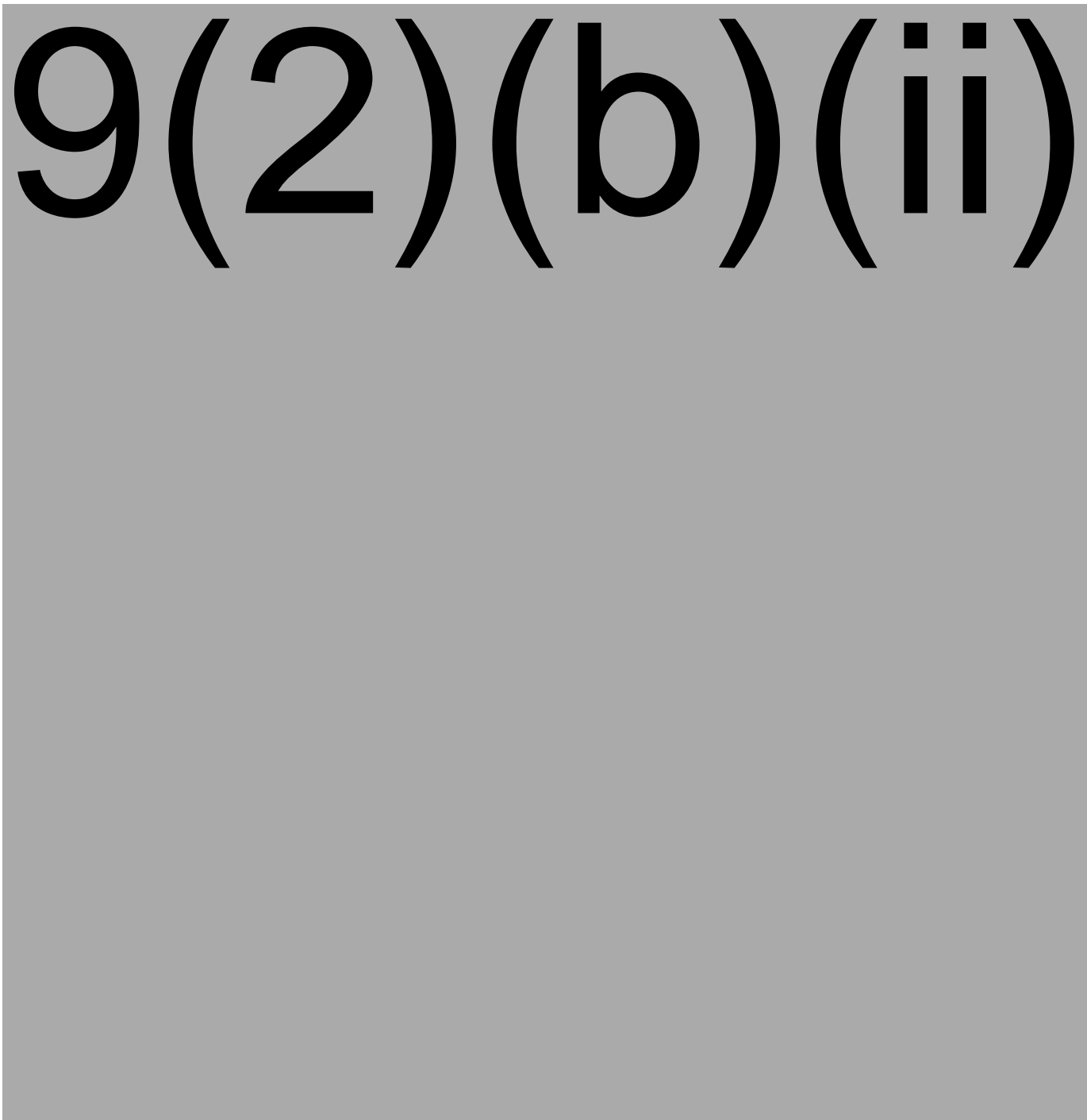
The heat map of KCDC identifies limited areas of preferable sites for a C&D facility. However, a pocket of industrial zoned land in Otaki has been identified which provides a number of feasible sites.

Sites not zoned as industrial, but deemed as preferable, include a cluster around the northern end of 'Main Road' in Waikanae, intersecting with State Highway 1 and are all identified as 'Rural' zoned sites that are characterised by larger and flatter topography.

A further pocket of feasible land exists within Paraparaumu between Old State Highway 1 and Ruapehu Street. Again, these sites are 'Rural' zoned (Rural Planes and Rural Hills) and characterised by larger, gently sloping sites.

There are limited pockets of industrial zoned land within KCDC that are of a suitable size along with the Otaki pocket. A closer look at these pockets identifies some potential within Table 2.4 below.

*Table 2.4 - KCDC - Possible sites*



9(2)(b)(ii)

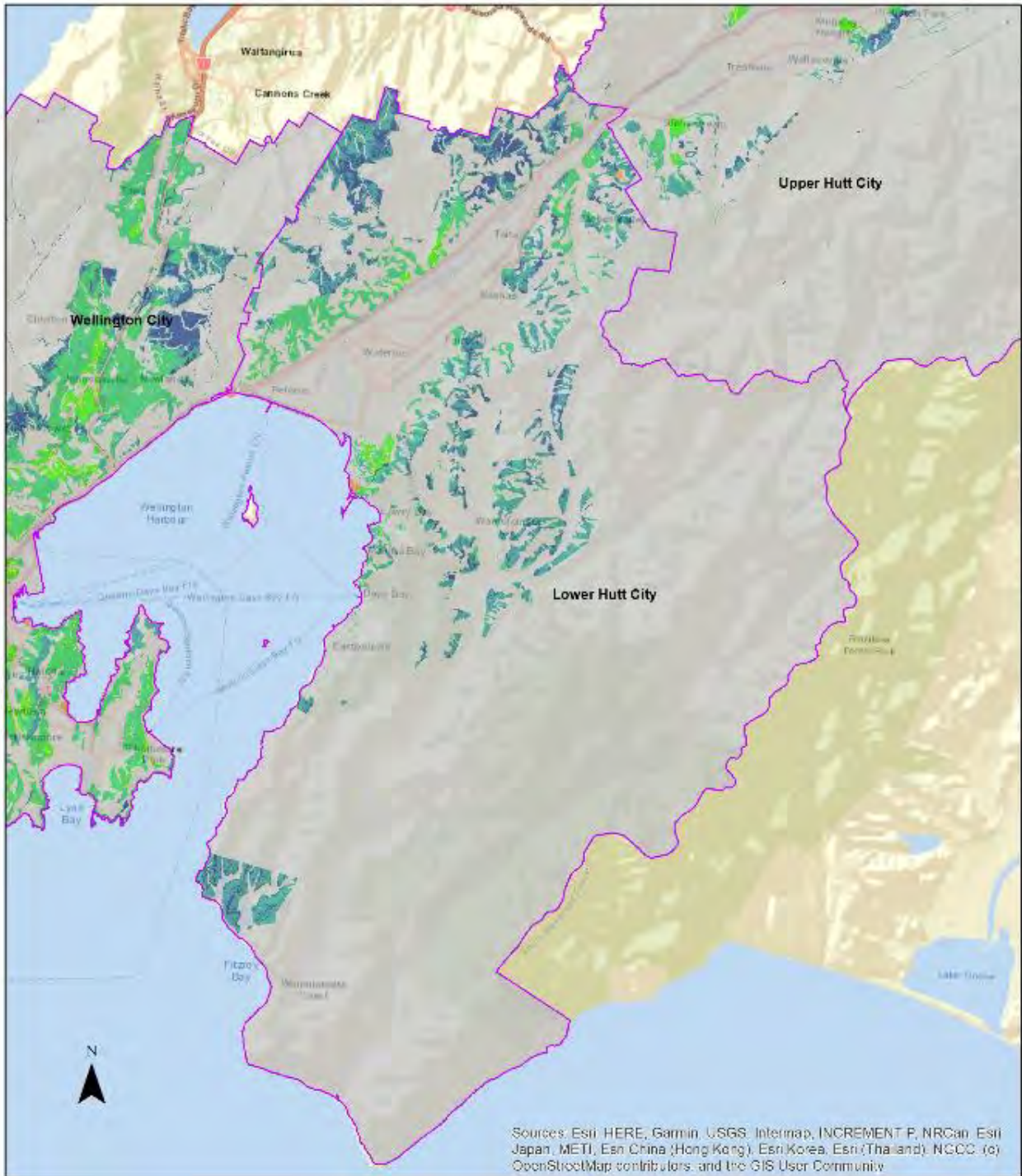
9(2)(b)(ii)

## 2.2.3 Hutt City

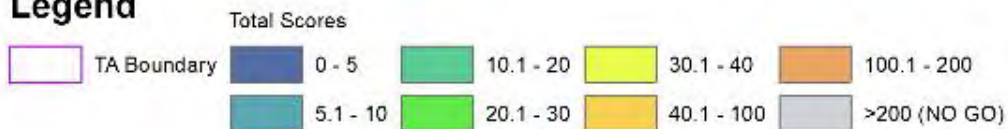
### 2.2.3.1 City of Lower Hutt District Plan

Hutt City Council are in the early stages of their district plan review. No proposed plan has been notified or drafted at this stage.

### 2.2.3.2 HCC Heat Map



#### Legend



NOTE:  
Lower score, less constraints

Property size constraint is not included on this map

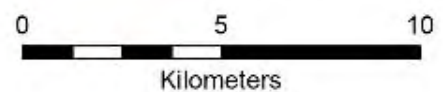


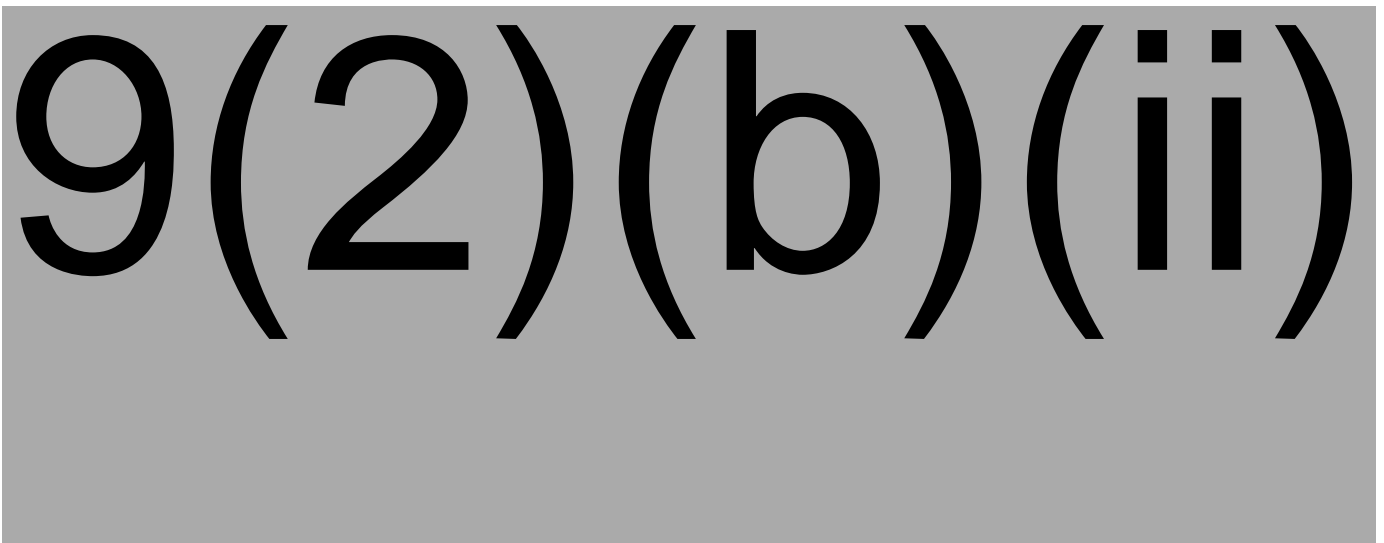
Figure 2.4 'Heat Map' of HCC

The heat map for Lower Hutt identifies areas of rural zoned sites that would be large enough with the appropriate topography to accommodate a C&D facility. Unfortunately, the MCA process does not differentiate between rural zones and regional parks and as such, this map does not exclude Belmont Regional Park and East Harbour Regional Park where most of the feasible land has been identified through the MCA. Due to this, these pockets of land have not been considered at a more detailed level.

Hutt City does include one distinctive pocket of industrial zoned land known as 'Special Business' within Seaview where the District Plan allows for C&D Facilities as a 'Permitted Activity'. A closer look at this area identifies one potential site which is outlined within Table 2.5 below.

Two further sites have been identified through the workshops held with the project team<sup>1</sup> and are listed below.

Table 2.5 - HCC - Possible sites



<sup>1</sup> Workshop held with project team (PCC, HCC, KCDC and Morrison Low) on 20/04/2021.

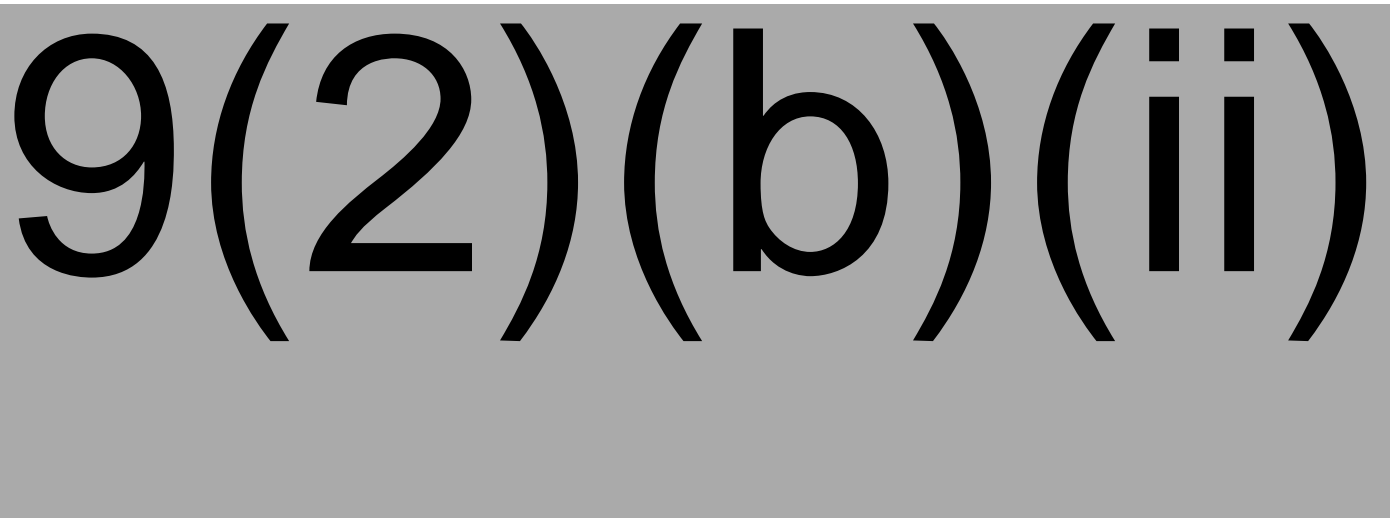
### 3. Site analysis – planning assessment

From the MCA process, a number of sites have been identified as possibly being suitable to either contain a C&D waste processing facility or to contain a 'satellite' facility which could include stockpiling or a smaller sorting facility which feeds into a larger facility.

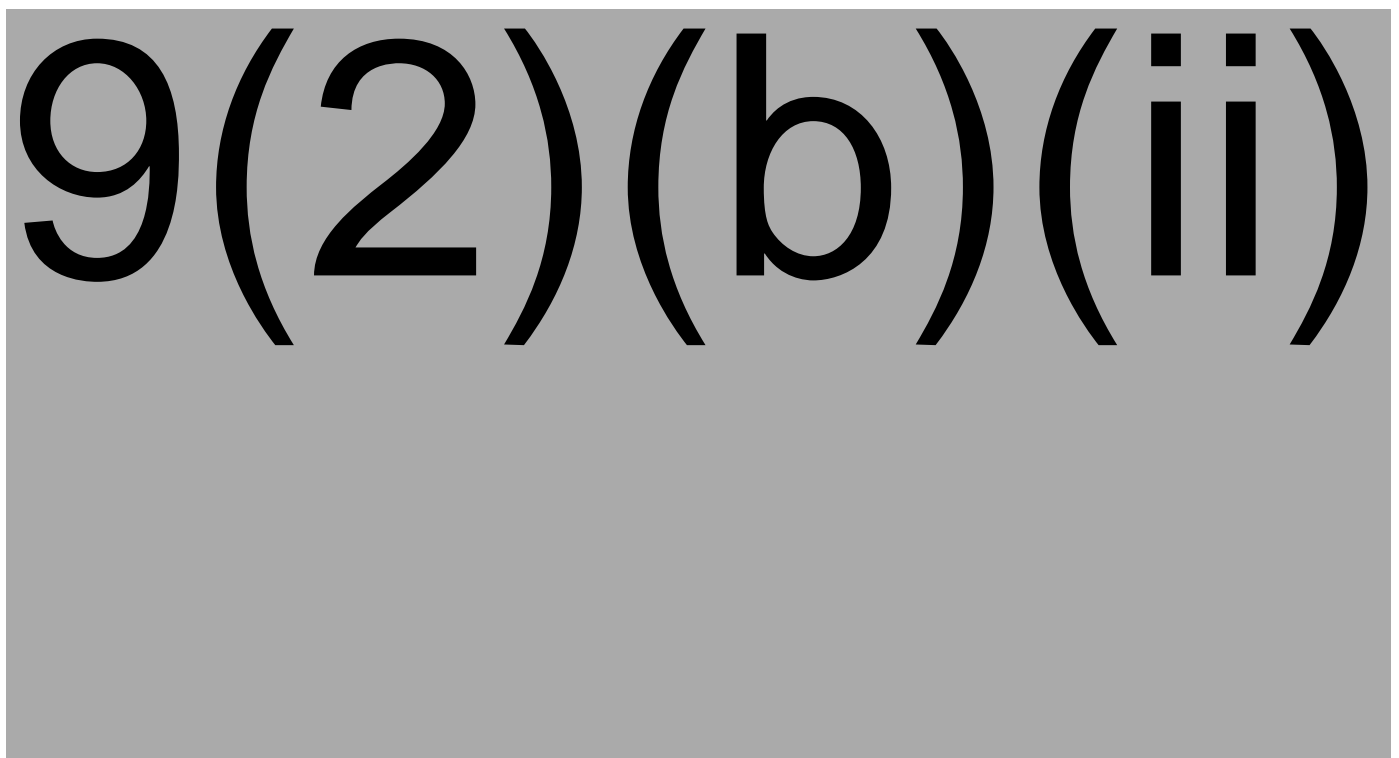
The findings of the initial MCA were presented to the project team in 'Workshop 2'<sup>2</sup> held on 20 April 2021. It was decided at this point to focus on 9(2)(b) sites of interest across PCC, KCDC and HCC.

A desktop planning assessment for these 9(2)(b) sites is provided within this section and summarised within Table 3.1 below. At the end of each site assessment, an outline of the key planning constraints and benefits/opportunities is provided.

Table 3.1 - Sites of interest



#### 3.1 Porirua City



<sup>2</sup> Workshops are held with the project team to present findings from reports and as 'fact finding' sessions. Workshop 1 was held on 8 April 2021 and was an introductory session including visiting a range of potential sites within PCC.

9(2)(b)(ii)

9(2)(b)(ii)

9(2)(b)(ii)

9(2)(b)(ii)

\* District Plan legends are attached within Appendix C

### 3.1.1.1 High-level Planning Assessment

Relevant Plan or Planning Document	Assessment
<b>Operative District Plan (ODP) – Industrial Zone</b>	<p><b>Land use</b></p> <p>C&amp;D Facilities are not defined in the ODP. However, they are not specifically identified as Controlled, Restricted Discretionary, Discretionary or Non-Complying activities either. A C&amp;D facility would therefore be considered a Permitted Activity under the ODP and would not require resource consent. However, other standards such as noise, traffic and access would also need to be assessed against the relative rules within the ODP to identify if resource consent is needed for a breach of those standards.</p>
	<p><b>Earthworks</b></p> <p>Earthworks exceeding 400m<sup>2</sup> is a Discretionary Activity and requires resource consent.</p> <p>Although the site is relatively flat and earthworks will not be extensive, it is still likely that an earthworks resource consent would be required due to the low thresholds within the ODP. Sediment and erosion control measures will need to be outlined within the application.</p>
<b>Proposed District Plan (PDP) – General Industrial Zone</b>	<p><b>Land use</b></p> <p>Construction and demolition facilities are defined as a ‘waste management facility’ within the PDP. Within the General Industrial Zone, waste management facilities are a ‘Discretionary’ Activity. Resource consent would therefore be required to establish a C&amp;D facility on the site. However, the intention of the General Industrial Zone is to provide for a range of industrial activities and the zone provision recognise that such activities may emit objectionable odour, dust or noise.</p> <p>Council is not restricted to any matters of discretion when considering a resource consent application for a discretionary activity. However, in this instance, the main effects to consider would include noise effects on neighbouring properties (including the residential zone further to the east), dust and odour. An acoustic assessment and air quality assessment would be required to accompany a resource consent application.</p>
	<p><b>Earthworks</b></p> <p>Earthworks exceeding 400m<sup>2</sup> in area is a Restricted Discretionary Activity. The transport of material resulting from or required for earthworks (including earth, soil, clay, sand and rock) off or onto the site exceeding 200m<sup>3</sup> is also a Restricted Discretionary Activity.</p> <p>Although the site is relatively flat and earthworks will not be extensive, it is still likely that an earthworks resource consent would be required due to the low thresholds within the PDP. Sediment and erosion control measures will need to be outlined within the application.</p>
	<p><b>Traffic</b></p> <p>The site has an established vehicle access directly tc9(2)(b)(ii) which appears to be of two-way design and approximately 16m in width. The minimum width for vehicle access for a ‘Level 4’ (high use) vehicle access is 21m under the PDP and therefore is another resource consent trigger. The vehicle crossing would need to be assessed appropriately and a traffic impact assessment included with the resource consent application to assess site access, traffic safety and internal traffic movements.</p>

<p><b>National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 (NES CS)</b></p>	<p>It is more than likely that the site has been utilised for an activity that is within the Hazardous Activities and Industry List (HAIL). A preliminary site investigation (PSI) would need to be undertaken to establish if the NES CS is applicable and a Detailed Site Investigation (DSI) may then also be required which would include soil testing to establish the level of contamination. The PSI and DSI would determine if a resource consent would be required under the NES CS.</p>
<p><b>Greater Wellington Regional Council - Proposed Natural Resources Plan (Appeals Version)</b></p>	<p><b>Air Quality</b></p> <p>Rule 27 - The discharge of contaminants into air from the handling of bulk solid materials including from the activities of quarrying, mining, cleanfilling, blasting, extraction, crushing, screening, processing, stockpiling, handling, conveying, sorting, and storage is a permitted activity provided they do not result in discharges that would result in odour, gas or vapour which is noxious, dangerous, offensive or objectionable at or beyond the boundary of the property. An air quality assessment would need to be undertaken to assess the effects of dust and odour. If this assessment concludes that there would be odour or dust effects beyond the boundaries of the property, a Discretionary Activity resource consent would need to be applied for and would need to include written approvals from affected persons.</p> <p><b>Discharges to Land</b></p> <p>Stormwater discharges to land is a permitted activity under Rule 49 as long as stormwater is passed through an interceptor and the discharge does not contain more than 15 milligrams per litre of total petroleum hydrocarbons prior to release.</p> <p><b>Earthworks</b></p> <p>The use of land for earthworks, and the associated discharge of sediment-laden runoff into water or onto or into land where it may enter water from earthworks up to a total area of 3,000m<sup>2</sup> per property per 12 month period, is a permitted activity under Rule 99 as long as sediment and erosion controls are in place.</p>
<p><b>Greater Wellington Regional Council – Soil Plan</b></p>	<p>This plan is still applicable as Rule 101 (earthworks) within the Natural Resources Plan is still under Appeal.</p> <p>Works on the site would not trigger any rules under this plan as the site is not located within an erosion prone area and no vegetation would be removed.</p>
<p><b>Greater Wellington Regional Council – Discharges to Land</b></p>	<p>This plan is still applicable as Rule 49 within the Natural Resources Plan is still under Appeal.</p> <p>The discharge of contaminants from, onto or into land used for the disposal of waste materials, with the exception of land used exclusively for cleanfill disposal, but including disposal at a landfill, rubbish dump or tip, is a Discretionary Activity under Rule 10. A resource consent application would need to be accompanied by details of stormwater containment, treatment and disposal.</p>

### 3.1.2 9(2)(b)(ii)

Benefits/Opportunities	Constraints
<ul style="list-style-type: none"> <li>- Appropriate site area. Adequate site area for heavy vehicle turning, stockpiling, sorting and processing and to contain a large facility.</li> <li>- Zoned industrial and the activity is permitted under the ODP. Appropriate use of site.</li> <li>- Site access is reasonable with wide vehicle crossing and direct access to road.</li> <li>- No overlays or constraints identified on ODP or PDP maps.</li> <li>- Site is vacant with flat topography making earthworks minimal.</li> </ul>	<ul style="list-style-type: none"> <li>- Privately owned, however currently up for lease.</li> <li>- Residential zone approximately 150m to the east. This is occupied by the 9(2)(b)(ii). There is a potential for noise and dust to have adverse effects, however mitigation such as indoor facilities and dust management available.</li> </ul>

### 3.1.3 Trip Analysis

Through workshop 3<sup>3</sup>, it was decided to further explore this site in terms of accessibility. A trip analysis was undertaken through GIS to understand travel times from three identified points being:

: 9(2)(b)(ii)

The GIS analysis assumed that speed limits were approximately 30km/hr on streets with a signposted maximum speed of 50km/hr and 80km/hr on roads with a signposted maximum speed of 100km/hr. The GIS map is attached within Appendix D. Travel times from each location are as follows:

Route	Average Travel Time
9(2)(b)(ii)	16 minutes
	8 minutes
	25 minutes

The analysis has not considered Transmission Gully at this time; however, it can be assumed that travel times would improve from Paraparaumu once opened.

Overall, the site has good access with close links to SH1 and Cannons Creek. Of note is that the Transmission Gully interchange is approximately 950 m to the north east of 9(2)(b)(ii) as shown in Figure 3.4 below.

<sup>3</sup> Workshop 3 was held on 4 May 2021 with the project team

9(2)(b)(ii)

### 3.2.1 Spicer Landfill – Broken Hill Road

A planning desktop assessment is provided within Report 7 - Resource Recovery Hub Feasibility Study.

3.2.2 9(2)(b)(ii)

Feature	Commentary
Address:	9(2)(b)(ii)
Legal Description:	
Site Area:	
Zoning:	
Overlays:	
Current use:	
Infrastructure:	

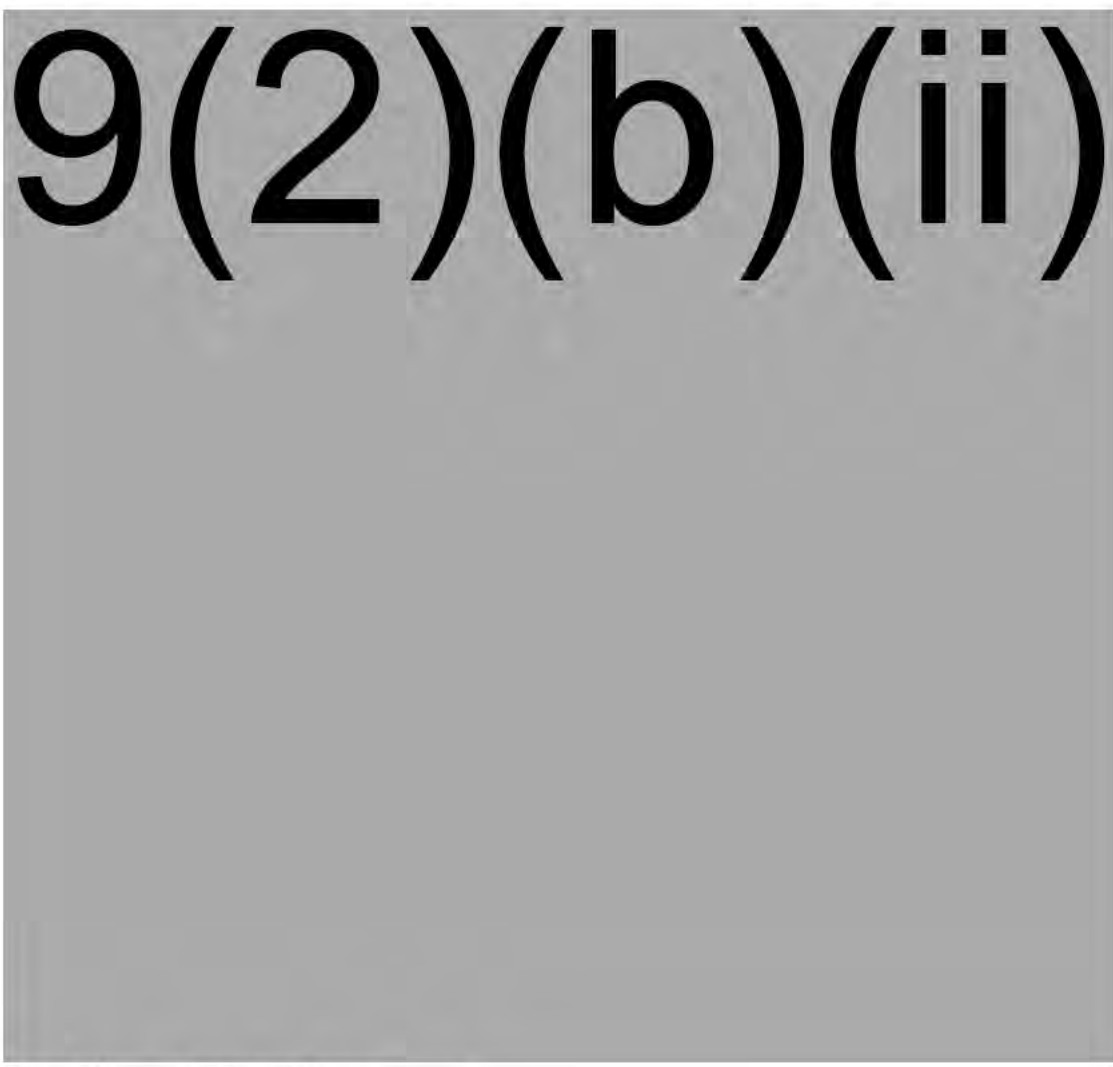
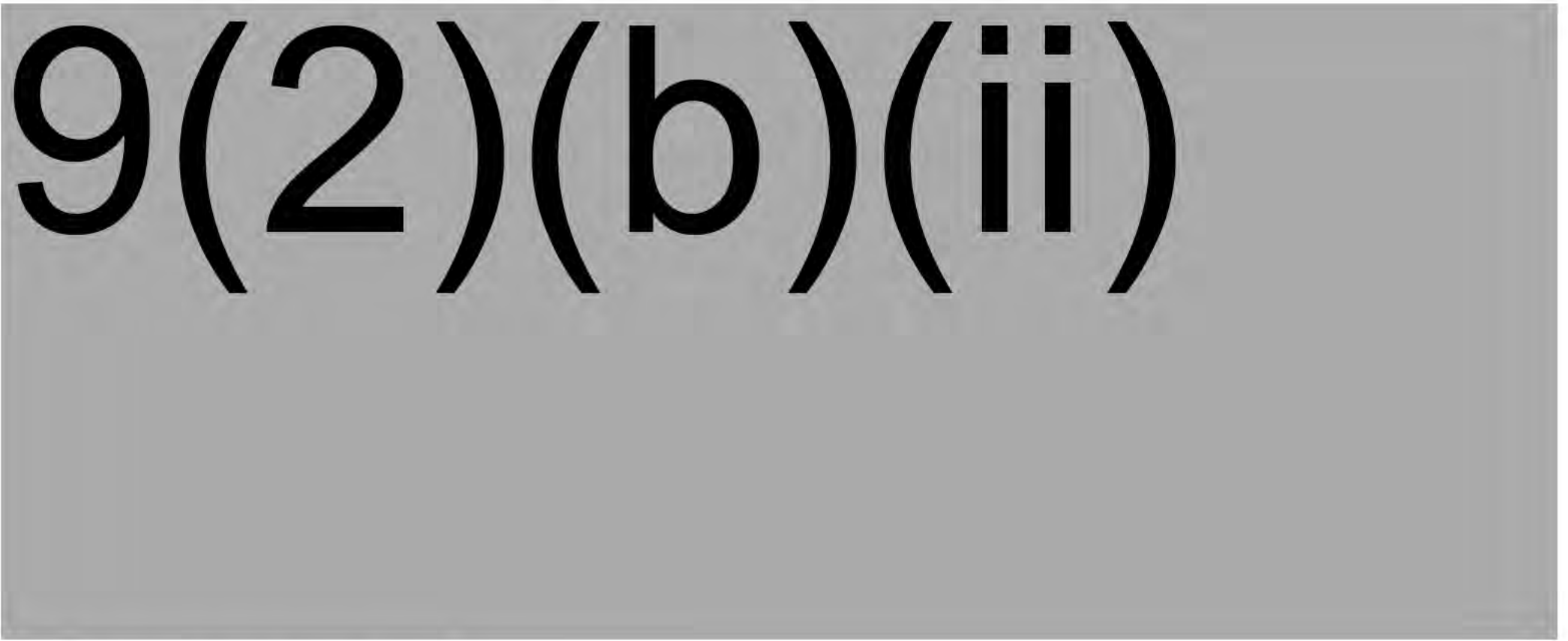


Figure 3.5 Aerial view of 9(2)(b)(ii)

Figure 3.6 PCC Operative District Plan Zoning

Figure 3.7 PCC Proposed District Plan Zoning



\* District Plan legends are attached within Appendix C

### 3.2.2.1 High-level Planning Assessment

Relevant Plan or Planning Document	Assessment
<b>Operative District Plan (ODP) – Recreation Zone</b>	<p><b>Land use</b></p> <p>C&amp;D facilities are not defined in the ODP and are considered a non-complying activity. This is the highest threshold for resource consent applications to be assessed against. Council is not restricted to any matters when considering a non-complying activity. The council must be satisfied that the effects of a non-complying activity will be minor and that the activity is not contrary to the relevant objectives and policies of the district plan. In this instance, a C&amp;D waste processing facility would be contrary to the objectives and policies of the Recreation Zone and it is highly likely that a resource consent application would be fully notified because of this.</p>
	<p><b>Earthworks</b></p> <p>Earthworks exceeding 100m<sup>2</sup> is a Restricted Discretionary Activity.</p> <p>Although the site is relatively flat and earthworks will not be extensive, it is still likely that an earthworks resource consent would be required due to the low thresholds within the ODP. Sediment and erosion control measures will need to be outlined within the application.</p>
<b>Proposed District Plan (PDP) – Sport and Active Recreation Zone</b>	<p><b>Land use</b></p> <p>Construction and demolition facilities are defined as an ‘industrial activity’ within the Sport and Active Recreation Zone and are non-complying activities. Council is not restricted to any matters of discretion when considering a resource consent application for a non-complying activity. The council must be satisfied that the effects of a non-complying activity will be minor and that the activity is not contrary to the relevant objectives and policies of the district plan. In this instance, a C&amp;D waste processing facility would be contrary to the objectives and policies of the Sport and Active Recreation Zone and it is highly likely that a resource consent application would be fully notified because of this.</p> <p>In this instance, the main effects to consider would include noise effects on neighbouring properties (including the residential zone overlooking the site to the east), dust and odour. An acoustic assessment and air quality assessment would be required to accompany a resource consent application.</p>
	<p><b>Earthworks</b></p> <p>Earthworks exceeding 500m<sup>2</sup> in area is a Restricted Discretionary Activity. The transport of material resulting from or required for earthworks (including earth, soil, clay, sand and rock) off or onto the site exceeding 200m<sup>3</sup> is also a Restricted Discretionary Activity.</p> <p>Although the site is relatively flat and earthworks will not be extensive, it is still likely that an earthworks resource consent would be required due to the low thresholds within the PDP. Sediment and erosion control measures will need to be outlined within the application.</p>
	<p><b>Traffic</b></p> <p>The site has access to 9(2)(b)(ii) via a driveway which is shared by the nursery and sports grounds.</p> <p>The vehicle crossing is approximately 13m in width and caters for two-way traffic. The minimum width for vehicle access for a ‘Level 4’ vehicle access is 21m under the PDP and is another trigger for a resource consent. The vehicle</p>

	crossing would need to be assessed appropriately and a traffic impact assessment included with the resource consent application to assess site access, traffic safety and internal traffic movements. Emphasis would also be on the capability of Sievers Grove to handle heavy vehicle traffic along a narrow carriageway with competing residential use.
<b>National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 (NES CS)</b>	The site is known to be a closed landfill. Landfills are identified on the Hazardous Activities and Industry List (HAIL – activity G3). A preliminary site investigation (PSI) would need to be undertaken to establish if the NES CS is applicable and a Detailed Site Investigation (DSI) may then also be required which would include soil testing to establish the level of contamination on site. The PSI and DSI would determine if a resource consent would be required under the NES CS, which is more likely than not.
<b>Greater Wellington Regional Council - Proposed Natural Resources Plan (Appeals Version)</b>	<p><b>Air Quality</b></p> <p>Rule 27 - The discharge of contaminants into air from the handling of bulk solid materials including from the activities of quarrying, mining, cleanfilling, blasting, extraction, crushing, screening, processing, stockpiling, handling, conveying, sorting, and storage is a permitted activity provided they do not result in discharges that would result in odour, gas or vapour, which is noxious, dangerous, offensive or objectionable at or beyond the boundary of the property. An air quality assessment would need to be undertaken to assess the effects of dust and odour. If this assessment concludes that there would be odour or dust effects beyond the boundaries of the property, a Discretionary Activity resource consent would need to be applied for and would need to include written approvals from affected persons.</p> <p><b>Discharges to Land</b></p> <p>Stormwater discharges to land is a permitted activity under Rule 49 as long as stormwater is passed through an interceptor and the discharge does not contain more than 15 milligrams per litre of total petroleum hydrocarbons prior to release.</p> <p><b>Stream – 9(2)(b)(ii)</b></p> <p>Any discharges to the 9(2)(b)(ii) would require resource consent as a Discretionary Activity under Rule 53.</p> <p><b>Earthworks</b></p> <p>The use of land, and the associated discharge of sediment-laden runoff into water or onto or into land where it may enter water from earthworks up to a total area of 3,000m<sup>2</sup> per property per 12-month period is a permitted activity under Rule 99 as long as sediment and erosion controls are in place.</p>
<b>Greater Wellington Regional Council – Soil Plan</b>	<p>This plan is still applicable as Rule 101 (earthworks) within the Natural Resources Plan is still under Appeal.</p> <p>Works on the site would not trigger any rules under this plan as the site is not located within an erosion prone area and no vegetation will be removed.</p>
<b>Greater Wellington Regional Council – Discharges to Land</b>	<p>This plan is still applicable as Rule 49 within the Natural Resources Plan is still under Appeal.</p> <p>The discharge of contaminants from onto or into land used for the disposal of waste materials, with the exception of land used exclusively for cleanfill disposal, but including disposal at a landfill, rubbish dump or tip, is a Discretionary Activity under Rule 10. A resource consent application would need to be accompanied by details of stormwater containment, treatment and disposal.</p>

### 3.2.3 Summary: 9(2)(b)(ii)

Benefits/Opportunities	Constraints
<ul style="list-style-type: none"> <li>- Appropriate site area and Council owned land.</li> </ul>	<ul style="list-style-type: none"> <li>- Zoned recreation and C&amp;D facilities are non-complying activities. Competing interests with recreational activities.</li> <li>- Third party approvals required from Parks and Recreation most likely.</li> <li>- Site access is constrained (narrow) and 9(2)(b)(ii) is a narrow local road.</li> <li>- Close to residential dwellings along 9(2)(b)(ii) 9(2)(b)(ii) which would be adversely affected by noise, dust and traffic effects. It is most likely that a resource consent application would be notified.</li> <li>- Located on a closed landfill which already faces settlement issues. Landfill gas and leachate would also be an issue.</li> <li>- Two overland flowpaths exist on the site. Site is at risk to flooding.</li> <li>- 9(2)(b)(ii) runs along the western boundary of the site. Works will need to be set back from this stream.</li> </ul>

3.3

9(2)(b)(ii)

3.3.1

Feature	Commentary
Address:	9(2)(b)(ii)
Legal Description:	
Site Area:	
Zoning:	
Overlays:	
Current use:	
Infrastructure:	

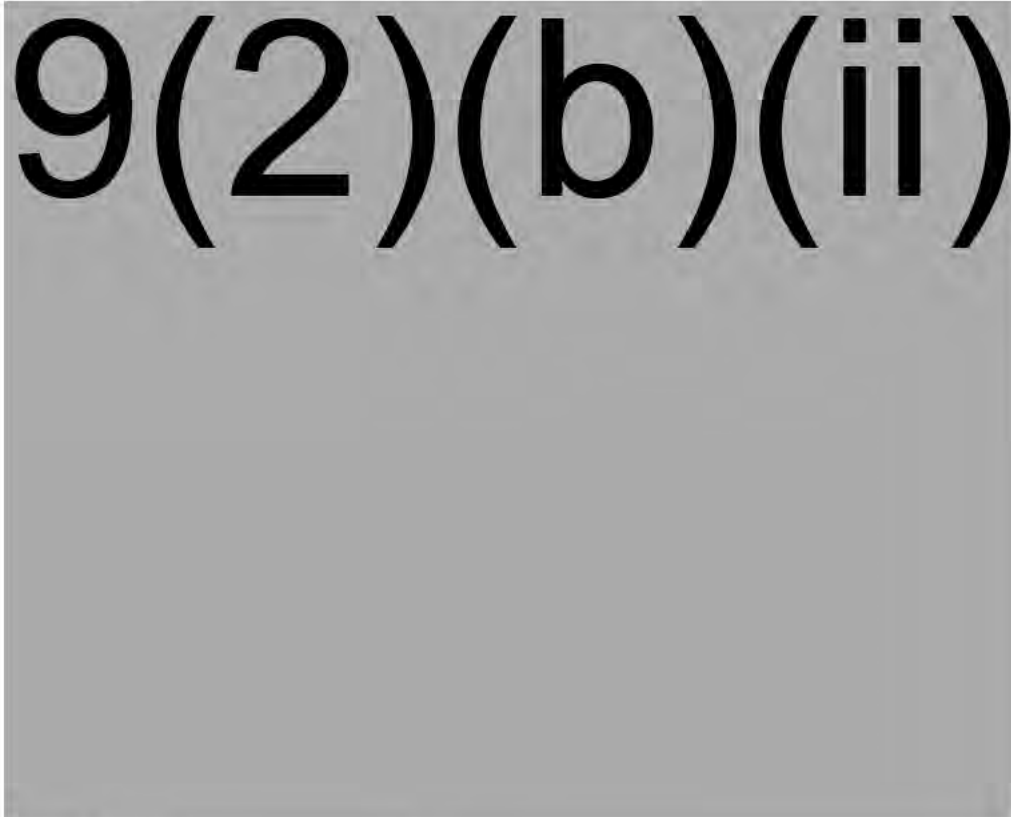


Figure 3.8 Aerial of 9(2)(b)(ii)

9(2)(b)(ii)

\* District Plan legends are attached within Appendix C

### 3.3.1.1 High-level Planning Assessment

Relevant Plan or Planning Document	Assessment
<p>Proposed District Plan (PDP) – Designated site D1119</p>	<p><b>Land use</b></p> <p>The site is designated as the 9(2)(b)(ii) and Kāpiti Coast District Council is the requiring authority. C&amp;D facilities would fall within the purpose of the designation and would therefore not be subject to the underlying Rural Dunes Zone rules.</p> <p>An outline plan of works would need to be submitted to KCDC outlining:</p> <ul style="list-style-type: none"> <li>- the height, shape, and bulk of the public work, project, or work; and</li> <li>- the location on the site of the public work, project, or work;</li> <li>- the likely finished contour of the site; - the vehicular access, circulation, and the provision for parking;</li> <li>- the landscaping proposed; and</li> <li>- any other matters to avoid, remedy, or mitigate any adverse effects on the environment, including noise, traffic dust effects.</li> </ul> <p><b>M2PP Expressway Designation</b></p> <p>Parts of the site are subject to the expressway designation where areas of the site are earmarked for road widening and road curtilage such as on/off ramps. This reduces potential areas for use, however through workshop 3, it was established that this designation would most likely not be required by NZTA. This would need to be further investigated to understand if development can be undertaken within this overlay. NZTA would need to be consulted along with KCDC policy planners.</p> <p style="font-size: 48pt; text-align: center;">9(2)(b)(ii)</p>

Figure 3.10 9(2)(b)(ii) affecting site

<p><b>National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 (NES CS)</b></p>	<p>The site is known to be a landfill. Landfills are identified on the Hazardous Activities and Industry List (HAIL – activity G3). A preliminary site investigation (PSI) would need to be undertaken to establish if the NES CS is applicable and a Detailed Site Investigation (DSI) may then also be required which would include soil testing to establish the level of contamination on site. The PSI and DSI would determine if a resource consent would be required under the NES CS, which is more likely than not.</p>
<p><b>Greater Wellington Regional Council - Proposed Natural Resources Plan (Appeals Version)</b></p>	<p>Whilst the site is designated and not subject to the district plan rules, the relevant regional rules still need to be considered and resource consents obtained where needed.</p> <p><b>Air Quality</b></p> <p>Rule 27 - The discharge of contaminants into air from the handling of bulk solid materials including from the activities of quarrying, mining, cleanfilling, blasting, extraction, crushing, screening, processing, stockpiling, handling, conveying, sorting, and storage is a permitted activity provided they do not result in discharges that would result in odour, gas or vapour which is noxious, dangerous, offensive or objectionable at or beyond the boundary of the property. An air quality assessment would need to be undertaken to assess the effects of dust and odour including cumulative effects from the landfill use. If this assessment concludes that there would be odour or dust effects beyond the boundaries of the property, a Discretionary Activity resource consent would need to be applied for and would need to include written approvals from affected persons.</p> <p><b>Discharges to Land</b></p> <p>Stormwater discharges to land is a permitted activity under Rule 49 as long as stormwater is passed through an interceptor and the discharge does not contain more than 15 milligrams per litre of total petroleum hydrocarbons prior to release.</p> <p><b>Earthworks</b></p> <p>The use of land, and the associated discharge of sediment-laden runoff into water or onto or into land where it may enter water from earthworks up to a total area of 3,000m<sup>2</sup> per property per 12-month period is a permitted activity under Rule 99 as long as sediment and erosion controls are in place.</p>
<p><b>Greater Wellington Regional Council – Soil Plan</b></p>	<p>This plan is still applicable as Rule 101 (earthworks) within the Natural Resources Plan is still under Appeal.</p> <p>Works on the site would not trigger any rules under this plan as the site is not located within an erosion prone area and no vegetation will be removed.</p>
<p><b>Greater Wellington Regional Council – Discharges to Land</b></p>	<p>This plan is still applicable as Rule 49 within the Natural Resources Plan is still under Appeal.</p> <p>The discharge of contaminants from onto or into land used for the disposal of waste materials, with the exception of land used exclusively for cleanfill disposal, but including disposal at a landfill, rubbish dump or tip, is a Discretionary Activity under Rule 10. A resource consent application would need to be accompanied by details of stormwater containment, treatment and disposal.</p>

### 3.3.2 Summary: 9(2)(b)(ii)

Benefits/Opportunities	Constraints
<ul style="list-style-type: none"> <li>- Appropriate site area and Council owned land.</li> <li>- Designated site and therefore district plan rules are not applicable. An outline plan of works will need to be submitted to council.</li> <li>- Located next to State Highway 1, good accessibility to the rest of the Wellington Region.</li> </ul>	<ul style="list-style-type: none"> <li>- 9(2)(b)(ii) earmarked for large areas of the site. This restricts areas of use and competing with operative landfill areas. Status of designation needs to be further investigated.</li> <li>- The site is a closed landfill (with some capping still to be undertaken). These areas are subject to subsidence and landfill gas.</li> <li>- A residential area borders the site to the south east, which has a history of odour and dust complaints. Management and mitigation measures will need to account for this.</li> </ul>

3.4 9(2)(b)(ii)  
3.4.1

Feature	Commentary
Address:	9(2)(b)(ii)
Legal Description:	
Site Area:	
Zoning:	
Overlays:	
Current use:	
Infrastructure:	
Certificate of Title Interests	

9(2)(b)(ii)

Figure 3.12 Aerial of 9(2)(b)(ii)

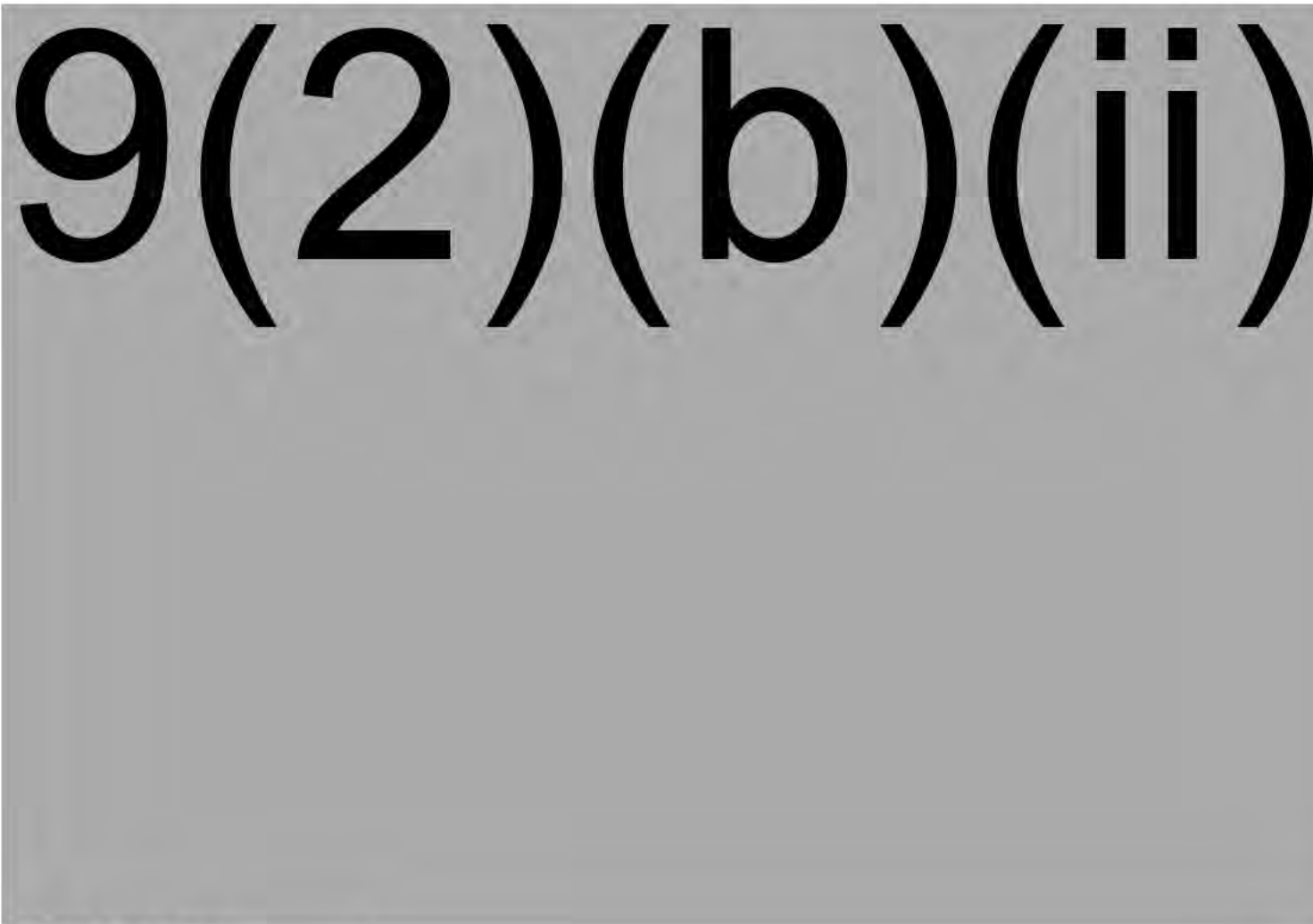


Figure 3.13 9(2)(b)(ii)

\* District Plan legends are attached within Appendix C

### 3.4.1.1 High-level Planning Assessment

Relevant Plan or Planning Document	Assessment
<p><b>Proposed District Plan (PDP) – General Rural</b></p>	<p><b>Land use</b></p> <p>Landfills and waste transfer stations are discretionary activities within the General Rural Zone. It could be expected that C&amp;D facilities would fall within this definition.</p> <p>Council is not restricted to any matters of discretion when considering a resource consent application for a discretionary activity, however in this instance, the main effects to consider would include noise effects on neighbouring properties (including the residential zone further to the south east), dust and odour. Dust effects on the state highway will also need to be considered. An acoustic assessment and air quality assessment would be required to accompany a resource consent application.</p> <p><b>River Corridor</b></p> <p>All new buildings and structures or additions within the Secondary River Corridor must be 20m<sup>2</sup> or less and set back 20m from any flood protection structure.</p> <p><b>Faultline Study Area</b></p> <p>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 are Restricted Discretionary Activities under Rule 14H.2.1. 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.</p> <p>The fault overlay runs through the site as shown on Figure 3.13 above.</p> <p><b>High Trip Generator</b></p> <p>If the activity exceeds 500 trips per day, then a Restricted Discretionary Activity resource consent is required under Rule 14A.5.1. The site is adjacent to <sup>9(2)(b)(iii)</sup> and approval from Waka Kotahi NZ Transport Agency would be required.</p> <p><b>State Highway and Rail Corridor Buffers</b></p> <p>The site is subject to the State Highway and rail corridor buffers. Buildings/structures are restricted from these setbacks.</p>
<p><b>National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 (NES CS)</b></p>	<p>Aerial photos suggest that the site has been used for industrial activities (depot). A preliminary site investigation (PSI) would need to be undertaken to establish if the NES CS is applicable and a Detailed Site Investigation (DSI) may then also be required which would include soil testing to establish the level of contamination on site. The PSI and DSI would determine if a resource consent would be required under the NES CS, which is more likely than not.</p>
<p><b>Greater Wellington Regional Council - Proposed Natural Resources Plan (Appeals Version)</b></p>	<p><b>Air Quality</b></p> <p>Rule 27 - The discharge of contaminants into air from the handling of bulk solid materials including from the activities of quarrying, mining, cleanfilling, blasting, extraction, crushing, screening, processing, stockpiling, handling, conveying, sorting, and storage is a permitted activity provided they do not result in discharges that would result in odour, gas or vapour which is noxious, dangerous,</p>

	<p>offensive or objectionable at or beyond the boundary of the property. An air quality assessment would need to be undertaken to assess the effects of dust and odour. If this assessment concludes that there would be odour or dust effects beyond the boundaries of the property, a Discretionary Activity resource consent would need to be applied for and would need to include written approvals from affected persons. Particular focus will need to be made on the effects to the residential dwellings to the south east and the state highway.</p> <p><b>Discharges to Land</b></p> <p>Stormwater discharges to land is a permitted activity under Rule 49 as long as stormwater is passed through an interceptor and the discharge does not contain more than 15 milligrams per litre of total petroleum hydrocarbons prior to release.</p> <p><b>Earthworks</b></p> <p>The use of land, and the associated discharge of sediment-laden runoff into water or onto or into land where it may enter water from earthworks up to a total area of 3,000m<sup>2</sup> per property per 12-month period is a permitted activity under Rule 99 as long as sediment and erosion controls are in place.</p>
<b>Greater Wellington Regional Council – Soil Plan</b>	<p>This plan is still applicable as Rule 101 (earthworks) within the Natural Resources Plan is still under Appeal.</p> <p>Works on the site would not trigger any rules under this plan as the site is not located within an erosion prone area and no vegetation will be removed.</p>
<b>Greater Wellington Regional Council – Discharges to Land</b>	<p>This plan is still applicable as Rule 49 within the Natural Resources Plan is still under Appeal.</p> <p>The discharge of contaminants from onto or into land used for the disposal of waste materials, with the exception of land used exclusively for cleanfill disposal, but including disposal at a landfill, rubbish dump or tip, is a Discretionary Activity under Rule 10. A resource consent application would need to be accompanied by details of stormwater containment, treatment and disposal.</p>

### 3.4.2 Summary: 9(2)(b)(ii)

Benefits/Opportunities	Constraints
<ul style="list-style-type: none"> <li>- 9(2)(b)(ii) has an appropriate site area.</li> <li>- 9(2)(b)(ii) is restricted by broken up parcel areas.</li> <li>- Located next to 9(2)(b)(ii), good accessibility to the rest of the Wellington Region.</li> </ul>	<ul style="list-style-type: none"> <li>- Multiple constraints include faultline study area, flooding and state highway and rail corridor buffers.</li> <li>- Affected parties' approvals would most likely be required from Waka Kotahi NZ Transport Agency.</li> <li>- Dust effects on state highway users may be an ongoing issue.</li> <li>- Site is bordered by residential dwellings to the south east (although rail corridor provides some separation). Dust and noise effects to these sensitive receptors would need to be considered.</li> </ul>

### 3.4.3 9(2)(b)(ii)

Feature	Commentary
Address:	9(2)(b)(ii)
Legal Description:	
Site Area:	
Zoning:	
Overlays:	
Current use:	
Infrastructure:	

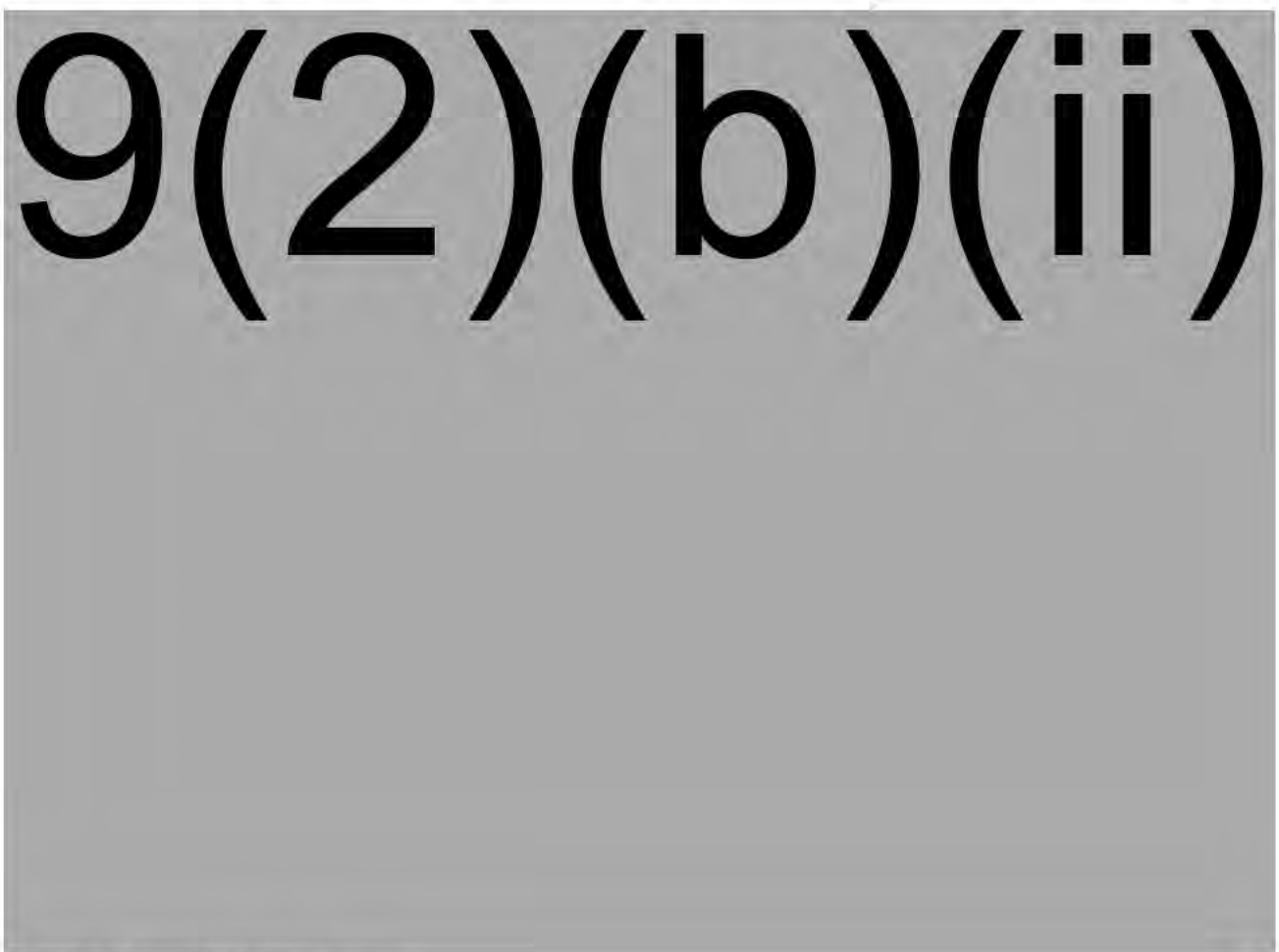


Figure 3.14 Aerial view of 9(2)(b)(ii)

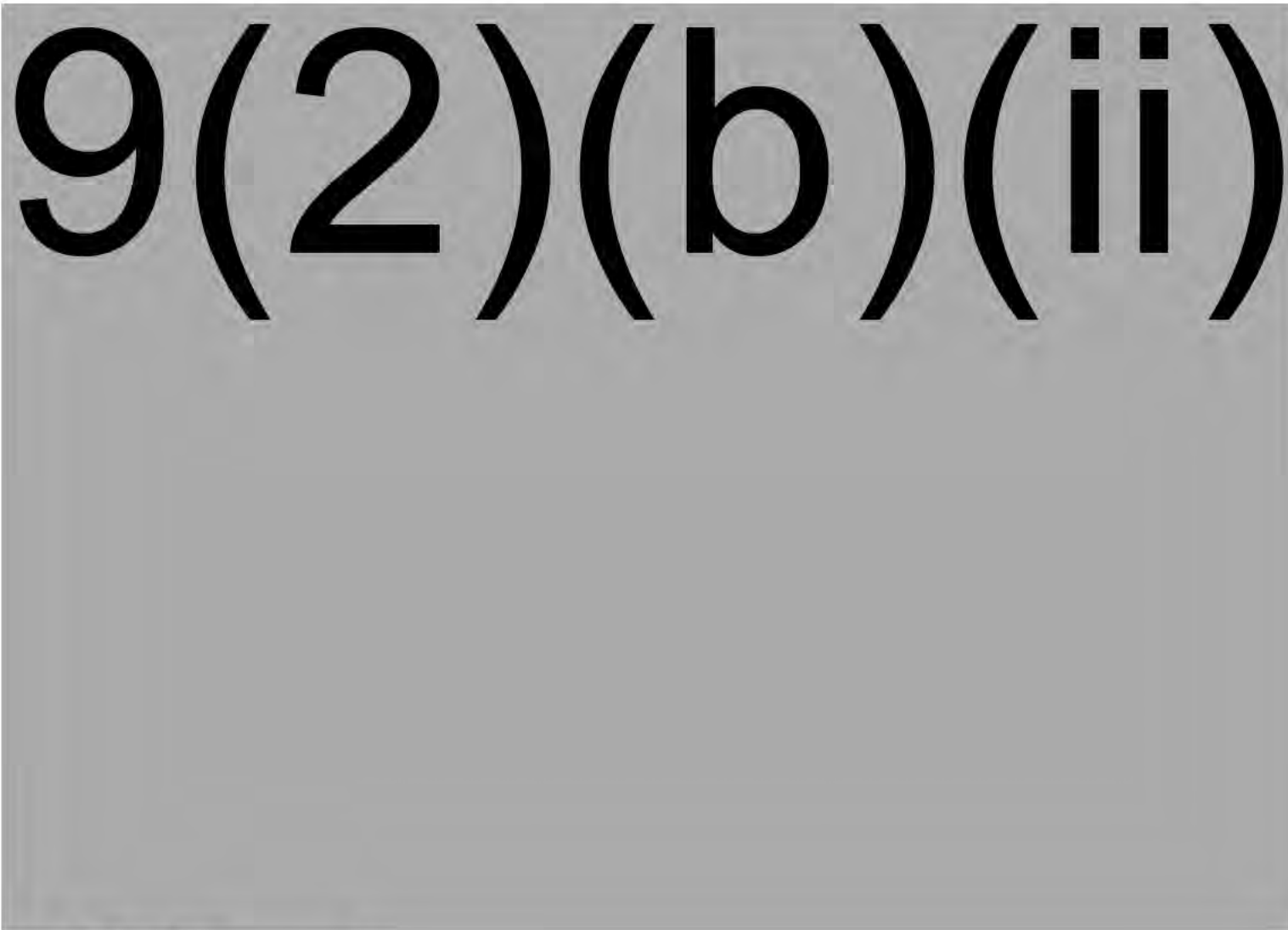


Figure 3.15

9(2)(b)(ii)

\* District Plan legends are attached within Appendix C

### 3.4.3.1 High-level Planning Assessment

Relevant Plan or Planning Document	Assessment
<p><b>Proposed District Plan (PDP) – Designated site D1119</b></p>	<p><b>Land use</b></p> <p>The site is designated as 9(2)(b)(ii) and Hutt City Council is the requiring authority. C&amp;D facilities would fall within the purpose of the designation and would therefore not be subject to the underlying Passive Recreation Zone rules.</p> <p>An outline plan of works would need to be submitted to HCC outlining:</p> <ul style="list-style-type: none"> <li>- the height, shape, and bulk of the public work, project, or work; and</li> <li>- the location on the site of the public work, project, or work;</li> <li>- the likely finished contour of the site; - the vehicular access, circulation, and the provision for parking;</li> <li>- the landscaping proposed; and</li> <li>- any other matters to avoid, remedy, or mitigate any adverse effects on the environment, including noise, traffic dust effects.</li> </ul>
<p><b>National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations 2011 (NES CS)</b></p>	<p>The site is known to be a landfill. Landfills are identified on the Hazardous Activities and Industry List (HAIL – activity G3). A preliminary site investigation (PSI) would need to be undertaken to establish if the NES CS is applicable and a Detailed Site Investigation (DSI) may then also be required which would include soil testing to establish the level of contamination on site. The PSI and DSI would determine if a resource consent would be required under the NES CS, which is more likely than not.</p>
<p><b>Greater Wellington Regional Council - Proposed Natural Resources Plan (Appeals Version)</b></p>	<p>Whilst the site is designated and not subject to the district plan rules, the relevant regional rules still need to be considered and resource consents obtained where needed.</p> <p><b>Air Quality</b></p> <p>Rule 27 - The discharge of contaminants into air from the handling of bulk solid materials including from the activities of quarrying, mining, cleanfilling, blasting, extraction, crushing, screening, processing, stockpiling, handling, conveying, sorting, and storage is a permitted activity provided they do not result in discharges that would result in odour, gas or vapour, which is noxious, dangerous, offensive or objectionable at or beyond the boundary of the property. An air quality assessment would need to be undertaken to assess the effects of dust and odour. If this assessment concludes that there would be odour or dust effects beyond the boundaries of the property, a Discretionary Activity resource consent would need to be applied for and would need to include written approvals from affected persons.</p> <p>The site is well isolated from any sensitive receptors and so it is not expected that any adverse effects would arise associated to dust and odour.</p> <p><b>Discharges to Land</b></p> <p>Stormwater discharges to land is a permitted activity under Rule 49 as long as stormwater is passed through an interceptor and the discharge does not contain more than 15 milligrams per litre of total petroleum hydrocarbons prior to release.</p>

	<p>It is expected that existing discharge consents are in place that can be altered to include discharges from this site.</p> <p><b>Earthworks</b></p> <p>The use of land, and the associated discharge of sediment-laden runoff into water or onto or into land where it may enter water from earthworks up to a total area of 3,000m<sup>2</sup> per property per 12-month period is a permitted activity under Rule 99 as long as sediment and erosion controls are in place.</p>
<b>Greater Wellington Regional Council – Soil Plan</b>	<p>This plan is still applicable as Rule 101 (earthworks) within the Natural Resources Plan is still under Appeal.</p> <p>Works on the site would not trigger any rules under this plan as the site is not located within an erosion prone area and no vegetation will be removed.</p>
<b>Greater Wellington Regional Council – Discharges to Land</b>	<p>This plan is still applicable as Rule 49 within the Natural Resources Plan is still under Appeal.</p> <p>The discharge of contaminants from onto or into land used for the disposal of waste materials, with the exception of land used exclusively for cleanfill disposal, but including disposal at a landfill, rubbish dump or tip, is a Discretionary Activity under Rule 10. A resource consent application would need to be accompanied by details of stormwater containment, treatment and disposal.</p>

### 3.4.4 Summary: 9(2)(b)(ii) – Existing Transfer Station Site

Benefits/Opportunities	Constraints
<ul style="list-style-type: none"> <li>- Designated site and therefore district plan rules are not applicable. An outline plan of works will need to be submitted to council.</li> <li>- Isolated site and located on a landfill and so effects associated with noise, dust and odour would most likely not cause adverse effects.</li> <li>- Sorted waste that cannot be processed at the C&amp;D facility can be easily transported to landfill.</li> <li>- C&amp;D waste can easily be redirected to the C&amp;D facility from landfill.</li> </ul>	<ul style="list-style-type: none"> <li>- The identified area of land is under 2 hectares and would not be able to be used as a full functioning C&amp;D facility, however could be used as a satellite processing facility or for stockpiling/sorting.</li> <li>- The site is an active landfill and so capped areas are subject to subsidence and landfill gas.</li> <li>- Access would need to be upgraded to accommodate heavy vehicles.</li> <li>- Site is also earmarked for an upgraded Waste Transfer Station and so there are competing interests.</li> </ul>

## 4. Conclusion

The site selection process has identified opportunities and constraints within the study area and in more detail across 9(2)(b)(i) sites. Overall, the most favourable site for the establishment of a C&D waste processing facility would be 9(2)(b)(ii) given that the site is vacant, is of an appropriate size, zoning and acceptable access. Whilst resource consents would need to be obtained for the site, it is considered that this should be a relatively straight forward process given the zoning and lack of sensitive features.

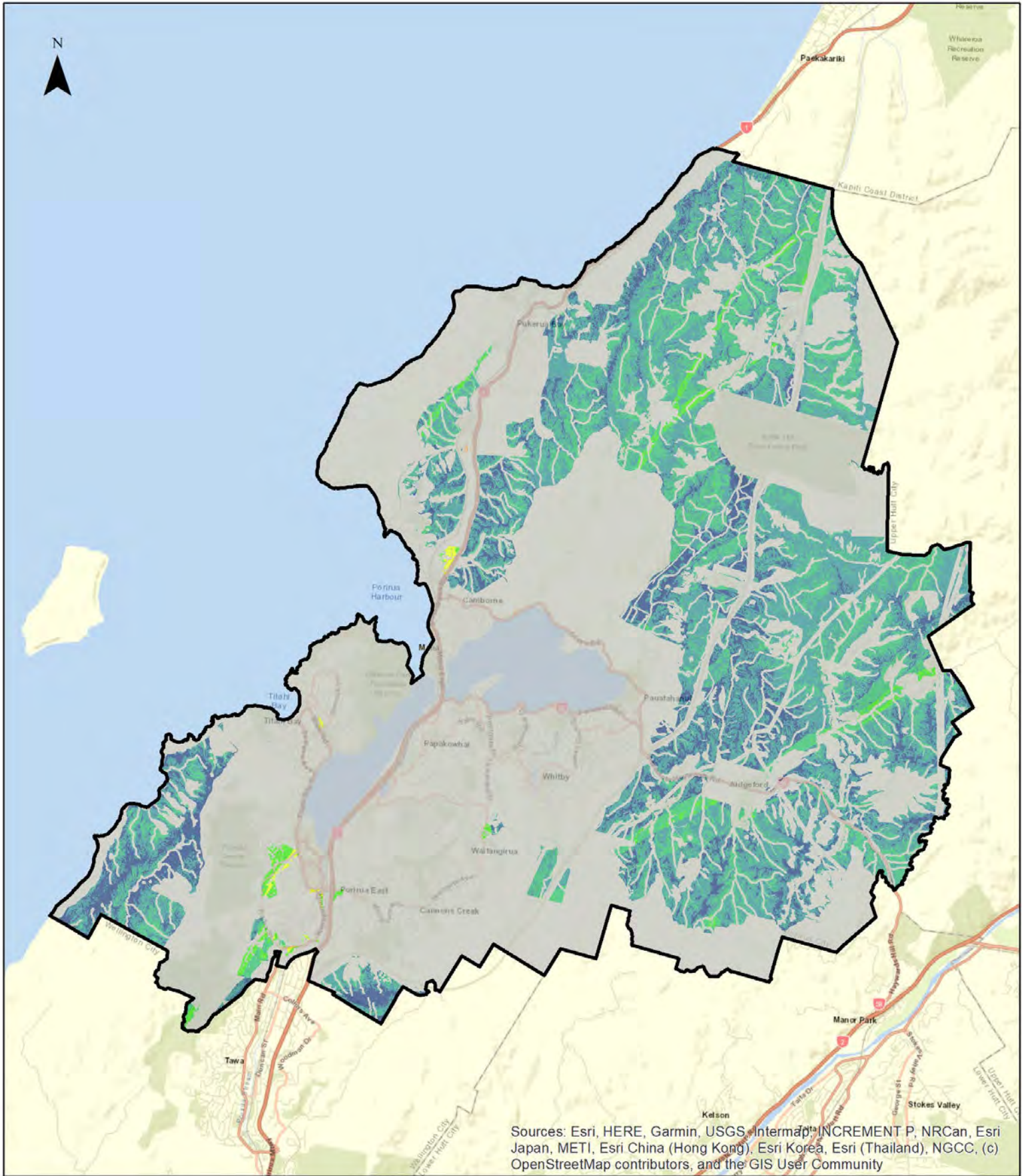
9(2)(b)(ii) and the 9(2)(b)(ii) would be appropriate to act as 'satellite sites' which could feed to a larger, main site given the constrained size of available areas and competing landuses.

A more in-depth assessment of Spicer Landfill is provided in Report 7 and is based on the proposed concept design.

Site location will need to be considered in conjunction with the other suite of reports including monetary feasibility.

# Appendix A

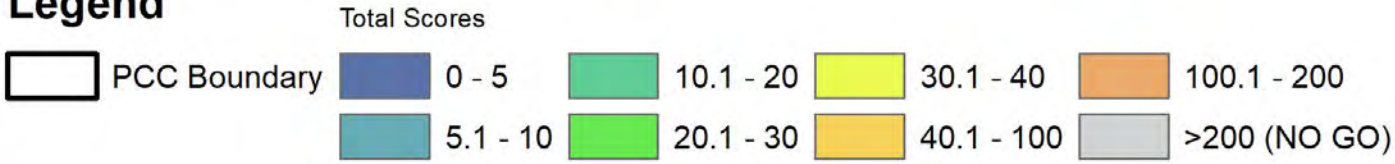
## Heat Maps



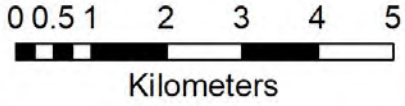
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

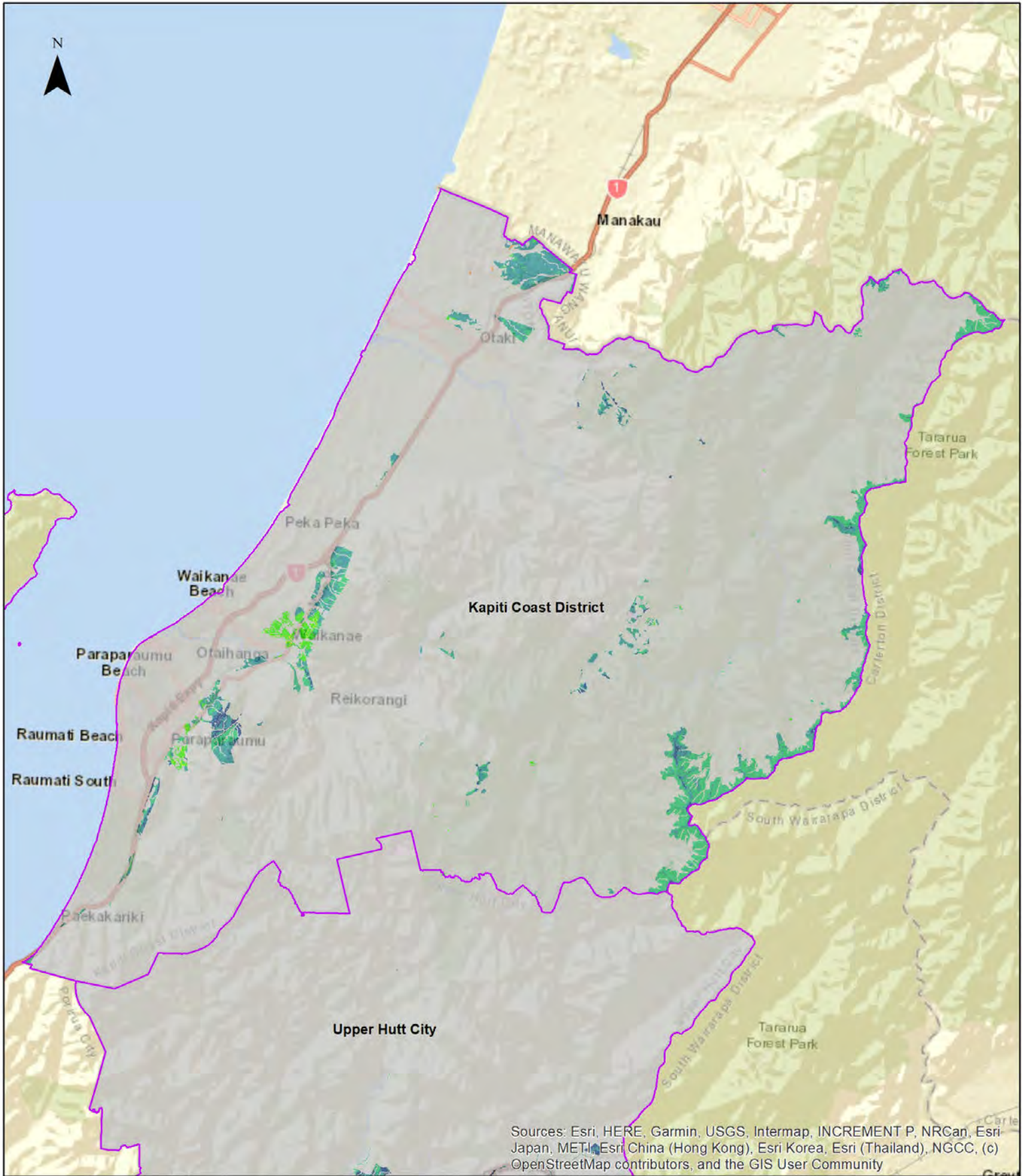
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### Legend

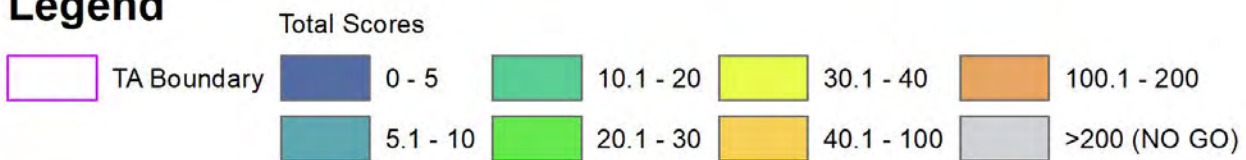


NOTE:  
Lower score, less constraints



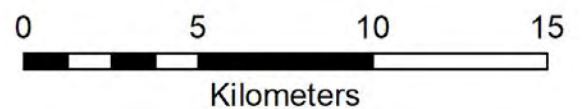


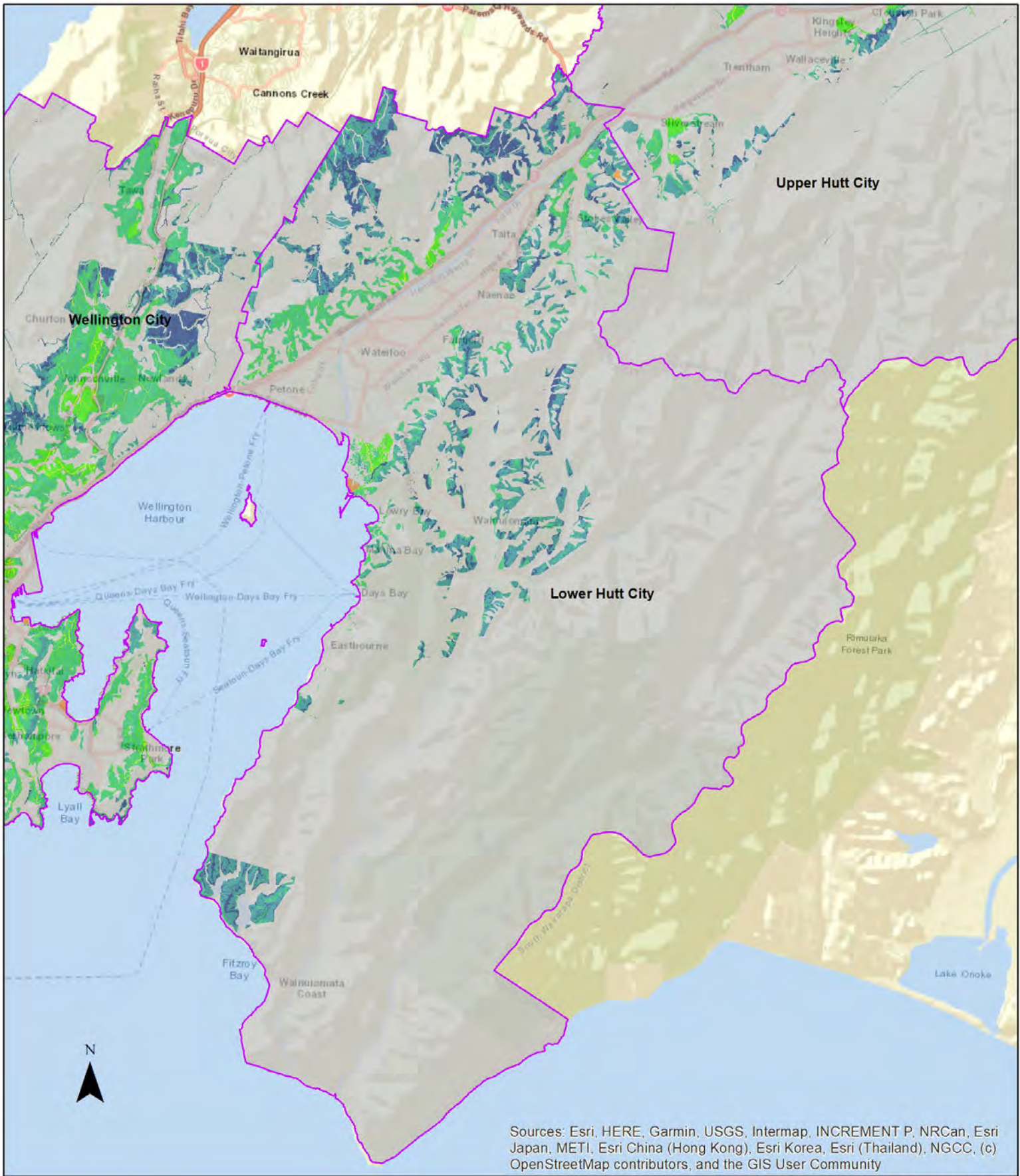
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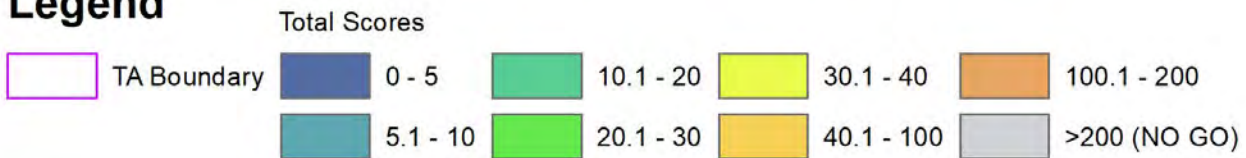
NOTE:  
Lower score, less constraints

Property size constraint is not included on this map



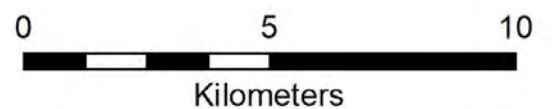


## Legend



**NOTE:**  
Lower score, less constraints

Property size constraint is not included on this map



# Appendix B

## **Certificates of Title**

9(2)(b)(ii)

9(2)(b)(ii)

9(2)(b)(ii)

9(2)(b)(ii)

9(2)(b)(ii)

9(2)(b)(ii)

9(2)(b)(ii)

9(2)(b)(ii)

# Appendix C

## District Plan Map Legends

## DISTRICT PLAN LEGEND



### Planning Zones

-  City Centre Zone
-  Industrial Zone
-  Suburban Zone
-  Rural Zone
-  Recreation Zone
-  Open Spaces Zone
-  Judgeford Hills Zone
-  Aotea Supermarket Zone






### Planning Features

-  Designation
-  Ecosites
-  Suburban Shopping Centre Policy Area
-  Commercial Recreation Policy Area
-  Aotea Mixed Use Policy Area
-  Medium Density Residential
-  Landscape Protection
-  Whitby Land Protection Area
-  Central Ridge
-  District Boundary
-  Historic Heritage Buildings and Sites

### Hazards

-  Flood Hazard
-  Seismic Hazard

### Regionally Significant Network Utilities



-  110kv Electricity Lines (National Grid)
-  220kv Electricity Lines (National Grid)
-  Railway Line
-  Greater Wellington Mains
-  Gas Pipeline Corridor

# Proposed Porirua District Plan

## Legend

### Zone

#### ZONE

-  General Residential Zone
-  Medium Density Residential Zone
-  Rural Lifestyle Zone
-  General Rural Zone
-  Settlement Zone
-  Neighbourhood Centre Zone
-  Local Centre Zone
-  Large Format Retail Zone
-  Mixed Use Zone
-  City Centre Zone
-  General Industrial Zone
-  Open Space Zone
-  Sport and Active Recreation Zone
-  Special Purpose Zone (BRANZ)
-  Future Urban Zone
-  Hospital Zone
-  Māori Purpose Zone (Hongoeka)



## LEGEND

### ZONES

#### Living Zones

-  Residential
-  Beach Residential
-  Ngarara
-  Waikanae North Development

#### Working Zones

-  Airport
-  Town Centre
-  District Centre
-  Civic and Community
-  Industrial/Service
-  Local Centre
-  Outer Business Centre


#### Rural Zones

-  Rural Dunes
-  Rural Plains
-  Rural Hills
-  Rural Residential
-  Rural Eco Hamlet Zone
-  Future Urban Development

#### Open Spaces

-  Open Space (Conservation & Scenic)
-  Open Space (Recreation)
-  Open Space (Local Parks)






#### Other

-  Private Recreation and Leisure
-  River Corridor

### PRECINCTS

-  General Precincts
-  Focussed Infill
-  Medium Density Housing
-  Low Density Housing
-  Paraparaumu Beach Golf Course Dev. Precinct
-  District Centre Zone Structure Plan Area
-  District Centre Zone Structure Plan Precincts
-  Ihakara St East Precinct
-  Ihakara St West Precinct
-  Water Collection Area


#### Airport Precincts

-  Airport Curtilage
-  Airport Core
-  Airport Mixed Use
-  Airport Heritage
-  Airport Buffer

#### General Precincts (G.P.):

1. Pekawu
2. Peka Peka North Rural Residential
3. Ferndale
4. Meadows
5. Ngarara
6. Waikanae Golf Residential
7. The Drive Extension

























### MISCELLANEOUS

-  North Island Main Trunk Railway



**Hutt City District Plan Note: You may need to zoom in to see all of the data**

Activity Areas

-  Avalon Business
-  Central Commercial
-  Community Health
-  Community Iwi
-  Extraction
-  General Business
-  General Recreation
-  General Residential
-  General Rural
-  Hill Residential
-  Historic Residential
-  Landscape Protection
-  Medium Density Residential
-  Passive Recreation
-  Petone Commercial - Area 1
-  Petone Commercial - Area 2
-  River Recreation
-  Rural Residential
-  Special Business
-  Special Commercial
-  Special Recreation
-  Special Residential
-  Suburban Commercial
-  Suburban Mixed Use

State Highway and Railway Corridor Buffer Overlays



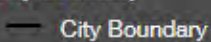
National Grid Yard



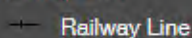
National Grid Corridor LINE



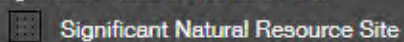
City Boundary



Railway Line



Significant Natural Resource Site



Road



# Appendix D

## **Travel Analysis**

9(2)(b)(ii)



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→ **The Power of Commitment**