

## **PORIRUA CITY RESIDUAL WASTE MANAGEMENT ALTERNATIVES ASSESSMENT – SUMMARY**

**Full report prepared for Porirua City Council by Tonkin + Taylor Pty Ltd  
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### **Introduction**

Spicer Landfill is a regionally significant Porirua City Council asset which provides residual waste disposal and recycling services to Porirua City, the Wellington region, and some areas beyond.

In undertaking this assessment, we have gone beyond simply testing the future of Spicer Landfill itself and asked the question “what is the best way forward for management of residual waste for Porirua City”.

Spicer Landfill is just one part of the waste management and minimisation system in Porirua City. The entire system enables the Porirua community to reduce and recycle unwanted materials (waste) where possible while providing for the safe disposal of residual waste. The focus of the Residual Waste Management Alternatives Assessment was on addressing the safe management of residual waste after all opportunities to reduce, recycle or recover waste have been exhausted.

### **Alternatives assessment process**

The following process was used to complete this assessment of options for managing residual waste for Porirua City:

1. Current situation – a summary of the current policy framework and approach to residual waste management in Porirua City.
2. Identification of potential technology approaches – an overview of potential technology approaches that could be used to manage residual waste.
3. Multi-criteria analysis of technology approaches – an evaluation of the viability of each of the potential technology approaches to manage residual waste.
4. Siting of technology approaches – consideration of potential locations within Porirua City for the siting and establishment of the potential technology approaches.
5. Detailed description of most viable options – evaluation of the three most viable options for managing residual waste in Porirua City, determined via a combination of potential technology approach and siting considerations.
6. Multi-criteria analysis of most viable options – assessment of the three most viable options, including sensitivity analysis (whereby weightings of criteria for gate rate and objective for environment were adjusted) and considering iwi feedback relating to location.
7. Conclusion and next steps – recommendations for next steps for the Council.

### **Background**

Spicer Landfill provides waste disposal and recycling services to Porirua City, the Wellington region, and some areas beyond. It operates under four regional consents which are due to expire on 30 June 2030. Porirua City Council (the Council) needs to either obtain new resource consents to develop and operate the landfill beyond 2030 or implement a suitable alternative for managing residual waste.

As such, the Council engaged Tonkin + Taylor Ltd (T+T) to undertake a high-level review of alternative approaches and options for managing residual waste to demonstrate whether developing Spicer Landfill is the most appropriate option.

## Objectives and criteria

A critical starting point for this assessment was defining clear objectives to help inform the Council's decision-making process. These objectives stated that the preferred option should:

1. Ensure that Porirua City residents and businesses have ongoing access to appropriate residual waste services.
2. Deliver an affordable and cost effective/competitive residual waste service for Porirua City residents and businesses.
3. Manage any environmental impacts and minimise emissions associated with residual waste services.

Criteria were developed for each objective and used in a multi-criteria analysis (MCA) framework to assess six technology approaches. These technology approaches were:

- conventional incineration,
- advanced thermal treatment (gasification),
- advanced thermal treatment (pyrolysis),
- mechanical biological treatment (MBT),
- mechanical heat treatment (MHT), and
- engineered landfill.

## Evaluating the different approaches

Evaluating the technology approaches was completed in three stages:

1. The T+T team completed a preliminary analysis, noting key evidence and proposing a preliminary score for each technology approach.
2. Discussion involving T+T and the Council's Waste Projects team on the preliminary scoring, to come to a consensus on the scoring.
3. Discussions involving Te Rūnanga O Toa Rangatira (Te Rūnanga), the Council's Waste Projects team and T+T to finalise scoring of each of the technology approaches.

To assess the viability of these technology approaches for the Council, several site selection parameters were identified, followed by GIS analysis and mapping to identify potentially suitable sites within Porirua City. Existing landfills outside of the Porirua City area were also considered with the assumption that a transfer station within Porirua City would be required to maintain access for residents and businesses.

T+T's GIS analysis found that there were no sites within Porirua City of the appropriate size for a new engineered landfill development. This meant the engineered landfill approach only left the options of expanding Spicer Landfill or exporting waste outside of Porirua.

The analysis also concluded that there were not any general industrial zoned locations suitable for an MBT facility due to size and/or surrounding land use. It may be possible however to place an MBT facility in general rural zoned land, although this would require acquiring several land parcels.

## Three options identified

Considering this analysis, three options (combining an approach and location) were defined for consideration in a second MCA assessment. These options were:

1. A new consent for the development of Spicer Landfill.
2. Export of waste to a landfill outside Porirua City.
3. MBT within Porirua City with access to landfill.

Following the definition and consensus on these three options, Te Rūnanga was consulted to help define parameters for cultural considerations to inform the assessment of the options alongside the results of the technology approaches analysis and location information.

The options were initially assessed with even weightings across the three objectives. The assessment of the three options, with even weightings across the three objectives resulted in expansion of Spicer Landfill scoring highest (2.32 out of a possible 3), then export of waste to a landfill outside Porirua City (2.2 out of a possible 3) and finally, MBT within Porirua City with access to a landfill for disposal of residual material scoring lowest (1.75 out of a possible 3).

Given the closeness of scores, a sensitivity analysis was undertaken with the Council to re-examine the viability of these options. The sensitivity analysis covered four scenarios as follows:

1. Double the weighting for objective 3 (environment), with the rest of the criteria weighted equally.
2. Treble the weighting for objective 3 (environment), with the rest of the criteria weighted equally.
3. Zero weighting for the criteria relating to gate rate (within the cost criteria), with the rest of the criteria weighted equally.
4. Abandoning the development of Spicer Landfill considered as an option.

Results of the sensitivity analysis are displayed below.

#### **MCA scores and sensitivity analysis for the three options defined for consideration**

<b>Option name</b>	<b>MCA Score</b>	<b>Sensitivity – double for objective 3</b>	<b>Sensitivity – treble for objective 3</b>	<b>Sensitivity – remove gate rate</b>	<b>Sensitivity – Spicer not re-consented</b>
New consent for Spicer Landfill	2.32	2.18	2.09	2.10	2.03
Export of waste to a landfill outside Porirua City	2.20	2.15	2.12	2.40	2.20
MBT within Porirua City with access to a landfill	1.85	1.95	2.01	2.00	1.85

#### **Preferred approach and next steps**

Based on both the MCA of technology approaches and of the three options, a preferred, two-phased approach was identified:

1. Phase 1 – management of waste from now until 2035: Re-consent Spicer Landfill to 2035.
2. Phase 2 – planning for beyond 2035: Scope regional solutions with neighbouring councils, as outlined in the recently adopted Regional Waste Management and Minimisation Plan.

This two-phased approach acknowledges that while an extension of consent for Spicer Landfill is the preferred option in this analysis, it is unlikely to provide a long-term solution. In light of this, providing for residual waste disposal for Porirua residents will be planned for and managed by the Council in the short-term. Any medium to long-term solution will likely be regional in nature.

To implement this two-phased approach, the Council will need to plan for a future programme of work that allows for phase 2 to be pursued while phase 1 is delivered.

The next step for the Council will be to decide on the way forward in accordance with legislative requirements and in alignment to their Waste Minimisation and Management Plan.

#### **Want to know more?**

You can view the full report on our website <https://porirua.govt.nz/spicer-development/>