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Levin Landfill and Horowhenua waste disposal

Wellbeing case

Here-turi-kōkā 2021

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Executive summary

The wellbeing case expands the traditional economic assessment to include the additional three aspects of community wellbeing; cultural, social and environmental. Wellbeing is about people and creating conditions for everyone to thrive across multiple generations.

Waste disposal is a difficult issue for most local authorities. Although we all create waste of some sort, no one wants to live near a landfill. At the same time, waste needs to be disposed of in a way that does not adversely affect the environment.

The Levin Landfill (the Landfill) has operated for nearly 50 years and is the primary landfill in the Horowhenua District (the District), taking thousands of tonnes of waste every year. Horowhenua District Council (HDC) currently uses it to dispose of its domestic waste, general waste, and dewatered sludge from the wastewater and water supply treatment plants. The Landfill also accepts non-council-controlled waste.

The Landfill is currently operated under contract which expires in 2022. Once the Landfill is closed, the community's solid waste will need to be disposed of elsewhere at an alternative facility.

HDC's key objective is to achieve an optimised solid waste disposal solution that provides best value for the Horowhenua community in the short term, aligns with HDC's Waste Management and Minimisation Plan, and is economically and environmentally sustainable in the longer term.

The current contract to operate the Landfill is due to expire, and because the operator has not expressed interest in continuing to operate the Landfill on the same basis as its current arrangements, there is no status quo option available. Consequently, three options are being considered and are assessed in this wellbeing case:

- Option 1: Close the Levin Landfill in 2022 and send waste to an alternative class one landfill until 2037
- Option 2: Continue to operate the Levin Landfill with a new operator until December 2025, then send waste to an alternative class one landfill from 2025 to 2037
- Option 3: Continue to operate the Levin Landfill with a new operator until 2037.

The wellbeing case assesses the options in the context of how they contribute to, or detract from, the social, economic, environmental and cultural wellbeing of the Horowhenua District and, more specifically, the area surrounding the Landfill. This is achieved by completing a wellbeing multi-criteria analysis (MCA) for each option. Each of the four wellbeings has been assigned a 25 percent weighting, implying that each wellbeing is equally important.

As the table below shows, the option that scores the highest, and therefore makes the greatest contribution to wellbeing/minimises the negative impacts on wellbeing, is Option 1, followed by Option 2, then Option 3.

Total HDC waste disposal wellbeing scores

	Option 1	Option 2	Option 3
Social wellbeing	110	85	43.5
Economic wellbeing	76	43.5	76
Environmental wellbeing	113	96	71
Cultural wellbeing	85	57	19
Total wellbeing score	**384**	**281.5**	**209.5**

Horowhenua District future of waste disposal wellbeing framework

The wellbeing case uses a wellbeing framework to evaluate the three options. Under each of the wellbeings are outcomes HDC and the community seek from the future of the Levin Landfill and Horowhenua's waste disposal.

The framework, outcomes and weightings were designed and determined using information obtained from HDC councillors and staff, HDC strategic documents, previous Landfill impact reports and the findings from stakeholder engagement with selected members of the community likely to be impacted by HDC's decision.

The framework assigns 25 percent weightings to each of the four wellbeings. The outcomes under each wellbeing are then given a unique weighting as a proportion of the 25 percent. Each outcome is scored between one and five. The weightings of each outcome are then multiplied by the scores to reach a total score from a possible 500.

HDC waste disposal outcomes, wellbeings and total wellbeing scores

Outcomes	Weight	Option 1	Option 2	Option 3
Waste disposal supports healthy lifestyles	8.5	4	3	2
Waste disposal creates a safe and supportive environment	10	5	4	2
Waste disposal supports inclusive and connected communities	6.5	4	3	1
Social wellbeing total	**25**	**110**	**85**	**43.5**
Waste disposal creates and supports jobs and contributes to GDP in the Horowhenua District	5	1	2	5
Waste disposal is affordable for businesses and residents	11	4	1	3
Waste disposal meets the future needs of the District, including population and business growth	4.5	3	3	3
Horowhenua promotes waste reduction, recycling, energy conservation and efficiency	4.5	3	2	1
Economic wellbeing total	**25**	**76**	**43.5**	**76**
Waste disposal meets best practice for environmental management of landfills	12	4	3	2
Waste disposal does not further degrade Horowhenua's rivers, lakes and waterways	8	5	5	4
Waste disposal will not compromise a sustainable environment	5	5	4	3
Environmental wellbeing total	**25**	**113**	**96**	**71**
Horowhenua supports cultural and traditional activities in the area surrounding the current landfill	10	4	3	1
Waste disposal supports the development and capacity building of local Marae, hapū and iwi	6	0	0	0
The landfill decision builds and enhances the relationship between HDC and tangata whenua	9	5	3	1
Cultural wellbeing total	**25**	**85**	**57**	**19**
Total wellbeing score (out of 500)	**100**	**384**	**281.5**	**209.5**

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1 Introduction

The wellbeing case expands the traditional economic assessment to include the additional three aspects of community wellbeing; social, environmental and cultural.

1.1 Background

Waste disposal is a difficult issue for most local authorities. Although we all create waste, no one wants to live near a landfill. At the same time, waste needs to be disposed of in a way that does not adversely affect the environment. Horowhenua District Council (HDC) and the community are working on the challenges managing odour and historic leachate, improving water quality and addressing downstream discharges caused by the old dump at the Levin Landfill (the Landfill) site, while actively planning for a future that sees the Landfill closed. This is all occurring in an environment where waste minimisation is encouraged but waste volumes are increasing as the population grows.

The Landfill is located close to the coast, southwest of Levin, near Hōkio Beach, and has operated for nearly 50 years, with improvements in landfilling practise as new technology and regulation has come to the fore over recent decades.

The Landfill currently is the primary landfill in the Horowhenua District (the District), taking thousands of tonnes of waste every year. HDC currently use it to dispose of the District's domestic waste, general waste, and dewatered sludge from the wastewater and water supply treatment plants. The Landfill also accepts non-council-controlled waste.

Following a sometimes vexed process, including independent hearings and Court action by the community and iwi stakeholders, a land-mark Landfill Agreement[1] was reached. Parties agreed to find common ground in the operation of the Landfill and investigations for early closure of the site. The agreement requires that "HDC's chief executive will recommend to HDC a closure date for the Landfill of, at the latest, 31 December 2025." The final closure date remains a matter for Councillors to determine. However, if a date beyond 31 December 2025 is chosen, the Landfill Agreement will expire.

The Landfill is currently operated under contract, with a current contract expiry date of no earlier than 1 April 2022. The Landfill has consents extending through to 2037, with five yearly reviews. However, it must be closed earlier, if full.

To continue to operate the Landfill, new cells are required as each previous one nears capacity. The Landfill cells are almost full. If the Landfill is to remain open beyond 2022, new cells will need to be constructed.

The current operations contractor owns and operates a Transfer Station at Sheffield Street, Levin. Under the existing Landfill operations contract, it also provides a resource recovery facility (recycling station) on the site. HDC owns two waste transfer stations in the District – one at Harbour Street, Foxton and another at Thompson Street, Shannon. These are separately operated under HDC's collections contract.

[1] Horowhenua District Council, Hōkio Kaitiaki Environmental Alliance Incorporated, Horowhenua District Ratepayers and Residents Association Incorporated, s274 Parties (2019). *Agreement in relation to the Levin Landfill.*

With the 1 April 2022 contract expiry date approaching, HDC needs to decide on the future of the Landfill and HDC's ongoing disposal of waste. Once the Landfill is closed the community's solid waste will need to be disposed of elsewhere at an alternative facility.

HDC's key objective is to achieve an optimised solid waste disposal solution that provides best value for the Horowhenua community in the short term, and which aligns with its community's social, economic, environmental and cultural wellbeing's, HDC's Waste Management and Minimisation Plan, and is economically and environmentally sustainable in the longer term.

There are three options to be assessed:

- Option 1: Close the Levin Landfill in 2022 and send waste to an alternative class one landfill[2] until 2037
- Option 2: Continue to operate the Levin Landfill with a new operator until December 2025, then send waste to an alternative class one landfill from 2025 to 2037
- Option 3: Continue to operate the Levin Landfill with a new operator until 2037.

Because the current contract is due to expire, and the current operator has not expressed interest in continuing to operate the Landfill on the same basis as its current arrangements there is no status quo option available. The closest equivalent of the status quo is Option 3.

Table 1.1 Horowhenua District waste disposal options

	Option 1: close Landfill in 2022	Option 2: close Landfill in 2025	Option 3: close Landfill in 2037
Disposal location	Alternative class one landfill	Levin Landfill (to 31 December 2025) Alternative class one landfill (2026 onwards)	Levin Landfill
New cells required at the Levin Landfill if only HDC waste is accepted	N/A	Yes	Yes
Additional cells required at the Levin Landfill if accepting commercial waste	N/A	Yes	Yes
New weighbridge required at the Levin Landfill	No	Yes	Yes
Results in termination of Landfill Agreement	No	No	Yes
HDC general waste transport to landfill by	Contractor from Levin Transfer Station	Council (until 2025), Contractor (after 2025)	Council will take direct to the Landfill
HDC sludge transport to landfill by	Council	Council	Council
The Levin Landfill accepting commercial waste	No	Yes until 2025 – but only direct to Landfill from commercial customers	Yes – but only direct to Landfill from commercial customers

[2] A Class one landfill is a site that accepts municipal solid waste. Class one landfills generally also accept construction and demolition waste, some industrial wastes and contaminated soils.

1.2 The wellbeing case approach

Wellbeing is about people and creating conditions for everyone to thrive across multiple generations. To ensure the decision on the future of the Landfill and waste disposal in the District meets the requirements of the Local Government Act 2002, HDC is committed to applying a wellbeing approach in its activities and decision making. This includes using the approach alongside conventional tools such as financial appraisal and cost benefit analysis.

The wellbeing case assesses the options for the Landfill and waste disposal, in the context of how they contribute to, or detract from, the economic, social, cultural and environmental wellbeing of the Horowhenua District and, more specifically, the area surrounding the Landfill. This is achieved by completing a wellbeing multi-criteria analysis (MCA) for each option.

MCA is an important tool used to evaluate different options to improve decision-making. MCA evaluates options against a set of criteria. Applying MCA involves identifying the underlying objectives and then determining the factors that would indicate achievement of objectives. The criteria are weighted in terms of their relevant importance to determine what the ranking should be. Options are then identified and scored against the individual criterion.

The MCA provides information to decision-makers by assessing options against criteria that, if met, would indicate achievement.

1.2.1 Why a wellbeing case?

A wellbeing case is prepared to present the broader longer-term impacts of options, or a decision choice, which are not captured by the strategic, management, commercial, and financial cases. Whereas the other cases focus on coherence with strategic direction, and implementation and funding feasibility of options, a wellbeing case focuses on the outcomes for individuals and communities across a range of dimensions.

The Local Government (Community Well-being) Amendment Act 2019 brought the four aspects of community wellbeing; cultural, social, environmental and economic, back into the Local Government Act 2002. The Local Government Act 2002 states the purpose of local government is "to enable democratic local decision-making and action by, and on behalf of, communities; and (b) to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future."

A wellbeing case is critical if outcomes beyond strategic direction and financial or commercial success/failure criteria are to be captured in decisions between options. This wellbeing case takes the place of the narrower economic case that features in conventional detailed business cases.

1.2.2 Measurement of wellbeing

Wellbeing itself does not have to be a number and, indeed, need not be measured directly. A qualitative or descriptive explanation or statement is required. This statement is likely to encapsulate a range of desirable outcomes. Options, choices, or decisions can be assessed against their respective impact(s) on such desired outcomes.

1.3 How HDC waste disposal will affect wellbeing

To support improved social wellbeing, Horowhenua seeks a waste disposal solution that supports healthy lifestyles and minimises health problems for the community, including minimising the

District's pollution and instances of unsafe water. As well as protecting the physical wellbeing of residents, mental wellbeing will be improved by a solution that rebuilds trust between the community and HDC, provides transparency, honours existing commitments and promotes development of the communities surrounding the Landfill.

To promote economic wellbeing, Horowhenua's waste disposal solution will support employment opportunities and positively impact GDP by keeping waste disposal affordable for businesses and residents. With waste disposal expected to become more expensive, with increases to the waste levy and the emissions trading scheme (ETS), Horowhenua's waste disposal solution will provide opportunities for waste reduction and recycling by encouraging the community to reduce waste and promote resource recovery.

The waste disposal solution will provide for the future needs of the District and should be sustainable long-term, to ensure Horowhenua has a safe and secure place to dispose of its waste, while providing certainty for residents and businesses.

Key to promoting environmental wellbeing is the requirement that Horowhenua's waste disposal should not compromise a sustainable environment and should limit the risks of further degradation to Horowhenua's rivers, lakes and waterways. To do this, waste disposal will achieve high environmental management standards and meet compliance regulations. Waste disposal will also limit the contribution of Horowhenua's waste to greenhouse gas emissions.

To support and enhance cultural wellbeing, Horowhenua seeks to support cultural and traditional activities in the area surrounding the Landfill, in order to maintain and enhance the traditions with ancestral lands, waterways wāhi tapu and other taonga. This, in turn, will support the development and capacity building of local Marae, hapū and iwi. The decision on waste disposal and the future of the Landfill will also take a proactive approach to Te Tiriti o Waitangi and its principles, such as including tangata whenua as partners when HDC make decisions.

2 A Levin Landfill wellbeing framework

This wellbeing case uses a wellbeing framework to evaluate the options. The framework includes social, economic, environmental and cultural wellbeing. Related to each wellbeing are outcomes HDC and the community seek from the future of the Levin Landfill and HDC's waste disposal. Each wellbeing and outcome is given a weight and score, to enable different options to be compared and ranked.

The framework, outcomes and weightings were designed and determined based on information obtained from HDC councillors and staff, HDC strategic documents and stakeholder engagement with selected members of the community.

The framework assigns 25 percent weightings to each of the wellbeings. Within each wellbeing, the outcomes are given their own unique weights that sum to the overall wellbeing weight of 25 percent. For example within the 25 percent weighting for environmental wellbeing, the environmental outcomes have weightings of 12 percent, eight percent and five percent. The weightings of each outcome are then multiplied by the scores (zero to five) assigned when assessing the outcomes to reach a total score.

2.1 Developing the framework

To develop the framework, a baseline of expected outcomes was established from existing information setting out HDC's vision for the future of the District, including the Annual and Long Term Plans, and reports regarding the closure of the Landfill and the state of the environment. The baseline review established the high-level wellbeing outcomes HDC seeks to achieve. These documents were complemented by relevant documents produced by government agencies, stakeholders and interest groups. The findings of the review were used to develop a draft wellbeing framework which was used to inform engagement with stakeholders.

Stakeholder engagement collected qualitative and quantitative information on each of the wellbeings. The aim of the engagement was to capture a range of views to consider in decision making. Engagement covered the historic experiences with the Landfill and current concerns regarding the continued operation of the Landfill. A number of stakeholders were identified and approached. These included hapū, iwi, residents, businesses, Horizons Region Council staff and members of the Landfill Project Management Group and Neighbourhood Liaison Group.

The framework and outcomes were then refined at a workshop with HDC councillors and officials to ensure they align with short and long-term aims and objectives of HDC. Attendees were asked to allocate weightings to each of the wellbeings and the outcomes. The individual weightings were then averaged and are shown in Table 2.1. The weighting of the outcomes vary and reflect the views of stakeholders and priorities of HDC, as they relate to the Landfill and waste disposal.

Table 2.1 Horowhenua landfill wellbeing framework

Outcomes	Weight
Waste disposal supports healthy lifestyles	8.5
Waste disposal creates a safe and supportive environment	10
Waste disposal supports inclusive and connected communities	6.5
Social wellbeing total	**25**
Waste disposal creates and supports jobs and contributes to GDP in the Horowhenua District	5
Waste disposal is affordable for businesses and residents	11
Waste disposal meets the future needs of the District, including population and business growth	4.5
Horowhenua promotes waste reduction, recycling, energy conservation and efficiency	4.5
Economic wellbeing total	**25**
Waste disposal meets best practice for environmental management of landfills	12
Waste disposal does not further degrade Horowhenua's rivers, lakes and waterways	8
Waste disposal will not compromise a sustainable environment	5
Environmental wellbeing total	**25**
Horowhenua supports cultural and traditional activities in the area surrounding the current landfill	10
Waste disposal supports the development and capacity building of local Marae, hapū and iwi	6
The landfill decision builds and enhances the relationship between HDC and Tangata Whenua	9
Cultural wellbeing total	**25**
Total weighting	**100**

2.2 Using the framework

The results of the analysis were put through the MCA process using the framework. BERL conducted a wellbeing assessment of the three options and scored each outcome in the framework between zero and five. Zero represents where an option fails to address an outcome. Five represents where an option addresses an outcome in full

The scores were then multiplied by the weights for each outcome. This wellbeing case shows the assessment of the impact of each of the options and identifies the option that achieves the greatest impact on overall wellbeing.

A full description of the development of the wellbeing framework, including a summary of the findings of stakeholder engagement is included as Appendix B.

2.3 Social wellbeing in the framework

Social wellbeing involves individuals, their families, whanau, hapū, iwi, and a range of communities being able to set goals and achieve them, such as education, health, the strength of community networks, financial and personal security, equity of opportunity, and rights and freedoms.

HDC has made a strong commitment to social wellbeing. Solid waste disposal is identified in the Long Term Plan as contributing to strong communities: "reliable solid waste infrastructure and services enable strong communities through the provision of safe, accessible waste disposal options."[3]

As part of its 2021-2041 Long Term Plan, HDC has made strong communities one of the five community outcomes it seeks to achieve. The outcomes identified include:

- We value the diversity of our people
- We recognise the value of our District's heritage and its contribution to our communities' sense of identity and pride
- We take an inclusive approach and encourage our people to participate in local decision making
- We provide infrastructure and services as a foundation for resilient and connected communities
- We build collaborative relationships with service providers to help enable all of our people to live positive and healthy lifestyles
- We help create facilities and places where people of all ages and backgrounds feel included, safe and connected.

The decision on the future of the Landfill presents an opportunity to improve social wellbeing. At present the Landfill is negatively impacting the mental health of the Hōkio Beach community and has a negative impact on social wellbeing. There was community opposition to the Landfill when it was first established, and opposition has continued. Despite the Landfill being a modern landfill, local residents are unable to separate the modern landfill from the historic dump (old dump) at the Landfill site. Concerns focus mainly on leachate from the old unlined rubbish dump polluting water in the Hōkio Stream and the Tatana Drain, which ultimately flows out to sea at Hōkio Beach.

The Landfill has been a source of conflict between HDC and the community. The community around the Landfill is committed to challenge any decision that sees the Landfill remain open past the 2025 date in the Landfill Agreement.

The presence of the Landfill and the actions of various parties involved in the management and operation of the Landfill has led to a deep-seated mistrust on all sides. Multiple stakeholders highlighted a lack of trust between HDC and the community. The historic relationship between HDC and residents has disenfranchised several people. Trust is an important element of social wellbeing, and a lack of trust indicates low social wellbeing. The decision on the Landfill's future presents an opportunity to repair trust and relationships between HDC and the community.

Hōkio residents identified the Landfill as a contributor to the low socio-economic status of Hōkio. Residents see it as the dumping ground of Levin. Residents expressed the view that, if the Landfill was closed, Hōkio has the potential to develop like the coastal communities either side. This is reflected in the property values of these communities compared to Hōkio.

[3] Horowhenua District Council (2021). *Horowhenua District Council 2021-2041 Long Term Plan.* Page 86.

The Landfill is also seen as separating Hōkio from Levin. The Landfill is a mental barrier that separates the community from Levin and has had a negative impact on the reputation of Hōkio. Hōkio is often perceived as being dirty and having low socio-economic status. This has been the cycle for several years and has become self-fulfilling. Residents want to put the long running battle over the Landfill behind them and begin to look to the future.

Compared to communities north and south along the coast Hōkio feels like the poor cousin. Improving the perception of Hōkio as a place to live could attract new residents to the community and help to revitalise a community that has long felt neglected by HDC. The closure of the Landfill would remove one of the negative perceptions of Hōkio, represent a fresh start and signal a brighter future for Hōkio and the communities around the Landfill. With house prices increasing in the Wellington Region and upgrades to State Highway One reducing the time to travel south while improving safety and resilience, residents see the opportunity for Levin to grow. With the Landfill closed Hōkio residents see no reason why their community does not have the potential to develop like the coastal communities to the north and south.

Finally, the odour from the Landfill has impacted people's ability to enjoy a healthy lifestyle. On days when the wind is blowing from the Landfill towards Hōkio, Landfill odour forces residents to stay indoors, limiting enjoyment of the outdoors. Additionally, although it is unable to be directly linked to the Landfill, Hōkio residents have reported health concerns they perceive are linked to the odour.

2.3.1 Social wellbeing outcomes

Based on the preceding paragraphs, the following are the outcomes that will be used to evaluate the impact of options on social wellbeing.

Horowhenua's waste disposal supports healthy lifestyles

The waste disposal will support healthy lifestyles. Waste disposal minimises health problems for the Horowhenua community. It also minimises pollution of the local area and reduces instances of unsafe water.

Horowhenua's waste disposal creates a safe and supportive environment

Waste disposal will support the community to feel safe and supported by building trust. Waste disposal will be transparent and honour commitments. Waste disposal complies with legal agreements and compliance regulations.

Horowhenua's waste disposal supports inclusive and connected communities

Waste disposal does not entrench existing inequalities. Instead, it will enable all members of the community to be included and connected. It will uplift the Hōkio community and will support community development.

2.4 Economic wellbeing in the framework

Economic wellbeing looks at whether the economy can generate the employment and wealth necessary to provide many of the requirements that make for social wellbeing, such as health, financial security, and equity of opportunity.

In terms of economic wellbeing, jobs – both the number and the quality – feature highly. Jobs contribute to incomes of families, households, whānau, and businesses. Additionally, a location that is welcoming and affordable attracts new ventures and residents, while also enhancing the foundations for existing businesses and activities. For growth to be sustainable, it needs to be accompanied by suitable physical and community infrastructure that manages and revitalises resources accordingly.

HDC is aware of the importance of a vibrant economy and has made this one of its community outcomes in its Long Term Plan.[4] The economic outcomes HDC seeks to achieve are:

- We are business friendly
- We will work with others to enable our economy to grow
- We support diversity and resilience in our local economy
- We aspire for economic security for all of our people
- We seize growth opportunities for our District.

Another of the community outcomes is fit for purpose infrastructure. Among the infrastructure outcomes HDC is looking to achieve over the Long Term Plan period are:

- We develop and maintain facilities and infrastructure to meet the needs of current and future generations
- We provide efficient, reliable and affordable infrastructure
- We work with partners to develop infrastructure that enables growth
- Our community facilities and infrastructure are resilient, helping us to respond to climate change and natural hazards.

The decision on the future of the Landfill and waste disposal presents an opportunity for HDC to support the economic development and growth in the District.

The decision on the future of the Landfill and waste disposal has the potential to increase the cost of waste disposal for local businesses and residents. A concern of business owners is that, if the cost of waste disposal increases it will increase their operating costs. There is a risk that, if the cost of waste disposal was inconsistent with other districts or regions, businesses could look to relocate elsewhere.

With a government focus on using cost as an incentive to reduce waste, waste costs are likely to increase regardless of where waste is disposed. The increased costs of the waste levy, ETS and Resource Management Act 1991 compliance will all increase costs to dispose of waste and manage landfills. These cost increases can be mitigated by scale, gas capture efficiency and transport distance.

[4] Horowhenua District Council (2021). *Horowhenua District Council 2021-2041 Long Term Plan*. Page 5.

While an increased cost of waste has the potential to impact local businesses and residents, it could also encourage a faster move to increase sustainability and reduce waste. The potential to restructure how Horowhenua's waste is disposed of creates opportunities to innovate and promote activities that reduce waste. HDC owning and operating a landfill that is run at a profit and requires a minimum annual tonnage is inconsistent with waste reduction efforts.

The predictions for growth of Levin are expected to place pressure on existing infrastructure. Residents have raised concerns of the capacity of the Landfill, and the expansion required to keep it operating. This is likely to be offset by a per capita reduction in waste to landfill.

During stakeholder engagement, residents, businesses and participants in the waste disposal market raised concerns as to the cost effectiveness of maintaining the Landfill to meet future environmental regulations and resource consent conditions.

2.4.1 Economic wellbeing outcomes

Based on the preceding paragraphs, the following are the outcomes that will be used to evaluate the impact of options on economic wellbeing.

Waste disposal creates and supports jobs and contributes to GDP in the Horowhenua District

Horowhenua's waste disposal system will create new employment opportunities for the community and positively impact GDP. Waste disposal contributes to the local economy.

Waste disposal is affordable for businesses and residents

Waste disposable is affordable and does not limit economic development in the District. Waste disposal costs limit incidents of fly tipping.

Horowhenua's waste disposal meets the future needs of the District, including population and business growth

Waste disposal will provide for the future needs of the District. It will be sustainable long-term.

Horowhenua promotes waste reduction, recycling, energy conservation and efficiency

Horowhenua's waste disposal will provide opportunities for waste reduction and recycling. It will encourage the community to reduce waste and will promote resource recovery.

2.5 Environmental wellbeing in the framework

Environmental wellbeing considers whether the natural environment can sustainably support the activities that constitute healthy community life, such as air quality, fresh water, uncontaminated land, and control of pollution.

HDC has had a long-term focus on improving environmental wellbeing across the District. The 2021-2041 Long Term Plan continues to highlight HDC's commitment to maintaining an outstanding environment. The outcomes HDC seeks to achieve for an outstanding environment include:

- We contribute to improving our natural environment for current and future generations to enjoy
- We protect the important natural features in our District
- We ensure our built environment supports the wellbeing of our people
- We manage competing pressures on resources sustainably.

In addition to the environmental outcomes, HDC is committed to supporting Mana Whenua to maintain and enhance tikanga with their ancestral lands and waterways, wahi tapu and other Taonga.

The decision on the future of the Landfill and HDC's waste disposal presents an opportunity to deliver on the commitment to improve the natural environment for current and future generations. The Landfill's location and poor gas capture is seen as inconsistent with HDC's environmental ambitions.

The environmental impacts of the historic unlined dump is the major source of the community concern with the Landfill site. Closing the Landfill will not solve the historic issues linked to the site, but it would reduce the potential for future issues occurring, no matter how small the risk. Although the Landfill is lined and meets modern standards for waste disposal, the impact of the Landfill site is seen as a combined issue, the old dump and the modern landfill.

The historic dump has resulted in environmental degradation in the surrounding area, including soils, waterways, wildlife and the ocean. The old dump has an issue with leachate which has polluted the water in the Hōkio stream and Tatana Drain, causing damage to habitats that once supported vibrant fish and eel stocks.

Although there is no evidence that the modern landfill is contributing further leachate, stakeholders fear history repeating. Despite the Landfill meeting current standards and using modern technology, there are concerns that, like the old dump, these may be found to be insufficient environmental protections in the long-term. This would be devastating to the local environment. The ocean is the food bowl for residents and has been for many years.

Odour is a major concern for residents. Although there have been limited official recordings of odour concerns, residents report regular instances of odour from the Landfill. Landfill odours prevent residents from enjoying the natural environment around the site and residents report negative impacts on health.

The Landfill has been found in breach of resource consent conditions on numerous occasions[5], the siting is undesirable[6] and it has inferior gas capture compared to nearby class one landfills.

[5] Horizons Regional Council (2018). *Annual compliance audit report Levin Landfill.* 21 August 2018.
Horizons Regional Council (2020). *Annual compliance audit report Levin Landfill.* 27 July 2020.
Horizons Region Council (2021). *Annual compliance audit report. Levin Landfill.* 8 June 2021.
[6] Waste Management Institute New Zealand (2018). *Technical Guidelines for Disposal to Land.* Page 52.

The 2021 Annual compliance audit report found failure to undertake any methane surface monitoring resulted in a significant non-compliance. Low risk non-compliance assessments were given for providing insufficient information. Several non-compliances were assessed relating to failure to undertake monitoring requirements or provide data.[7]

Low risk non-compliances with resource consents were also given as a result of failure to remediate the capping on the old dump, implement the updated monitoring programme expeditiously, and appropriately report on the significance of all exceedances in the monitoring program.

Residents would like to see waste disposed of at a facility that has high environmental protection standards and is current best practice for landfills, including location and ongoing management as set out in the Waste Management Institute New Zealand (WasteMINZ) Technical Guidelines for Disposal to Land.[8] Examples of current best practice include a location on clay soil, and minimising greenhouse gas emissions, through gas control.

The Climate Change Commission has identified that well run modern landfills can reduce emissions. The current site does not provide adequate cover for gases escaping from the Landfill.

The size of the Landfill and the projected volume of waste available to the operator will make it difficult for the Landfill to invest in good gas capture and other initiatives that would improve the environmental impacts of the Landfill.

2.5.1 Environmental wellbeing outcomes

Based on the preceding paragraphs, the following are the outcomes that will be used to evaluate the impact of options on environmental wellbeing.

Horowhenua's waste disposal meets best practice for environmental management of landfills

Waste disposal achieves high environmental management standards for landfills. It will meet all compliance regulations as well as any legal agreements.

The disposal of Horowhenua's waste does not further degrade Horowhenua's rivers, lakes and waterways

Waste disposal minimises negative environmental impacts. It will not degrade rivers, lakes and waterways. Instead, the Landfill will manage its waste disposal in a way that promotes and enhances Horowhenua's natural and built environment for current and future generations.

Horowhenua's waste disposal will not compromise a sustainable environment

Waste disposal will support sustainable endeavours. It will enable environmental initiatives and help the community protect natural resources. Waste disposal will limit the contribution of Horowhenua's waste to greenhouse gas emissions.

[7] Horizons Region Council (2021). *Annual compliance audit report. Levin Landfill.* 8 June 2021.
[8] Waste Management Institute New Zealand (2018). *Technical Guidelines for Disposal to Land.*

2.6 Cultural wellbeing in the framework

Cultural wellbeing looks at the shared beliefs, values, customs, behaviours and identities reflected through language, stories, visual and performing arts, ceremonies and heritage that make up our communities.

Cultural wellbeing is alluded to in two of the five community outcomes in HDC's 2021-2041 Long Term Plan. To achieve strong communities, HDC is seeking to achieve the following outcomes that impact cultural wellbeing:

- We value the diversity of our people
- We recognise the value of our District's heritage and its contribution to our communities' sense of identity and pride
- We take an inclusive approach and encourage our people to participate in local decision making.

HDC has also made a commitment to partnership with tangata whenua. The outcomes HDC seeks to achieve through growing its partnership with tangata whenua are:

- We will uphold Te Tiriti o Waitangi and its principles
- We build mutually respectful partnerships with tangata whenua
- We support Mana Whenua to maintain and enhance tikanga with their ancestral lands and waterways, wahi tapu and other Taonga
- We support whanau, hapū and iwi in achieving their aspirations
- We recognise the role of mana whenua as Kaitiaki of their rohe.

The decision on the future of the Landfill and waste disposal presents an opportunity to address the concerns the community and tangata whenua have had since the original dump was proposed, and to deliver cultural outcomes that positively impact community wellbeing.

Local hapū have called the area home since the early 19th century. Iwi's objections to waste disposal at the Landfill site date back to the original dump's establishment in 1975. When the old dump was proposed those affected by the establishment were unable to make objections. The old dump was intended to have a life span of 20 years. When it closed, the current modern landfill was opened adjacent to it.

The issues surrounding the Landfill site have consumed the attention of eight generations of hapū who have seen the natural environment significantly deteriorate as the result of human activities, including the Landfill. The deterioration of the environment, and particularly the Hōkio Stream, has had a significant negative impact on cultural wellbeing. The discharge of contaminants into air, onto or into land at the Landfill is seen as a breach of tikanga and cultural protocols related to the use, development and protection of land air and water.

Local hapū seek an immediate closure of the Landfill and restoration of the Landfill site including surrounding wetlands and whenua. The pollution of the Hōkio stream and the subsequent run off out to sea have had a negative impact on the cultural wellbeing of local iwi and residents.

Traditional skills have failed to be passed down and traditional uses of land and water are no longer possible due to poor conditions and health risks. The wai and moana are important and underpin wellbeing for families. They give young people a connection to the land and grows their knowledge

of their culture. Water has its own mauri (life force) in Māori culture. The Landfill has contributed to a disconnect between people and their environment.

Local cultural enjoyment of the stream for fishing, eeling and flax collection has all but stopped, meaning traditional uses of the stream are no longer being passed on to future generations through active engagement with the land. This restricts the ability of iwi and hapū to maximise cultural benefits of these activities and has harmed the connections the next generation have to their traditional lands, as well as the practices that have maintained the land and water for generations.

The impact of the Landfill on cultural wellbeing extends to the sea. The water flowing from the Hōkio stream is seen to have a negative impact on the water and seafood at Hōkio Beach. Traditionally the local iwi have lived between the lake and the sea to take advantage of the natural resources that were available. This is no longer the case.

Hōkio is one of the last remaining beaches in the District where there is public drive on access. This access and the beach and the condition of the beach needs to be maintained to continue this important cultural link for the community. The potential for future leachate from the Landfill site is seen as a possible risk to the beach and seabed. If this occurred it would impact social and cultural wellbeing.

2.6.1 Cultural wellbeing outcomes

Based on the preceding paragraphs, the following are the outcomes that will be used to evaluate the impact of options on cultural wellbeing.

Horowhenua supports cultural and traditional activities in the area surrounding the current landfill

Waste disposal does not prevent cultural and traditional activities (e.g. eeling) from taking place. Instead, waste disposal facilitates and supports these activities. Disposing Horowhenua's waste maintains and enhances the traditions with ancestral lands, waterways wāhi tapu and other taonga.

Horowhenua's waste disposal supports the development and capacity building of local Marae, hapū and iwi

Waste disposal provides opportunities for local Marae, hapū and iwi, and it enables capacity and capability building.

The decision on the future of the Landfill builds and enhances the relationship between HDC and tangata whenua

HDC takes a proactive approach to Te Tiriti o Waitangi and its principles and partners with the tangata whenua to enable them to make decisions alongside HDC.

3 Social wellbeing option evaluation

The outcomes associated with social wellbeing are related to healthy lifestyles and communities that are supported, included, connected and feel safe. Social wellbeing includes a relationship between the community and HDC that is respectful and sees HDC and the Landfill complying with legal agreements and compliance regulations. Social outcomes will uplift the communities around the Landfill and support community development.

3.1 Option 1: Close Landfill in 2022

Closing the Landfill in 2022 will limit the volume of waste in the Landfill. Limiting the volume of waste reduces the negative perception of the Landfill, both while operational and in the future once closed.

Historic issues arising from the old unlined dump at the Landfill site, including leachate, will continue to impact health and water quality regardless of the option chosen. However, closing the Landfill would reduce the incidents of odour leaving the Landfill boundary and impacting Hōkio residents.

The Landfill has been a source of tension between HDC and the community since the original dump was proposed. The Landfill's history of compliance failures has angered many in the communities surrounding the site. Animosity between HDC and members of the community is likely to continue as long as the Landfill is operational. Closing the Landfill in 2022 would be ahead of the timeframe set out in the Landfill Agreement. Under the Landfill Agreement the reconciliation process will occur through the provision of an apology by the HDC chief executive, or Mayor, in person and a commitment by the parties to work together in good faith to build positive relationships going forward.[9]

Closing the Landfill and remediating the site at any stage would remove the psychological barrier between Hōkio and Levin. This has the potential to grow the community and support development.

Closing the Landfill would make Hōkio a more attractive place for people to live. If the community at Hōkio were able to grow its population it would increase engagement within the community and create opportunities. Hōkio residents look north to Waitārere, which has a Four Square Store, takeaways, café and restaurant, and believe this could be possible for Hōkio.

3.2 Option 2: Close Landfill in December 2025

Closing the Landfill in December 2025 would have the similar impacts to Option 1, although they would be delayed or increased by up to four years depending on the positive or negative direction. The additional volume of waste going into the Landfill from 2022 to 2025 increases the potential risk of future impacts on health and water quality, in the small chance landfill liners do not remain effective.[10] The impacts of odour and inferior gas capture will continue for an additional four years.

Closing the Landfill in 2025 would enable HDC's chief executive to meet the terms of the Landfill Agreement. This would show residents that HDC is committed to the agreement and is staying true

[9] Horowhenua District Council, Hōkio Kaitiaki Environmental Alliance Incorporated, Horowhenua District Ratepayers and Residents Association Incorporated, s274 Parties (2019). *Agreement in relation to the Levin Landfill.*

[10] Waste Management Institute New Zealand (2018). *Technical Guidelines for Disposal to Land.* Pages 43 and 51-52

to its word. This is likely to improve relationships between HDC and the communities and stakeholders that have been campaigning to close the Landfill.

Like Option 1, the reconciliation process will occur through the provision of an apology by the HDC chief executive, or Mayor, and a commitment by the parties to work together in good faith to build positive relationships going forward.

Closing the Landfill in 2025 would align with the expected opening of the new road from Levin to Otaki, completing the Wellington Northern Corridor. This would create opportunities to develop the Hōkio community to take advantage of the reduced travel time south.

3.3 Option 3: Close Landfill in 2037

Keeping the Landfill open until 2037 will continue to impact the social wellbeing of the local community. Waste will continue to be buried at the Landfill, expanding the footprint, while odour concerns will remain.

Many residents expect the Landfill Agreement will see the Landfill close in 2025, at the latest. If the Landfill remains open past 2025, local residents will be upset by the perceived failure of HDC to comply with the agreement, which requires HDC's chief executive to recommend the Landfill be closed in 2025. Failure to do this would further erode the trust between residents impacted by the Landfill and HDC.

Residents would continue to closely monitor compliance with resource consents, and have expressed an intention to challenge any applications for continued Landfill operation and future resource consent reviews.

The longer the Landfill remains open, the longer the feeling of disconnection between Hōkio and Levin will continue. This will limit community development opportunities at Hōkio Beach. It will also limit the community's potential to develop alongside the expected growth of Levin and surrounding communities off the back of faster, safer connections to Wellington.

3.4 The outcomes

Horowhenua's waste disposal supports healthy lifestyles

The waste disposal will support healthy lifestyles. Waste disposal minimises health problems for the Horowhenua community. It also minimises pollution of the local area and reduces instances of unsafe water.

While closing the Landfill immediately would have the greatest impact on healthy lifestyles, ceasing the disposal of waste, closing the Landfill and restoring the site at any stage would improve the lifestyles of the residents that live in the communities around the Landfill.

Community members are scared by the experience of the old dump at the Landfill site and are concerned that history will repeat itself. Despite the environmental protection measures in place at the modern landfill, residents fear the risk, however small, of potential future impacts on the health of people and the environment, including waterways.

Option 1 would limit the volume of waste in the Landfill and limit odour. This would reduce the possible short- and long-term social impacts of the Landfill. Option 2 would limit the volume of waste going into the Landfill compared with Option 3 and would have the second greatest impact on achieving this outcome. Option 3 would be the most detrimental.

Horowhenua's waste disposal creates a safe and supportive environment

Waste disposal will support the community to feel safe and supported by building trust. Waste disposal will be transparent and honour commitments. Waste disposal complies with legal agreements and compliance regulations.

Parties to the Landfill Agreement want to see the Landfill closed by 31 December 2025 at the latest. Residents would be disappointed and lose further trust in HDC, if the Landfill was to grow larger than its current size, especially if it was to remain open past the end of 2025.

Options 1 and 2 would allow HDC's chief executive to comply with the Landfill Agreement. However, early closure, without further expansion, would be preferred by local residents who would see this as a positive step by HDC in repairing relationships and trust. Continuing to operate the Landfill until 2037 would be detrimental to the relationship between HDC and the community around the Landfill.

Closing the Landfill in 2022 would be seen by residents as a positive sign and a step towards repairing the relationship between HDC and the stakeholders and communities around the Landfill.

Horowhenua's waste disposal supports inclusive and connected communities

Waste disposal does not entrench existing inequalities. Instead, it will enable all members of the community to be included and connected. It will uplift the Hōkio community and will support community development.

Closing the Landfill at any time between 2022 and 2037 would improve the sense of connectivity for the Hōkio community. It would remove the mental and physical barrier that exists between the beach and Levin.

The sooner the Landfill is closed, the sooner potential growth of the Hōkio community could occur. Construction of the Otaki to Levin expressway is set to start in 2025 and be completed in 2029. Faster connections to Wellington present an opportunity to grow the community.

All options involve closing the Landfill at some stage. The potential to maximise this wellbeing outcome is greatest the sooner the Landfill is closed.

3.5 Social wellbeing conclusion

The option that provides the greatest contribution to/reduces negative impacts on social wellbeing is Option 1. As Table 3.1 shows. Option 1 scored 110 from a possible 125 and was the preferred option for each of the three outcomes.

Table 3.1 Social wellbeing outcome scores

Outcomes	Weight	Option 1	Option 2	Option 3
Waste disposal supports healthy lifestyles	8.5	4	3	2
Waste disposal creates a safe and supportive environment	10	5	4	2
Waste disposal supports inclusive and connected communities	6.5	4	3	1
Social wellbeing total	**25**	**110**	**85**	**43.5**

4 Economic wellbeing option evaluation

While waste is a cost to the local authority, it can have a positive impact, if it is managed well. In the context of the Landfill and HDC's waste disposal, economic wellbeing is about minimising the cost to the community and promoting economic activity, while reducing the volume of waste to landfill. It is also important the waste disposal solution meets the District's long term needs.

4.1 Option 1: Close Landfill in 2022

As identified in the financial case, the net present value (NPV) of this option over 14 years is $17.3 million. Additionally, there is $1.7 million of capital costs relating to the Landfill outstanding at the end of 2035. This brings the total NPV to $19 million over 14 years.

4.1.1 Economic impact of waste activities

Closing the Landfill and sending waste to an alternative class one landfill from 2022 onwards would end all landfill operational employment in the District, moving employment to the alternative class one landfill. This option has no jobs or GDP resulting from landfill activities in the District. However, there will still be employment and GDP resulting from the ongoing management and maintenance of the Landfill site, management of waste contracts and handling waste at the Levin Resource Recovery Facility (LRRF).

Using cost data from the financial case and regional multipliers, the impact on HDC's waste disposal on GDP and employment in the Horizons Region has been estimated. Direct, indirect and induced impacts are considered using the multiplier approach. These impacts can be described as:

- Direct impact – the direct GDP contribution and full-time equivalent employees (FTEs) employed on waste disposal activities
- Indirect impact – waste disposal activities require goods and services that are purchased from various suppliers. These suppliers in turn make purchases from their suppliers, in order to supply waste disposal services

Induced impact – waste disposal activities employ people directly, as do the various suppliers. These people earn income (mostly from wages and salaries, but also from profits), and once they have paid their tax, they use that income to purchase goods and services, which generates GDP and employment.

These economic impacts are measured in terms of gross domestic product (GDP) and employment (FTEs). The impacts are added together to estimate the total impact.

Multipliers are for the Horizons Region and, as such, it is not possible to estimate the impact on the Horowhenua District alone. More information on the economic impact assessment approach is provided in Appendix A.

As Table 4.1 shows, the estimated number of jobs directly supported by Option 1 is 86 over 15 years. This is an average of just under six FTEs per year. The direct contribution to Horizons Region's total GDP is expected to be $16.6 million over 15 years. This is an average of $1.1 million per year. Because the regional multiplier is used, the location of the GDP impact is unclear, as the suppliers to waste disposal could come from anywhere across the Horizons Region.

Employment includes HDC staff to manage the Landfill site post closure and to close and cap the Landfill. It also includes employment [redacted] to consolidate,

transport and dispose waste. This employment is expected to be predominantly within the District.

[redacted]

[redacted] There will be no significant change in transport employment. Larger trucks will take waste to the alternative class one landfill. The change in truck configuration will mean fewer truck movements although the haulage distance is longer.

[redacted]

When the indirect and induced benefits of HDC's expenditure are included the total employment is 162 FTEs over 15 years at an average of just under 11 per year.

Table 4.1 Option 1 economic impact of waste disposal over 15 years

	Direct	Indirect	Induced	Total
GDP ($m)	9.1	4.7	2.8	16.6
Employment (FTEs)	86	51	25	162

4.1.2 Cost of HDC waste disposal

To present the cost of HDC waste disposal in consistent values that are easy to understand, the remainder of the values presented in section 4.1 are in real 2021-dollar values to remove the impact of inflation. Therefore, the values and totals are different to the NPV figures presented in the financial case. It should be noted that some numbers in the text may not sum exactly due to rounding.

The total cost of waste disposal includes disposal, recycling, landfill operation, landfill development and landfill closure and maintenance.

As Table 4.2 shows, the total cost of waste disposal for Option 1 is $27.5 million. This includes $24.0 million for waste disposal activities over 15 years from 2022 to 2036. At the end of the period, HDC will have $3.5 million of capital loans outstanding for repayment.

The cost of waste disposal for all three options has three main components. Two of these occur between 2022 and 2036. A fixed cost incurred regardless of whether the Landfill remains open and variable costs that change based on the option chosen. The final component is capital loan repayments outstanding at the end of the period (31 December 2036).

Table 4.2 Option 1 total cost of waste disposal

	$(2021)
Fixed costs	[redacted]
Variable costs	
Capital loan repayments outstanding	3,483,642
Total cost	**27,477,367**

Fixed costs

Regardless of the option selected, HDC faces a fixed cost of [redacted] over 15 years. As Table 4.3 shows, HDC faces costs of [redacted] to repay borrowing for historic capital loans to fund

development and close the Landfill, [redacted] for ongoing management and maintenance of the Landfill site, and almost [redacted] for the provision of a public recycling station in Levin, at a cost of just over [redacted] per annum. This is included in the fixed costs because it was originally intended to be included in the waste disposal contract

As well as costs incurred to develop the Landfill, the fixed historic development and closure cost repayment includes the cost to cap the existing Landfill cells, remediate the borrow area and maintain resource consents. Although the Landfill will be closed HDC is required to review resource consents for the site in 2024, 2029 and 2034, and renew the consent in 2036.

Annual costs to maintain the site will be approximately [redacted] This includes activities such as environmental monitoring, leachate pumping, asset management, replacement and maintenance costs and landfill gas capture.

Table 4.3 Fixed costs of waste disposal

	$(2021)
Historic development and closure cost repayment	[redacted]
Ongoing management and maintenance of landfill site	
Recycling	
Total fixed cost	

Variable costs

The total variable cost to dispose of HDC's solid waste is [redacted] over 15 years. As Table 4.4 shows, this is a combination of Landfill gate fee revenue, development cost repayment of new loans for capital development works and a cost to dispose of waste.

Table 4.4 Option 1 variable costs of waste disposal

	$(2021)
Landfill gate revenue	[redacted]
Development cost repayment	
Waste disposal	
Total variable cost	

Gate fee revenue

The Landfill will close and there will be no gate fee revenue.

Development cost repayments

The Landfill will close in 2022. There will be no variable development costs to repay.

General waste

The cost of general waste disposal will be [redacted] over the 15-year period. This includes the cost payable by HDC to the operator of the alternative class one landfill to receive and consolidate HDC controlled waste at the LRRF, then transport and dispose of this waste at the alternative class one landfill.

The annual cost to dispose of HDC controlled waste at the alternative class one landfill is estimated to average [redacted] per year (excluding GST). Totalling [redacted] over 15 years.

The additional [redacted] variable costs are ETS charges and the waste levy payable on HDC controlled waste. The waste levy is payable to government at the same rate nationally, regardless of where waste is disposed.

Capital loans outstanding

At the end of the 15 year period from 2022 to 2036 HDC will have $3.5 million of loans outstanding for repayment after 31 December 2036. These loans include historic loans for development and asset renewal, as well as costs incurred to cap and close the Landfill in 2022.

4.1.3 Rates increase required

The cost to dispose of HDC controlled waste will increase by $1.1 million per year. HDC will need to decide how to cover this cost, not all costs will be recouped via rates, but will likely be spread across a number of sources including, targeted rates for waste disposal, general rates, kerbside rubbish bags or other fees and charges. This is intended to provide a quick comparison.

The additional cost per rating unit for the 18,007 rating units in the District is $58 per year.[11] The equivalent of 2.7 percent.

The rates increase does not include any offset from the Landfill aftercare fund, currently $5.4 million, or repayment of $3.5 million of capital loans due for repayment after 31 December 2036.

4.1.4 Impact on costs for non HDC controlled waste

The current cost to dispose of a tonne of waste at the MidWest Disposals owned LRRF is $215 ($187 ex GST). It is unclear how pricing at the LRRF will change when the Landfill closes. Table 4.5 shows the cost per tonne to dispose waste at transfer stations in surrounding local authority areas.

Table 4.5 Gate rates at surrounding resource recovery facilities

Council	Transfer Station Ownership	Landfill Ownership	Disposal fee per tonne (ex GST)
Horowhenua District	Private	Council	187
Rangitīkei District	Council	Private	159
Kāpiti Coast District	Council (leased)	Private	173-186
Whanganui District	Private	Private	243
Manawatū District	Council	Private	235
Palmerston North City	Private	Private	234
Porirua City	Council	Council	141
Hutt City	Council	Council	140
South Taranaki District	Council	Private	155
New Pmouth District	Private	Private	255

The LRRF is owned and operated by MidWest Disposals that currently use the Landfill for disposal. In all options, LRRF waste will likely go to an alternative class one landfill owned by the company. Pricing will be a commercial decision influenced by the cost to transport and potential savings from economies of scale from using the landfill the company owns and operates.

[11] 'Rating unit' as defined in sections 5A, 5B and 5C, Rating Valuations Act 1998 and the Rating Valuations Regulations.

The New Zealand waste disposal market is effectively a duopoly. If the Landfill were to close it would remove one of the only landfills in Horizons and Taranaki Regions not owned by one of the duopoly, or both as equal 50 percent shareholders in MidWest Disposals. The closest landfill not owned by MidWest Disposals would be Spicer's Landfill in Porirua. This would give MidWest Disposals an effective monopoly over the waste disposal market. This position could be used to increase prices.

As Table 4.5 shows, the rates for disposal across the nearby local authority areas range from $140 (ex GST) per tonne to $255 per tonne (ex GST). The LRRF cost currently sits just above the median ($173-$186) and just below the average ($193).

Depending on the decisions made by MidWest Disposals there is the potential that public disposal costs could increase under this option in line with those in other parts of the Horizons and Taranaki Regions.

4.1.5 Capacity to provide a long-term waste disposal solution

[redacted]

4.1.6 Impact on waste reduction and recycling

As the costs of disposal will be paid by HDC, the cost will ultimately be passed onto ratepayers, through higher rates, increased bag costs, or reduced council services elsewhere. If ratepayers want to reduce the cost, or maintain the current level of council services, there is an incentive for HDC and residents to reduce the volume of waste that is sent to landfill. This is likely to encourage an increase in waste reduction and recycling.

The alternative class one landfill is a fixed cost per tonne to transport and dispose of waste regardless of the annual volume. This creates a direct financial incentive for ratepayers to reduce the amount of waste sent to landfill.

4.2 Option 2: Close landfill in December 2025

As identified in the financial case the net present value (NPV) of this option over 14 years is $19.0 million. Additionally, there is $2.5 million of capital costs relating to the Landfill outstanding on 31 December 2035. This brings the total NPV to $21.5 million over 14 years.

4.2.1 Economic impact of waste activities

Using the methodology described in section 4.1.1 for Option 1, the GDP and employment impacts of Option 2 have been estimated. As Table 4.6 shows, the total number of FTEs supported in the

Horizons Region over 15 years is 268, of which 147 are directly employed to manage, operate or develop the Landfill.

The average direct employment is just under 10 per year. However, most of the employment impact will occur in the four years the Landfill remains open. Over this four year period, 60 direct FTEs will be employed to develop and operate the Landfill, at an average of 15 FTEs per year. Once the Landfill closes, average direct FTEs will reduce to an average of eight per year. This will not be consistent as this figure includes employment to cap and close the Landfill, as well as the ongoing management and maintenance of the site and HDC's waste disposal.

The contribution to Horizons Region GDP over 25 years will be $26.7 million, of which $14.6 million is direct from HDC's waste disposal. Like employment, the GDP impact will be greatest when the Landfill is open. Over this four year period the contribution to direct GDP will be $5.5 million and the contribution to total GDP in the Horizons Region will be $10.1 million.

Table 4.6 Option 2 economic impact of waste disposal over 15 years

	Direct	Indirect	Induced	Total
GDP ($m)	14.6	7.4	4.7	26.7
Employment (FTEs)	147	80	41	268

4.2.2 Cost of HDC waste disposal

To present the cost of HDC waste disposal in consistent values that are easy to understand, the remainder of the values presented in section 4.2 are in real 2021-dollar values to remove the impact of inflation. Therefore, as for Option 1, the values and totals are different to the NPV figures presented in the financial case. Please note that some numbers in the text may not sum exactly due to rounding.

The total cost of waste disposal for Option 2 is $31.6 million. This includes $26.5 million for waste disposal over 15 years from 2022 to 2036. At the end of the period, HDC will have $5.1 million of capital loans outstanding for repayment.

The cost of waste disposal for all three options has three main components. Two of these occur between 2022 and 2036. A fixed cost incurred regardless of whether the Landfill remains open and variable costs that change based on the option chosen. The final component is capital loan repayments outstanding as at 31 December 2036. Table 4.7 shows a breakdown of these costs for this option.

Table 4.7 Option 2 total cost of waste disposal

	$(2021)
Fixed costs	[redacted]
Variable costs	
Capital loan repayments outstanding	5,102,651
Total cost	**31,579,781**

Fixed costs

As with Option 1, HDC faces a fixed cost of [redacted] over 15 years to close and manage the Landfill site.

Variable costs

The total variable cost to dispose of HDC's solid waste is [redacted] over 15 years. As Table 4.8 shows, this is a combination of landfill revenue from gate fees, a development cost repayment on new loans to fund expansion, and a cost to dispose of waste.

Table 4.8 Option 2 variable costs of waste disposal

	$(2021)
Landfill gate revenue	[redacted]
Development cost repayment	
Waste disposal	
Total variable cost	

Gate fee revenue

The Landfill will remain open to commercial customers until 2025. The proposed gate fee [redacted] per tonne excluding GST, the government waste levy and ETS. Assuming the Landfill receives [redacted] per year from non HDC controlled sources, this would generate revenue of [redacted] over four years.

Development cost repayment

The development cost between 2022 and 2036 to repay the loans required to fund expanding the current Landfill cells will be [redacted] To enable the Landfill to take waste until 2025 capacity will be increased by constructing Stage 1B. The development cost also includes the cost of temporary capping while the Landfill is open, and final capping when the Landfill closes in 2025.

General waste

The cost to dispose of general waste over the 15-year period will be [redacted]

The variable cost for the additional four years the Landfill remains open will be [redacted] This includes the cost to dispose of HDC's 3,950 tonnes per year and [redacted] per year from other sources from 2022 to 2025, as well as additional costs to manage the Landfill site once closed. Keeping the Landfill open for the additional four years will incur additional costs for increased gas capture and leachate pumping costs that continue after the Landfill closes.

The annual cost to transport and dispose of solid waste and sludge at the alternative class one landfill will be approximately [redacted] per year excluding GST, assuming no unexpected changes to waste levy or ETS costs. The total cost over 11 years will be [redacted]

Capital loans outstanding

At the end of the 15 year period from 2022 to 2036, HDC will have $5.1 million of capital loans outstanding for repayment after 31 December 2036. These loans include historic loans for development and asset renewal incurred before 2022 as well as costs incurred between 2022 and 2025 to construct Stage 1B and cap and close the Landfill.

4.2.3 Rates increase required

The cost to dispose of HDC controlled waste and recycling will increase by just over $1.2 million per year. The additional cost per rating unit is $67 per year, the equivalent of a 3.2 percent rates increase.

The rates increase does not include any potential offset from the Landfill aftercare fund, which is currently $5.4 million, or repayment of $5.1 million of capital loans due for repayment after 31 December 2036.

4.2.4 Impact on costs for non HDC controlled waste

As stated above, the New Zealand waste disposal market is effectively a duopoly. Establishing a new landfill is time consuming and requires extensive upfront capital investment. The Landfill remaining open would provide a competitor to MidWest Disposals in the Horizons Region. This would potentially limit MidWest Disposals' ability to increase the rates it charges at the LRRF and other transfer stations in districts surrounding Horowhenua.

However, this would only last the four years the Landfill remained open. In 2026 MidWest Disposals would become the sole major landfill provider in the Horizons Region. When the Landfill closes, the company could use this position to increase disposal charges for non HDC controlled waste. Given the short-term life of the Landfill, a local competitor resource recovery facility using the Landfill is unlikely to emerge. From 2026 onwards the outcome would likely be the same as Option 1.

It is unclear how MidWest Disposals pricing at the LRRF will change when a new operator takes over operating the Landfill, or when the Landfill closes. In all options, LRRF waste will likely go to an alternative class one landfill owned by the company. Pricing will be a commercial decision, influenced by the cost to transport and potential savings from economies of scale from using a landfill they own and operate.

4.2.5 Capacity to provide a long-term waste disposal solution

The total tonnage of waste of disposed in the modern Levin Landfill to date is about 50 percent of the total consented volume of 977,000 tonnes.

Option 2 has capacity to take Levin's waste until 2025, if Stage 1B is constructed. If the Landfill receives [redacted] and be [redacted] percent full.

As addressed in Option 1, the alternative class one landfill has consents [redacted] With a consented footprint of [redacted] The additional 3,950 tonnes of HDC controlled waste will easily fit within the alternative class one landfill's annual capacity.

4.2.6 Impact on waste reduction and recycling

The requirement for the Landfill to have a [redacted] until 2026 creates a short-term incentive for HDC to maintain the current level of waste and potentially increase waste sent to landfill, to keep the volume [redacted] If waste falls below this level, it will reduce revenue to offset the costs to develop manage and operate the Landfill. This shortfall will need to be met by HDC. This would create a disincentive for HDC to promote waste reduction and recycling initiatives. Especially if non HDC controlled waste does not [redacted]

When waste disposal moves to the alternative class one landfill in 2025, as for Option 1, there would be a financial incentive to reduce the cost of waste. The cost of waste disposal will

ultimately be passed onto ratepayers. As waste disposal is charged at a fixed rate per tonne, regardless of the volume of waste, if ratepayers want to reduce the cost of waste or maintain the current level of council services, the solution is to produce less waste.

4.3 Option 3: Close Landfill in 2037

As identified in the financial case, the net present value (NPV) of this option over 14 years is $17.0 million. Additionally, there is $3.6 million of capital costs relating to the Landfill outstanding on 31 December 2035. This brings the total NPV to $20.6 million over 14 years.

4.3.1 Economic impact of waste activities

Using the same methodology outlined in section 4.1.1 for Option 1, the economic impact on GDP and employment in the Horizons Region has been estimated.

As Table 4.9 shows, the direct number of FTEs created is 150, or an average of 10 per year. FTEs include those required to manage and operate the Landfill, as well as development to increase capacity. Employment is likely to fluctuate between years, peaking when development is required. When indirect and induced FTEs are added to the direct number, 276 FTEs will be supported in the Horizons Region in the 15 years the Landfill would be open. This is an average of 18 per year.

The total GDP impact over 15 years is $27.7 million, an average of $1.85 million per year. As with Options 1 and 2, it is not possible to identify the impact on the District. Given the size of the District and the proximity to Palmerston North, it is likely that suppliers will come from across the Horizons Region.

Table 4.9 Option 3 economic impact of waste disposal over 15 years

	Direct	Indirect	Induced	Total
GDP ($m)	15.2	7.6	5.0	27.7
Employment (FTEs)	150	82	44	276

4.3.2 Cost of HDC waste disposal

To present the cost of HDC waste disposal in consistent values that are easy to understand, the remainder of the values presented in this section are in real 2021-dollar values to remove the impact of inflation. Therefore, as for Options 1 and 2, the values and totals are different to the NPV figures presented in the financial case. Please note that some numbers in the text may not sum exactly due to rounding.

As Table 4.10 shows, the total cost of waste disposal for Option 3 is $31.2 million. This includes $23.6 million for fixed and variable coats over 15 years from 2022 to 2036 and $7.6 million of capital loans outstanding for repayment at the end of the period.

The cost of waste disposal for all three options has three main components. Two of these occur between 2022 and 2036. A fixed cost incurred regardless of whether the Landfill remains open and variable costs that change based on the option chosen. The final component is capital loan repayments outstanding as at 31 December 2036.

Table 4.10 Option 3 total cost of waste disposal

	$(2021)
Fixed costs	[redacted]
Variable costs	
Capital loan repayments outstanding	7,631,206
Total cost	**31,248,829**

Fixed costs

Regardless of the option selected by HDC, it faces a fixed cost of [redacted] over 15 years to close and manage the Landfill site, including the current landfill and old dump. As well as the costs to close and cap the Landfill cells, HDC faces annual costs for activities such as environmental monitoring, leachate management, asset management, replacement and maintenance costs, landfill gas capture and resource consents.

Variable costs

The total variable cost to dispose of HDC's solid waste is [redacted] over 15 years. As Table 4.11 illustrates, this is a combination of Landfill revenue from gate fees, a development cost to repay loans to fund expansion and a cost to dispose of general waste.

Table 4.11 Option 3 variable costs of waste disposal

	$(2021)
Landfill gate revenue	[redacted]
Development cost repayment	
Waste disposal	
Total variable cost	

Gate fee revenue

In this option the Landfill will remain open to commercial customers until 2037. The proposed gate fee of [redacted] excluding GST, the government waste levy and ETS. Assuming the Landfill receives [redacted] per year from non HDC controlled sources, this would generate revenue of [redacted] over 15 years.

Development cost repayment

The 2022-2036 development costs repayable between 2022 and 2036 to expand the Landfill to create capacity to take waste to 2037 will be just under [redacted]. The development costs will allow for construction of Stage 1B and the development of Stage 4A, as well as temporary capping while the Landfill is open.

General waste

The cost of general waste disposal will be [redacted] over the 15-year period. This will cover the cost to dispose of 3,950 tonnes per annum of HDC controlled waste, and [redacted] per year from non HDC controlled sources. Costs include those incurred by HDC to manage the Landfill and the contract with the operator, asset management, maintenance and replacement costs, expanded gas capture to cover the larger Landfill footprint, consent and legal fees and costs to establish and operate a council-controlled trading organisation.

Capital loans outstanding

At the end of the 15 year period from 2022 to 2036, HDC will have $7.2 million of capital loans outstanding for repayment as at 31 December 2036. These loans include historic loans for development and asset renewal incurred before 2022, as well as costs incurred between 2022 and 2036 to construct Stage 1B and develop Stage 4A. In addition to the outstanding loans, the cost to permanently cap the landfill at the end of the period will be $450,000. Making total capital loans outstanding $7.6 million.

4.3.3 Rates increase required

The cost to dispose of HDC controlled waste and recycling will increase by just over $1 million per year. The additional cost per rating unit for the 18,007 rating units in the District is $57 per year. This is the equivalent of a 2.7 percent rates increase.

The rates increase does not include any potential offset from the Landfill aftercare fund, which is currently $5.4 million, or repayment of $7.6 million of capital loans due after 31 December 2036.

4.3.4 Impact on costs for non HDC controlled waste

The Landfill remaining open would provide a long term competitor to MidWest Disposals, potentially limiting MidWest Disposals' ability to increase the rates it charges to commercial customers, at the LRRF and other transfer stations in surrounding districts. In Levin, this would require HDC, or a private operator, to set up a competitor transfer station.

The longer-term commitment to keep the Landfill open until 2037 may create the incentive for [redacted] to establish a transfer station in Levin and use the Landfill. However, if the intention is to compete on price, MidWest Disposals has the size and resources to make this difficult. MidWest Disposals is ultimately owned by two multinational companies with greater resources and volumes of waste than any other waste disposal competitor operating in New Zealand, or HDC.

It is unclear how MidWest Disposals' pricing at the LRRF will change when a new operator takes over operating the Landfill. LRRF waste will likely go to an alternative class one landfill owned by the company. Pricing will be a commercial decision influenced by the cost to transport and potential savings from economies of scale from using the large out of district landfill they own and operate.

4.3.5 Capacity to provide a long-term waste disposal solution

As stated for Option 2, the Landfill is currently at approximately 50 percent of consented capacity. If the Landfill was fully developed, it would have capacity for 977,000 tonnes. [redacted]

4.3.6 Impact on waste reduction and recycling

As in Options 1 and 2, the cost of disposal will be paid by HDC. However, like Option 2, the requirement for the Landfill to have a [redacted] creates an incentive for HDC to maintain the current level of waste and potentially increase waste sent to landfill to keep the volume [redacted] This requires an additional [redacted] Maintaining a minimal

level of waste would create a disincentive for HDC to promote waste reduction and recycling initiatives.

Requiring [redacted] per year for 15 years means this option has the potential to impact waste reduction and recycling activities for longer. Additionally, with packaging becoming more environmentally sustainable, it is likely additional sources of waste will be required if waste volumes fall. This increase in waste could be partially filled by a growing population, although this would be unlikely, by itself, to fill the required volume. This would require the District to more than double in size in the next 15 years, which is not expected.

4.4 The outcomes

Waste disposal creates and supports jobs and contributes to GDP in the Horowhenua District

Horowhenua's waste disposal system will create new employment opportunities for the community and positively impacts GDP. Waste disposal contributes to the local economy.

As Table 4.12 shows, Option 3 provides the greatest impact on GDP and employment across the Horizons Region. Operational employees will come from within the District and are likely to spend their income within the District. Additionally, although the service providers required to develop the additional cells are likely to come from across the District, and in some cases New Zealand, it is likely that they will spend within the District while working at the Landfill.

Because Option 2 keeps the Landfill open for an additional four years, and requires additional development, it has the second greatest impact on GDP. Option 1 has the lowest impact. All waste is transported to the alternative class one landfill, leaving only a few positions to manage the site and waste contracts, sort waste at the transfer station and transport to the alternative class one landfill.

Table 4.12 Total economic impact of waste disposal options

	Option 1	Option 2	Option 3
GDP ($)	16,609,189	26,685,128	27,709,730
Employment (FTEs)	162	268	276

Waste disposal is affordable for businesses and residents

Waste disposable is affordable and does not limit economic development in the District. Waste disposal costs limit incidents of fly tipping.

Total cost of waste

The total cost of waste disposal of Options 1 and 3 are similar over the period from 2022 to 2036, as Table 4.13 shows. Although Option 3 has a $376,000 lower cost over the 2022-2036 period, Option 1 comes out more favorable by $3.8 million, when the outstanding loan repayments payable after 31 December 2036 are included.

Table 4.13 Total cost of waste disposal

	Option 1	Option 2	Option 3
Total cost 2022-2036 ($2021)	23,993,725	26,477,130	23,617,623
Capital loans repayable ($2021)	3,483,642	5,102,651	7,631,206
Total cost including loans repayable ($2021)	**27,477,367**	**31,579,781**	**31,248,829**

Rates increase required

The cost for HDC residents and ratepayers will increase for all three options. HDC will need to decide how to cover this cost, but will likely be spread across a number of sources including, targeted rates for waste disposal, general rates and kerbside rubbish bags.

As Table 4.14 shows, the equivalent change in rates required to make up the increased cost of waste, compared to the current arrangement, is estimated to be $57 per year for Option 3 and $58 for Option 1. For HDC's 18,007 ratable units, this is the equivalent of a 2.7 percent increase in the average rate for both options. Option 2 would require a 3.2 percent increase in rates ($67 per year).

The rates increase does not include any potential offset from the Landfill aftercare fund, which is currently $5.4 million, or repayments of capital loans outstanding as at 31 December 2036.

Table 4.14 Change in rates required to fund increased cost of waste disposal

	Option 1	Option 2	Option 3
Cost increase required ($2021) 2022-2036	15,702,730	18,186,134	15,326,628
Cost increase per year ($2021)	1,046,849	1,212,409	1,021,775
Rating units	18,007	18,007	18,007
Rating unit cost increase per year ex GST ($2021)	58	67	57
Current average rate inc GST ($2021)	2,433	2,433	2,433
New average rate inc GST ($2021)	2,500	2,511	2,499
Rate increase (percent)	2.7	3.2	2.7

Costs for non HDC controlled waste

In the short term the cost of waste disposal at a transfer station in Levin is unlikely to be impacted by the option selected. However, this is not to say that costs could not increase.

The rates for disposal across the nearby local authority areas range from $140 (ex GST) per tonne to $255 per tonne (ex GST). The LRRF cost currently sits just above the median ($173-$186) and just below the average ($193).

In the longer term, depending on the decisions made by MidWest Disposals, there is the potential that public disposal costs could increase under all options in line with those in other parts of the Horizons and Taranaki Regions.

Although Option 3 provides a long-term alternative to MidWest Disposals, it is unlikely that any competitor would be able to compete with the company on price for any extended period.

Fly tipping

Fly tipping is not expected to be influenced by price. According to Eunomia, international evidence shows no firm relationship between increases in waste costs and illegal dumping.[12] Cost is not the only reason people illegally dump. Other factors include a lack of appropriate disposal options and weak monitoring and enforcement by authorities.[13]

[12] Wilson, D., Chowdhury, T., Elliott, T., Elliott, L., Hogg, D. (2017). *The New Zealand waste disposal levy.* Eunomia.

[13] The Rubbish Trip (2019). *Final Levy Consult Summary and Position.*

Horowhenua's waste disposal meets the future needs of the District, including population and business growth

Waste disposal will provide for the future needs of the District. It will be sustainable long-term.

All three options will provide for the needs of the District from 2022-2036, before a new disposal agreement is required. If Levin grows faster than expected and waste volumes also grow, or recycling and other initiatives to reduce waste are not as successful as forecast, all three options have the capacity to take an increased volume of waste. All options have been given an equal score.

[redacted] Options 1 and 2 will meet HDC's disposal needs until the end of 2036.

The Landfill is currently at approximately 50 percent of consented capacity. If the Landfill was fully developed, it would have capacity for 977,000 tonnes. Option 3 will enable HDC to dispose of HDC controlled waste until the end of 2036. If the Landfill receives [redacted] per annum, by 2037 it would have received [redacted] tonnes and be [redacted] percent full.

Horowhenua promotes waste reduction, recycling, energy conservation and efficiency

Horowhenua's waste disposal will provide opportunities for waste reduction and recycling. It will encourage the community to reduce waste and will promote resource recovery.

The higher cost of waste for all three options is likely to promote a reduction in waste and an increase in recycling. Although Options 2 and 3 have a higher cost of waste, the requirement for a minimum of [redacted] reduces the incentive for HDC to promote waste reduction and recycling.

The gate rate [redacted] proposed for the Landfill in Options 2 and 3 is [redacted] If the market for private collection and disposal is competitive, [redacted] would allow commercial users of the Landfill to potentially charge lower prices for waste disposal services, reducing the incentive for their customers to reduce waste.

Option 1 presents a direct financial incentive to promote waste reduction and recycling from 2022 onwards. Because Option 1 does not require a minimum waste volume, there is a direct cost incentive to reduce waste sent to landfill. If less waste is sent to landfill, it reduces the cost to HDC, which can be passed onto ratepayers. The savings could be invested to increase/improve other services offered by HDC, including waste reduction and recycling. [redacted]

Option 2 will have a direct financial incentive to reduce waste from 2025 onwards. Option 3, with [redacted] significantly higher development and management and operational costs, presents the least favourable option for waste reduction and recycling.

4.5 Economic wellbeing conclusion

As Table 4.16 shows, Options 1 and 3 scored equally as the preferred option for maximising the economic wellbeing of HDC's waste disposal. Option 1 was superior to Options 2 and 3 for both the impact on promoting waste reduction and recycling. All three options are equal in meeting HDC's future waste needs. Options 1 and 3 are very similar when it comes to delivering waste disposal that is affordable for businesses and residents. Although Option 3 has a slightly lower waste

disposal cost from 2022 to 2036, the outstanding loan payable at the end of the period made the overall cost greater than Option 1. Option 3 would make the greatest contribution to GDP and employment, but this was not enough to overcome Option 1's superior performance across the other three outcomes.

Table 4.15 Economic wellbeing outcome scores

Outcomes	Weight	Option 1	Option 2	Option 3
Waste disposal creates and supports jobs and contributes to GDP in the Horowhenua District	5	1	2	5
Waste disposal is affordable for businesses and residents	11	4	1	3
Waste disposal meets the future needs of the District, including population and business growth	4.5	3	3	3
Horowhenua promotes waste reduction, recycling, energy conservation and efficiency	4.5	3	2	1
Economic wellbeing total	**25**	**76**	**43.5**	**76**

5 Environmental wellbeing option evaluation

The outcomes related to environmental wellbeing are about best practice for environmental management of landfills, environmental degradation of Horowhenua's rivers, lakes and waterways, and limiting greenhouse gas emissions.

5.1 Option 1: Close Landfill in 2022

Closing the Landfill in 2022 will limit the footprint, surface area and slope face of the Landfill. Waste will be sent [redacted]

Final capping to close the Landfill will limit rainwater infiltration, which increases leachate. An assessment of leachate production and rainfall at the Landfill has shown that final capping will reduce the infiltration of rainwater from about 45 percent when operational down to about 16 percent when capped. Although leachate continues to be collected after closure, closing the Landfill reduces the risk of an adverse localised leachate event occurring, such as a pump failure and leachate overflow.

[redacted] Like the Levin Landfill, the alternative class one landfill has a modern lining system to collect and control leachate including, a geosynthetic clay liner and a high-density polyethylene plastic flexible membrane liner.

[redacted]

Progressive installation of gas collection wells maximises the collection of gas[redacted] Gas destruction at the alternative class one landfill currently exceeds the 25 percent recorded at the Landfill.

The 2021 Site Visit Compliance Report[redacted] found that the alternative class one landfill was compliant with five of its six resource consents, covering:

- General conditions relevant to all consents
- Discharge of solid waste to land and leachate to ground
- Discharge to air from a solid waste disposal operation.

The consent that was non-compliant was found to be low risk, and the result of a delay providing a plan by the required date.

[redacted]

The transport emissions created by driving 3,950 tonnes from Levin to the alternative class one landfill are 31 tonnes of carbon dioxide equivalent (tCO2e) per annum, while driving to the Landfill only creates two tCO2e per annum.

The alternative class one landfill currently produces significantly less greenhouse gas emissions per tonne due to its efficient gas capture abilities. Option 1 would create a total of 915 tCO2e emissions per annum (includes transport and landfill emissions), whereas the Landfill would produce 3,275 tCO2e emissions per annum, unless the current gas capture system is improved. Total emissions for Option 1 over the 15-year period would be 13,725 tCO2e.

5.2 Option 2: Close Landfill in December 2025

This option allows the Landfill to continue to operate for four more years, meaning greater greenhouse gas emissions per tonne of waste disposed until 2025, unless the efficiency of the gas capture system at the Landfill is improved. When waste moves to an alternative class one landfill in 2026, the impacts will be the same as Option 1.

As noted for Option 1, final capping to close the Landfill from December 2025 will limit rainwater infiltration, which increases leachate. An assessment of leachate production and rainfall at Levin Landfill has shown that final capping will reduce the infiltration of rainwater from about 45 percent when operational down to about 16 percent when capped. Like Option 1, although leachate is collected, closing the Landfill reduces the risk of an adverse localised leachate event occurring.

Accepting waste for an additional four years will slightly increase the exposed slope face of the Landfill. This slightly increases the risk of instability and slumping in the event of an earthquake. This could create small, localised contamination outside of the liner footprint area, but within the Landfill boundary that could quickly be remediated.

Tsunami risk mapping shows that the Landfill site is outside of the yellow zone evacuation area, which is the lowest risk zone. The yellow zone covers all maximum credible tsunami risks, including the highest impact events.

The risk from a high-intensity rainfall event is that waste could be exposed and washed off the Landfill, beyond the current lined Landfill footprint. Exposed waste would be contained on the Landfill site and could be easily retrieved, like windblown litter is retrieved. There is very low risk of flooding at the site, because there are no drainage features running through or past the actual Landfill areas.

The 2021 Site Visit Compliance Report for the Landfill[17] found that the Landfill was fully compliant with four of its seven resource consents. The consents met were:

- Discharge solid waste to land
- Divert stormwater from around the Landfill
- Discharge liquid waste onto and into land
- Discharge stormwater to land and potentially to groundwater via ground soakage.

The Landfill was found to be at significant non-compliance for discharge of gas, odour and dust to air. Failure of the Landfill to undertake any methane surface monitoring resulted in a significant non-compliance. Several low risk non-compliances were also assessed relating to failure to

[17] Horizons Region Council (2021). *Annual Compliance Audit Report. Levin Landfill. 8 June 2021.*

undertake certain monitoring requirements or provide data and low risk non-compliances were given for providing insufficient information.

The Landfill was found to have low risk non-compliance for two of its resource consents. Discharge of leachate into land was assessed to be low risk non-compliant as a result of failure to remediate the capping on the old unlined part of the Landfill site, immediately implement the updated monitoring program and appropriately report on the significance of all exceedances in the monitoring program.

Discharge to air (flared landfill gas) was low risk non-compliant as a result of failures to meet timeframes, the operations and management plan not including all required information and failing to meet all sampling requirements.

As outlined in section 5.1, according to the 2021 Site Visit Compliance Report, the alternative class one landfill was compliant with five of its six resource consents. It was non-compliant with one consent, but this was considered low risk.[18]

The alternative class one landfill and the Levin Landfill both have modern linings to reduce the risk of leachate including, a geosynthetic clay liner and a high-density polyethylene plastic flexible membrane liner. However, unlike the alternative class one landfill, the underlying geology at the Levin Landfill's location does not offer the same natural containment.

The WasteMINZ technical guidelines for disposal to land states, "Where an engineered liner system is used it should be recognised that this system will have a finite lifetime, so consideration needs to be made of the ability of the underlying materials to keep discharges from the site to a level which will not cause significant adverse effects on the surrounding environment in the long term."[19]

The Levin Landfill is located within an area of stable sand dune deposits. Beneath the sand is gravel. A two metre thick layer of silt and clay separate the upper sand layer and gravel.[20] WasteMINZ technical guidance states that "the ability of the underlying materials to limit the potential for liquids and gases to migrate into the wider environment (should the liner ever degrade) is a key benefit."[21] Due to risk of off-site movement of leachate and landfill gas, the guidance states it is undesirable to site a class one landfill in areas with high permeability soils, such as sands and gravels.

Because of the engineering controls, the risk of off-site movement of leachate and landfill gas from the lined and operational site at the Landfill is very low. However, the risk to the environment is higher than an alternative class one landfill that has the same engineering controls, but superior natural containment.

The Landfill's lower investment in gas capture infrastructure means it has relatively poor gas capture, resulting in higher rates of emissions per tonne of waste. Closing the Landfill in December 2025 means that the current rate of emissions (3,275 tCO2e per annum) will continue, unless improvements are made to the gas capture system. The alternative class one landfill would create 915 tCO2e per annum. Therefore, Option 2 creates 23,265 tCO2e over a 15-year period. These emissions are made up of 13,100 tCO2e using the Landfill and 10,065 tCO2e using the alternative class one landfill.

[18] Resource consent requirements differ for the two landfills considered. A direct comparison cannot be made.
[19] Waste Management Institute New Zealand (2018). *Technical Guidelines for Disposal to Land.* Page 43.
[20] Begg, J, Johnston, R. (2000). *Geology of the Wellington area.*
[21] Waste Management Institute New Zealand (2018). *Technical Guidelines for Disposal to Land.* Pages 51-52.

5.3 Option 3: Close Landfill in 2037

Closing the Landfill in 2037 will expand the Landfill footprint to continue to produce significant emissions, unless improvements are made to the gas collection system.

Keeping the Landfill open until 2037 will expand the footprint, surface area and slope face of the Landfill. This increases the risks associated with rainfall infiltration, which increases leachate, as addressed for Option 2, unless completed Landfill areas are progressively capped.

Accepting waste for 15 more years will increase the exposed slope face of the Landfill, somewhat increasing the risk of instability and slumping in the event of a significant earthquake.

The Landfill has a record of failing to comply with resource consent conditions. As outlined in section 5.2, the 2021 Site Visit Compliance Report found that the Landfill was compliant with four of seven resource consents, low risk non-compliant with two consents and, significantly non-compliant with discharge landfill gas, odour and dust to air.

As noted in section 5.2, the Landfill's location is in sand dune deposits. Areas with high permeability soils, such as sand dunes, are generally undesirable locations to site a landfill. The risk of off-site movement of leachate and landfill gas from the lined and operational site at the Landfill is very low, because of the engineering controls. However, the risk to the environment is higher than a site that has the same engineering controls, but with natural containment.

Initially, the Landfill will create 3,275 tCO2e per annum, assuming 3,950 tonnes of HDC controlled waste is disposed annually. Improvements to the gas capture as new stages of the Landfill are developed would reduce annual emissions to 2,842 tCO2e. This implies that Option 3 would create 45,351 tCO2e of emissions over the 15 years. Assuming no further improvements, this option would create the worst emissions outcome.

Emissions from non-HDC controlled tonnes would likely be higher at the Landfill than if it was disposed of at an alternative class one landfill. The three closest landfills to HDC all presently have greater gas capture than the Levin Landfill.

5.4 The outcomes

Horowhenua's waste disposal meets best practice for environmental management of landfills

Waste disposal achieves high environmental management standards for landfills. It will meet all compliance regulations as well as any legal agreements.

The focus of the environmental impacts is on Horowhenua District. Disposing of waste outside the District transfers the risks of disposal to the alternative out of district landfill.

The alternative class one landfill has a better siting and emissions outcomes than the Levin Landfill. The underlying geology of the alternative class one landfill provides superior natural containment compared to the Landfill. Gas capture is presently more efficient at the alternative class one landfill, reducing greenhouse gas emissions from HDC controlled waste. Although not directly comparable, in the most recent annual monitoring reports the alternative class one landfill has performed better against resource consent conditions than the Landfill.

The risk of off-site movement of leachate and landfill gas from the lined and operational site at the Landfill is very low, because of the engineering controls. However, the risk to the environment is higher than a site that has the same engineering controls, but with natural containment, such as the alternative class one landfill.

Of the three options available, closing the Landfill and disposing waste at the alternative class one landfill comes the closest to achieving best practice. Option 1 sees waste disposed of at the alternative class one landfill for 15 years, making it the preferred option for this outcome, followed by Option 2.

The disposal of Horowhenua's waste does not further degrade Horowhenua's rivers, lakes and waterways

Waste disposal minimises negative environmental impacts. It will not degrade rivers, lakes and waterways. Instead, the Landfill will manage its waste disposal in a way that promotes and enhances Horowhenua's natural and built environment for current and future generations.

There is no evidence that the modern Landfill is currently causing environmental degradation of Horowhenua's rivers, lakes and waterways. However, the best way to minimise the risks of potential future environmental impacts in the District is for operations to cease and for waste to be disposed of at an alternative class one landfill outside the District. Although it will not remove the existing refuse buried at the Landfill site, Option 1 provides the best opportunity to avoid the risk of disposal of Horowhenua's waste causing further degradation of Horowhenua's rivers, lakes and waterways in the future.

Although small, Option 3's combination of the finite life of landfill liners, the Landfill's location on sand dune deposits[22] and the larger Landfill footprint increases the risk to Horowhenua's natural environment in the long term.

Closing the Landfill and sending waste to an alternative class one landfill outside the District promotes and enhances Horowhenua's natural environment by limiting the Landfill footprint. Options 1 and 2 achieve this.

Horowhenua's waste disposal will not compromise a sustainable environment

Waste disposal will support sustainable endeavours. It will enable environmental initiatives and help the community protect natural resources. Waste disposal will limit the contribution of Horowhenua's waste to greenhouse gas emissions.

As Table 5.1 shows, there is a significant difference between the quantities of greenhouse gas emissions that are created for each of the options, assuming that the landfill gas capture efficiency at the Landfill is not improved beyond current expectations. Transporting and disposing of waste to alternative class one landfill would create significantly less greenhouse gas emissions, given the existing infrastructure to deal with landfill gas.

The alternative class one landfills closest to the District all have superior gas capture than the Landfill. The non-HDC controlled tonnes disposed at the Landfill for Options 2 and 3 will result in higher emissions than if they were disposed of elsewhere.

On the basis of existing infrastructure and operations, closing the Landfill in 2022 will mean that Horowhenua's waste disposal reduces its greenhouse gas emissions quickly and, therefore, significantly. This is important for climate mitigation due to the accumulating nature of greenhouse gas emissions (i.e. the earlier you can reduce greenhouse gas emissions, the better). For these reasons, Option 2 is the second-best option, followed by Option 3.

[22] Waste Management Institute New Zealand (2018). *Technical Guidelines for Disposal to Land*. Page 43.

Table 5.1 Greenhouse gas emissions for HDC controlled waste disposal over 15 years

	Option 1	Option 2	Option 3
Total greenhouse gas emissions (tCO2e)	13,725	23,265	45,351

5.5 Environmental wellbeing conclusion

Option 1 has the greatest impact on minimising the negative impacts of waste disposal on environmental wellbeing. As Table 5.2 shows, Option 1 scored 113 from a possible 125 and was the preferred option for each of the three outcomes.

Table 5.2 Environmental wellbeing outcome scores

Outcomes	Weight	Option 1	Option 2	Option 3
Waste disposal meets best practice for environmental management of landfills	12	4	3	2
Waste disposal does not further degrade Horowhenua's rivers, lakes and waterways	8	5	5	4
Waste disposal will not compromise a sustainable environment	5	5	4	3
Environmental wellbeing total	**25**	**113**	**96**	**71**

6 Cultural wellbeing option evaluation

The outcomes associated with cultural wellbeing are related to supporting cultural and traditional activities, and the development and capacity building of local Marae, hapū and iwi. It is also about building and enhancing the relationship between HDC and tangata whenua.

6.1 Option 1: Close Landfill in 2022

The Cultural and Environmental Impacts on Ngāti Pareraukawa and Ngātokowaru Marae report,[23] by Rachael Selby and Pataka Moore, the Levin Landfill - Social Impact report[24] by Bronwyn Kerr and the Cultural and Environmental impacts on Muaūpoko –Tamarangi Hapū report[25] by Kaumatua me nga Kuia o Tamarangi Hapū showed the following:

- Benefits to early closure include improving Council-community relations. Decision-makers at HDC inherit the legacy of over a century of deceit, harm and dysfunction. Early closure offers the option for positive leadership and effective partnerships
- Early closure (i.e. closing the Landfill in 2022) would allow the community to rebuild. Furthermore, since the community has called for the Landfill to be closed, early closure provides the best opportunity of preventing relationships further degrading.
- To exercise the role of Kaitiaki effectively Muaūpoko seeks to work in a positive relationship with HDC. If the relationship is to progress then collaborating positively and to enhance cultural values and alleviate negative effects would be beneficial
- Ngāti Pareraukawa feel as though they have no political voice, as they have called upon HDC to do something about the environment for years
- Negative cultural and environmental impacts have impacted upon health
- Coastal environment, shellfish, all fish life including tuna, whitebait, water quality and water levels have been negatively impacted, by several issues including the Levin Landfill, the Pot, the industrial and farming activities upstream. Early closure would stop any possible increase in degradation from the current modern Landfill and may enable these impacts to start being reversed
- Environmental degradation has occurred because of HDC's actions, including the opening of the Levin Rubbish Dump. Therefore, closing the Landfill in 2022 would stop further environmental degradation from occurring
- Iwi descendants have been disconnected from their lands and have been excluded from exercising kaitiakitanga.

These reports call for early closure of the Landfill. The findings of these reports were echoed and confirmed during BERL's stakeholder engagement. Furthermore, closing the Landfill in 2022 enables relationships to start rebuilding and demonstrates that HDC has listened to the community.

[23] Selby, R., Moore, P. (2020). *Cultural and environmental impacts on Ngāti Pareraukawa and Ngatokaru Marae.*
[24] Kerr, B. (2020). *Levin Landfill social impact report.*
[25] Kaumatua me nga Kuia o Tamarangi Hapū (2020). *Cultural and Environmental impacts on Muaūpoko –Tamarangi Hapū*

6.2 Option 2: Close Landfill in December 2025

Delaying the closing of the Landfill to December 2025 will result in additional volumes of waste going into the Landfill for the four years from 2022 to 2025. This will strain relationships between HDC the community and will see the negative impact identified in Option 1 continue, while delaying the positive impacts by four years. Delaying the Landfill closure delays the opportunity to build relationships and, therefore, limits HDC's ability to support cultural and traditional activities, as well as development and capacity building.

A positive aspect of closing the Landfill in December 2025 is that this would be consistent with the Landfill Agreement. This enables HDC's chief executive to achieve the terms of the Landfill Agreement, showing that HDC is committed to the agreement. Closure in 2025 would honour the agreement and provide light at end of tunnel.

6.3 Option 3: Close Landfill in 2037

Closing the Landfill in 2037 will continue the negative cultural impacts of the Landfill and will limit the community's ability to move forward. Furthermore, keeping the Landfill open will make the negative impacts identified for Option 1 much more significant.

The harm that the Landfill is causing for cultural wellbeing will further strain the relationships rather than enabling the community to rebuild.

Closing the Landfill in 2037 means that HDC will fail to meet the terms of the Landfill Agreement. This would show the community that HDC does not value the agreement and is not committed to it. This is likely to further deteriorate relationships between HDC and the communities, especially those who have been campaigning to close the Landfill.

6.4 Cultural wellbeing outcomes

Horowhenua supports cultural and traditional activities in the area surrounding the current landfill

Waste disposal does not prevent cultural and traditional activities (e.g. eeling) from taking place. Instead, waste disposal facilitates and supports these activities. Disposing Horowhenua's waste maintains and enhances the traditions with ancestral lands, waterways wāhi tapu and other taonga.

For this outcome to be achieved, it is necessary to stop perceived environmental degradation created by the Landfill. Option 1 provides the best chance of achieving this as it limits the volume of waste that remains in the Landfill once the Landfill closes. In addition, moving away from using this land as a landfill will support the Landfill site restoration.[26]

Option 2 would have similar positive impacts to Option 1, although the positive impacts would be delayed by four years. Option 3 is the least beneficial option as it delays closure until 2037.

Horowhenua's waste disposal supports the development and capacity building of local Marae, hapū and iwi

Waste disposal provides opportunities for local Marae, hapū and iwi, and it enables capacity and capability building.

[26] Landfill restoration refers to the process of covering a landfill once it has reached its maximum capacity and transforming it into usable land.

The current design of the options do not explicitly provide opportunities for local Marae, hapū and iwi, and do not enable capacity and capability building.

Leachate remediation works could incorporate hapū and iwi and be designed to provide development and capacity building that would be beneficial to local Marae, hapu and iwi.

The decision on the future of the Landfill builds and enhances the relationship between HDC and tangata whenua

HDC takes a proactive approach to Te Tiriti o Waitangi and its principles and partners with the tangata whenua to enable them to make decisions alongside HDC.

Cultural and Environmental Impacts on Ngāti Pareraukawa and Ngātokowaru Marae report and the Levin Landfill - Social Impact report are clear that tangata whenua wish for the early closure of the Landfill. As such, Option 1 is the best pathway to achieving this outcome as it is the earliest possible closure.

If the Landfill closure date is past 2025, time and resources will likely be diverted to efforts to prevent the Landfill remaining open, instead of other activities tangata whenua might engage in.

6.5 Cultural wellbeing conclusion

Option 1 provides the greatest contribution to improving cultural wellbeing. As Table 6.1 shows. Option 1 scored 103 from a possible 125 and was the preferred option for each of the three outcomes.

Table 6.1 cultural wellbeing outcome scores

Outcomes	Weight	Option 1	Option 2	Option 3
Horowhenua supports cultural and traditional activities in the area surrounding the current landfill	10	4	3	1
Waste disposal supports the development and capacity building of local Marae, hapū and iwi	6	0	0	0
The landfill decision builds and enhances the relationship between HDC and tangata whenua	9	5	3	1
Cultural wellbeing total	**25**	**85**	**57**	**19**

7 Scoring and ranking the options

Overall, the option that makes the greatest positive contribution to wellbeing/limits the negative impacts on wellbeing of the Horowhenua District is Option 1. As Table 7.1 shows, Option 1 was the highest scoring option across all four wellbeings, with a total score of 384 from a possible 500. The closest any of the other two options came to outscoring Option 1 on any of the four wellbeings was Option 3 matching Option 1 for economic wellbeing. While Option 3 had a lower waste disposal cost the loan to be repaid at the end of the period made Option 3 more expensive.

Option 1 was the highest, or equal highest, scoring option for 12 of the 13 outcomes. The only outcome that Option 1 was not the highest was 'waste disposal creates and supports jobs and contributes to GDP in the District'. As Option 1 would see no further development at the Levin Landfill site and the majority of disposal activities would occur outside the District, the GDP generated, and full-time equivalent employee jobs supported are lower than Options 2 and 3 where landfill development and at least some operation occurs within the District.

Table 7.1 HDC waste disposal outcomes, wellbeings and total wellbeing scores

Outcomes	Weight	Option 1	Option 2	Option 3
Waste disposal supports healthy lifestyles	8.5	4	3	2
Waste disposal creates a safe and supportive environment	10	5	4	2
Waste disposal supports inclusive and connected communities	6.5	4	3	1
Social wellbeing total	**25**	**110**	**85**	**43.5**
Waste disposal creates and supports jobs and contributes to GDP in the Horowhenua District	5	1	2	5
Waste disposal is affordable for businesses and residents	11	4	1	3
Waste disposal meets the future needs of the District, including population and business growth	4.5	3	3	3
Horowhenua promotes waste reduction, recycling, energy conservation and efficiency	4.5	3	2	1
Economic wellbeing total	**25**	**76**	**43.5**	**76**
Waste disposal meets best practice for environmental management of landfills	12	4	3	2
Waste disposal does not further degrade Horowhenua's rivers, lakes and waterways	8	5	5	4
Waste disposal will not compromise a sustainable environment	5	5	4	3
Environmental wellbeing total	**25**	**113**	**96**	**71**
Horowhenua supports cultural and traditional activities in the area surrounding the current landfill	10	4	3	1
Waste disposal supports the development and capacity building of local Marae, hapū and iwi	6	0	0	0
The landfill decision builds and enhances the relationship between HDC and tangata whenua	9	5	3	1
Cultural wellbeing total	**25**	**85**	**57**	**19**
Total wellbeing score (out of 500)	**100**	**384**	**281.5**	**209.5**

Appendix A Economic impact methodology

The economic impacts of the Horowhenua District Council's waste disposal options uses multipliers derived from inter-industry input-output tables for New Zealand. Input-output tables have been derived and updated from the national input-output tables produced by Statistics New Zealand.

Multipliers allow us to identify the direct, indirect and induced effects in terms of gross domestic product (GDP) and full-time equivalent (FTE) employment.

Measures of economic activity

The two measures used are:

GDP: The increase in output generated along the production chain, which when aggregated, totals gross domestic product, or GDP. This is the sum of:

- Compensation of employees (i.e. salaries and wages)
- Income from self-employment
- Depreciation
- Profits
- Indirect taxes less subsidies
- Note that expenditure is made up of the above (GDP) plus:
    - Intermediate purchases of goods (other than stock in trade)
    - Intermediate purchases of services.

Employment: The volume of employment is expressed as full-time equivalents (FTEs). These are estimated as the number of full-time employees and working proprietors and one-third of the number of part-time employees, converted to an annual basis. FTEs provide a measure of total labour demand associated with expenditure - e.g. four full-time jobs running for three months or three part time jobs running for a year would be shown as a single FTE.

Appendix B The Levin Landfill wellbeing engagement and framework

Please see accompanying report titled ‘Levin Landfill wellbeing engagement and framework’.