Infrastructure Committee

28 November 2024

Report for Agenda Item | Rīpoata moto e Rāraki take [2]

Department: Property & Infrastructure

Title | Taitara: Regional Material Recovery Facility (MRF) Options Assessment

Purpose of the Report | Te Take mō te Pūroko

The purpose of this report is to provide an update to the Infrastructure Committee on the work completed to consider a replacement to the current (Queenstown Lakes District Council) QLDC Materials Recovery Facility.

Executive Summary | Whakarāpopototaka Matua

Council has been considering its options for a replacement for its ageing Material Recovery Facility (MRF) in Glenda Drive, Queenstown to reduce the risks associated with the current facility failing and recyclable material being landfilled. A new MRF is required to process recyclable material collected from residential and commercial customers in the Queenstown Lakes and neighbouring Central Otago districts. Council has previously considered options for the development of a local MRF co-located with an upgraded refuse transfer station and resource recovery park in the Whakatipu Basin. To date, a suitable site in this location has not been found.

The purchase of land next to the Wānaka refuse transfer station, Ballantyne Road, has presented Council with an option to co-locate the MRF alongside the existing waste related services. This option has now been considered alongside others in the attached 'Regional Materials Recovery Facility Options Assessment' (options assessment).

The options assessment has considered multiple sites for a local MRF in the Queenstown Lakes district and in Cromwell, Central Otago. The option of processing recyclables at an out-of-district MRF has also been assessed alongside these local options. Consolidating and transporting recyclables out of the district (prior to sorting and processing at a local MRF) is an option not previously explored.

The financial analysis in the options assessment identified that the costs associated with developing a local MRF did not vary significantly across the variety of sites considered. Using an out-of-district MRF has a similar cost, but different factors influence the cost, namely transport costs (fuel) and MRF gate fees in comparison to the capital costs of building a local MRF. Capital funding for a replacement MRF option is provided in the Long Term Plan 2024-2034.

While the local MRF options scored slightly higher than the out-of-district option in the non-financial criteria, the out-of-district option would be available sooner than the local MRF options, this makes it attractive particularly in the short-medium term to alleviate the risk of landfilling recyclables as a

result of the current MRF failure. Going with an out-of-district solution would avoid capital costs associated with building a new local MRF, however the risk associated with capital cost increases if Council decided to choose an out-of-district option long term.

While transport emissions are higher for an out-of-district option, the intrinsic need to transport sorted and baled recyclables eventually to a port (e.g. in Dunedin or Timaru) once processed through a local MRF reduces the emissions gap between the options. Including emissions generated from the construction of a new local MRF (embodied emissions in concrete, steel etc) versus using an existing out-of-district MRF would further close this gap. Detailed work to understand this level of emissions potential has not been completed.

The highest scoring local MRF option is to develop the facility at Ballantyne Road, Wānaka. Council has already purchased the land, operates its refuse transfer station there and the site is already used for wider waste diversion and resource recovery purposes. Existing site operators Wastebusters and Wānaka Greenwaste have requested more information to help plan for their future operations and a wider site masterplan exercise is required to determine optimum layout. Council has already commenced initial geotech investigations on the site to support work associated with upgrades to the Wānaka refuse transfer station. Progress with developing this land is therefore further advanced than the other local MRF site options however, a site master plan and detailed planning investigations have not yet been undertaken.

To reduce the risks associated with a total failure of the current MRF and consequent need to landfill recyclables, Council is also recommended to progress work to secure a short to medium term solution before deciding on the long-term option for a MRF replacement.

To help ensure a future informed and robust decision can be made by Council for the long-term solution, further exploration of potential commercial arrangements to send material to an out-of-district facility is required, whilst investigations for the Ballantyne Road site continue.

Council's options include:

- Do nothing and continue to use the existing MRF at Glenda Drive, Frankton.
- Proceed with development of the Ballantyne Road, Wānaka site as the preferred location.
- Proceed with an out-of-district option as the preferred solution.
- Proceed with a hybrid approach to keep the local and out-of-district options open. This includes exploring a short-medium term out-of-district solution while the Ballantyne Road site is further assessed. Noting that if Ballantyne Road is not feasible, then an out-of-district solution could evolve into a long-term solution.

Due to the benefits of a hybrid approach, this is the recommended way forward.

Recommendation | Kā Tūtohuka

That the Infrastructure Committee:

1. **Note** the contents of the attached *'Material Recovery Facility (MRF) Options Assessment, August 2024'* and this report;

2. **Note** progress on the development of a MRF solution outlined in this report and that further work is proposed before a decision is brought to Council to approve a replacement MRF solution;

3. **Note** that work associated with Option 2 to keep both a local MRF and out-of-district MRF option open will continue, this includes:
    a) commence engineering, environmental and planning investigations for a MRF at Ballantyne Road to enable risks to be further understood and quantified;
    b) explore site options for the consolidation of material for both the Ballantyne Road and out-of-district options;
    c) undertake further investigations with stakeholders associated with the Timaru and Dunedin MRFs to understand potential contractual arrangements for a short to medium term out-of-district solution;
    d) prepare a detailed procurement strategy for local MRF and out-of-district MRF solutions; and
    e) undertake a detailed carbon assessment for local MRF versus out-of-district MRF options including transport.

4. **Note** the impact of the proposed development of Ballantyne Road on current leaseholders (Wastebusters and Wānaka Greenwaste & Landscaping Supplies), and that work will commence to develop a site masterplan.

Prepared by:

Name: Sophie Mander
Title: Strategy Planning Manager (Waste Minimisation and Management)
6 November 2024

Reviewed and Authorised by:

Name: Tony Avery
Title: General Manager Property and Infrastructure
6 November 2024

Context | Horopaki

Background

1. Council has a Material Recovery Facility (MRF) located at Glenda Drive, Frankton for processing mixed recyclables collected from residents and businesses throughout the Queenstown Lakes district. Until 2021 the MRF was used by the neighbouring Central Otago District Council (CODC) for processing of its recyclables.

2. Due to population growth and subsequent volume increases in recyclable material, the demand on the MRF has increased to the point that the building and the sorting equipment are struggling to meet current (or future) demand. The sorting equipment is at the end of its life, with Council incurring significant maintenance costs to keep the facility operational.

3. In 2017, Council identified that the existing MRF facility is no longer fit for purpose and a new processing solution is required. As such, Council has been exploring options for a replacement that is reliable, flexible, and adaptable to future demands.

4. Previous work was focused on site options primarily in the Whakatipu basin which also allowed for the co-location of a new MRF alongside more broad resource recovery infrastructure including: sorting and recovery of construction and demolition material, a community recycling centre for the repurposing and reuse of household items, an education and events space, area for consolidation or processing of organic material, drop off facilities for materials included in product stewardship schemes and potentially areas for local circular economy businesses to lease.

5. Due to the challenges of finding suitable land to co-locate all these activities, the current focus is on the priority of replacing the MRF. Further work is required to explore solutions for the broader resource recovery needs.

6. Council's refuse transfer stations, (adjacent to the MRF on Glenda Drive and Ballantyne Road in Wānaka), also need expansion to meet current and future growth in the district and to upgrade traffic management and unloading areas to meet modern transfer station standards. The upgrade of the two refuse transfer stations, the MRF solution and development of a Whakatipu resource recovery park are included in the 2024/34 Long Term Plan.

7. Council recently purchased land adjacent to the Wānaka refuse transfer station on Ballantyne Road, which offers a potential new site to be considered for the MRF. Use of this site would mean decoupling the MRF development from a Whakatipu broader resource recovery park development. This site needed to be tested against previously considered sites as well as any additional solutions presented by the MRF being separate from a Whakatipu resource recovery park.

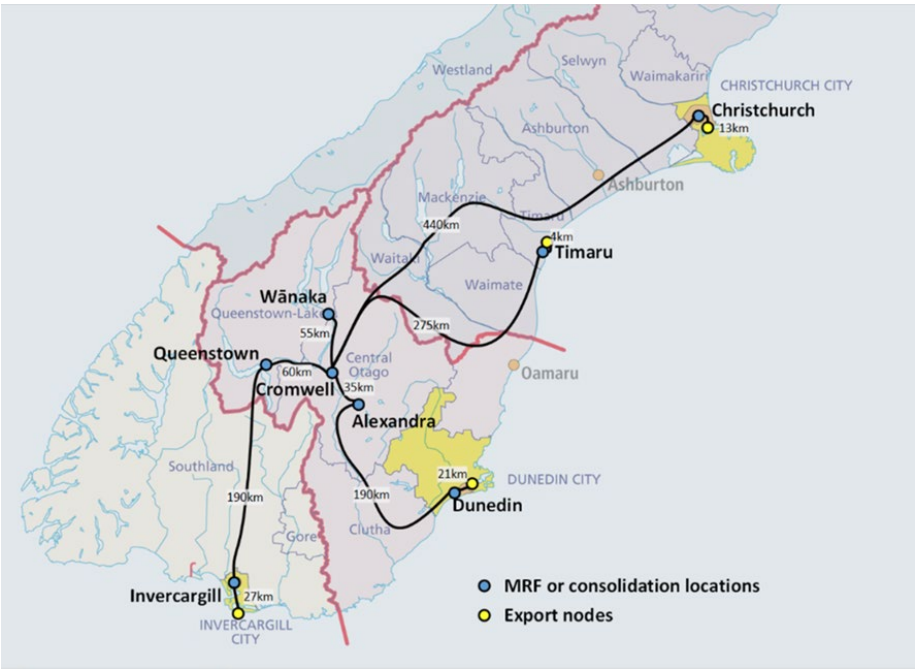
8. Development of a standalone, local MRF has allowed consideration of sites in Gibbston Valley, Cromwell, Luggate and Wānaka, as they could service both Queenstown Lakes and Central Otago

districts without the need to provide for the broader resource recovery needs of the Whakatipu basin.

Processing, consolidation and transport of recyclable materials

9. Once recyclables are sorted, compacted and baled, they are transported to a port for shipping to end markets. Receiving ports (and MRFs) are located in Invercargill, Dunedin, Christchurch and Timaru (CODC currently transport their recyclables to Timaru for processing). The MRFs located in each of these towns could process recyclables from the Queenstown Lakes and Central Otago districts.

10. The following map below shows the location of the ports and out-of-district MRFs relative to Queenstown Lakes. Although the identified MRFs are located far from Queenstown Lakes, and would attract additional transport related emissions and costs, recyclables eventually need to be taken to these port destinations and shipped to markets. The difference lies in the transport of compacted, baled material transportation (post MRF processing) versus the transport of uncompacted material i.e. less efficient transport and consequent emission and cost increases.



11. The attached MRF options assessment has considered several options for the location of a local MRF alongside the option of transporting recyclables to an out-of-district MRF. The Timaru MRF does not currently have capacity to accept recyclables from Queenstown Lakes. Once Dunedin completes building its MRF (due to be operational in July 2026), Dunedin's material will be processed in Dunedin and capacity will become available at Timaru MRF. Queenstown Lakes (and Central Otago) would then have the option of either the Timaru or Dunedin MRF. The MRF in Invercargill does not currently have capacity to process additional material.

12. For the local MRF option, consideration has been given to different types of MRF, from fully automated through to fully manual sorting of materials. Consideration was given to whether or not to enable glass to be processed through the MRF or remain separated. A fully automated MRF, with glass out, has been assumed at this stage as it reduces health and safety risks for workers and reduces labour requirements (noting that staffing the current Glenda Drive facility can be difficult at times).

13. To establish the size and capacity of the local MRF, consideration was given to the combined recyclables tonnage generated by the commercial and residential (Council kerbside collection) sectors in both Queenstown Lakes and Central Otago districts, with volumes projected over 20 years. At these volumes, the combined districts solution requires an automated MRF at the small end of the range e.g. processing capacity of five tonnes per hour.

14. Use of an out-of-district MRF will require sites in Wānaka and Whakatipu to be identified and developed for the consolidation of collected recyclables prior to haulage to an out-of-district processing facility. Once a future organics service is available, consolidation sites will also be required for the short-term storage of kerbside collected organic materials. CODC currently use the Alexandra transfer station for consolidation of material prior to transport of material to Timaru MRF.

15. Queenstown Lakes consolidation options could include:
    - Delaying the redevelopment of the refuse transfer station site at Glenda Drive, Whakatipu and using the existing MRF building
    - Purchasing land in the Gibbston valley (identified during the MRF options assessment) and developing a storage facility
    - Defining a suitable area within the Wānaka refuse transfer station site and/or wider Ballantyne Rd site and developing a storage facility.

Carbon emissions

16. From a carbon emissions perspective, the out-of-district and local MRF options have similar profiles. This is because the recyclable material is eventually transported out of the district for secondary processing.

17. A local MRF option results in sorted, baled materials being transported out of the district after processing, which enables more efficient transport than unsorted, uncompacted recyclables being transported to an out-of-district MRF. The difference in transport emissions is presented below:

Option	Distance from Whakatipu Basin (km)	Total transport emissions over 20 years (tonnes)
Option 1: Ballantyne Road, Wānaka	115	3,600
Option 2: CODC land, Cromwell	60	2,500
Option 3: McNulty Road, Cromwell	60	2,500
Option 5: Gibbston, Whakatipu	50	2,600
Option 6: Out-of-district (Dunedin)	285	5,800

18. Only transport-related emissions have been calculated. The carbon emissions generated from constructing a new local MRF have not be calculated at this stage. The use of an out-of-district MRF avoids these emissions.

19. At this point, the embedded carbon calculations have not been completed to confirm the extent to which they offset transport emissions. This is recommended in the next phase of the investigations for a local build solution.

Phase one assessment

20. The attached 'MRF Options Assessment, August 2024' was completed to consider various MRF options, with this report presenting the conclusions from the two phases of assessment and next steps for both a local and out-of-district MRF option. A decision on the recommended recyclables processing solution will be sought from Council once these next steps have been completed.

21. The assessment of the options occurred in two phases. In phase one, a total of 12 potential sites were identified in Wānaka, Whakatipu, Gibbston and Cromwell areas. The existing MRF site at Glenda Drive was also included. Accessing an out-of-district MRF solution was introduced as a comparison which would not require significant capital investment associated with a local build solution.

22. Of the 12 options considered in phase one, seven were scored. The five options excluded were similar, but inferior to other options put forward, or had significant capital cost risks that could not be mitigated.

23. In phase one, the options were scored using QLDC's multi-criteria analysis tool which has been used for other infrastructure projects. The criteria include whole of life cost, resilience, environment, economics, achievability, risk, consentability, future proofing, downstream economic effects, cultural wellbeing and people. Due to the close scoring between the options, five were taken forward into the phase two assessment. The options assessment can be seen in Table 10, page 16 in the attached 'MRF Options Assessment, August 2024' report.

24. An additional two options were excluded at this point as they had flaws that could not be overcome. The existing Glenda Drive MRF site is too small and therefore unachievable. The Coneburn site was excluded due to the site's height restrictions impacting consentability and achievability.

25. Due to the close scores between the remaining options, a total of five options were taken forward into the phase two assessment. Of these options, four were local options and the other was the out-of-district option.

Phase two assessment

26. Stakeholder engagement took place to inform the assessment and cost refinement in phase two. Stakeholders were asked questions regarding ownership and operating arrangements, timing of site consenting and subdivision development, and other interests in the sites.

27. Stakeholders included: Council Property and Infrastructure staff, Council's Māori Strategy and Partnerships Manager, CODC staff, representatives of property owners, an out-of-district MRF owner and operator, Council's waste services contractor, and potential funding agencies. The outcomes of the engagement were considered in the phase two assessment.

28. The phase two assessment focused on the key risks where uncertainty remained following phase one. These included: achievability, cost control, commercial risk, resilience and sustainability, service delivery and strategic alignment.

29. The following table presents the ranking and score of the various options from the phase two assessment. The scoring was undertaken by key Council staff from waste, property and finance, and was supported by Morrison Low.

Ranking	Option	Description	Score (out of 25)
1	Option 1	Ballantyne Road, Wānaka	18
2	Option 2	CODC land, Cromwell	17
3	Option 6	Out-of-district (Dunedin or Timaru)	16
3	Option 5	Gibbston, Whakatipu	16
5	Option 3	McNulty Road, Cromwell	12

30. The analysis has shown that it is difficult to separately distinguish the options. Minor score changes to any of the criteria result in a shift in the options ranking. Only option 3, Cromwell McNulty Road, scores sufficiently low to rule it out.

31. The highest scoring option is option 1, Ballantyne Road, closely followed by option 2, the CODC land in Cromwell. Both these options are local MRF options and provide the best scores for cost control, commercial risk, resilience and sustainability, and service delivery and strategic alignment. Either site could work for a local MRF but as Ballantyne Road is already owned by QLDC it has an advantage over the CODC land in Cromwell consequently making it the highest scoring local option.

32. Closely following Ballantyne Road and the CODC land in Cromwell came option 5, land in the Gibbston valley. It scored lower due to the current state of development being less advanced than the other sites. Given there are other, more developed (and higher scoring) local options, further consideration of this option is not planned at this stage.

33. Option 6, an out-of-district solution, scored the highest for achievability because this option is already in progress and further towards being operational. There are challenges with this option, such as the need for long-term consolidation and transportation arrangements and the need to confirm and secure a MRF gate fee.

34. The out-of-district solution has a very different cost structure to the local MRF options and as a result is sensitive to different criteria than the local MRF options. It is easy to achieve, has low upfront capital requirements, and has low commercial and financial risk in the short term.

However, longer term the ability to control costs and rely on the availability of this option reduces. For this reason, this option is more suitable as a short to medium term solution only.

Financial assessment

35. A financial model was developed to enable the assessment of whole of life costs for MRF options. Key inputs are:
    - Assessment over a 20-year operating period, with options compared on a Net Present Value (NPV) basis
    - Inflation rate of 3%, discount rate of 5% and interest rate of 5%
    - Inclusion of transport costs for material from Wānaka, Queenstown Lakes and Central Otago, and from the MRF to por
    - Site area of 11,000m^2 and MRF building of 2,400m^2
    - Lease and land values provided by Q Property, a local property specialist.
    - MRF development costs were provided by BJ Scarlet, who builds MRFs
    - Site establishment and building costs have been scaled and inflated from previous work undertaken by WM New Zealand for development of a Whakatipu MRF.

36. The differences in baseline NPV from the highest to the lowest-ranking options are minor, with a spread of only 3.6%. The costs are sensitive to key variables such as the discount rate applied, the volatility of the out-of-district gate fee and transport costs, and unknown site constraints impacting capital costs.

37. Given the close financial outcomes and significant uncertainties in the high-level financial forecasts, no single option stands out as a clear financial leader and are within the margins of error of the analysis.

38. The NPV for highest scoring local MRF option, Ballantyne Road, and the alternative out-of-district option are presented in the table below. This shows the difference in cost structure for these two different types of options. Key cost items are listed in the table.

20-Year NPV ($'000)	**Ballantyne Road**	**Out-of-district**
Operating Costs		
Processing (includes gate fees, staff and consumables)	$3,200	$21,900
Disposal (includes landfilling of contamination and processing losses)	$3,100	$4,700
Transportation (includes consolidation, transport to MRF and transport to port)	$15,400	$24,300
Total 20-year operational cost NPV	**$21,700**	**$50,900**
Capital costs		
Capital Investment (includes MRF building & equipment, consolidation site)	$31,900	$2,800
Combined 20-year NPV	**$53,600**	**$53,700**

Considerations for the local MRF option

39. Ballantyne Road is the highest ranking local MRF option. There are no compelling reasons not to pursue this option. Therefore, further exploration of the site's feasibility is proposed prior to seeking a decision from Council on whether to proceed with construction of a MRF at this site.

40. From a development perspective, Ballantyne Road is the most advanced local MRF option. QLDC own the land and have commenced geotechnical and planning assessments for the site as the land will also be used for the upgrade of the Wānaka refuse transfer station.

41. The site has been purchased with the intention of being used for waste and resource recovery activities. Council has already invested in this site through the land purchase. Building the MRF on the Ballantyne Road site, if it can be done cost-effectively, aligns with this purpose.

42. There are known potential challenges with the Ballantyne Road option. The Ballantyne Road site may be difficult to consent and develop. There are likely to be geotechnical and site contamination challenges to overcome given part of the site was used as a landfill in the past and the site is adjacent to river flats. However, the extent of these challenges and the associated cost to remedy them cannot be estimated without further engineering, environmental and planning investigations. Note, additional costs for the development of this site were included in the cost estimate as a contingency.

43. Further investigation may reveal the costs, geotechnical constraints or planning requirements become prohibitive. There is benefit in having back up options available if this occurs. The CODC land in Cromwell has the second highest score and therefore could be pursued as the 'next best' site. A decision would need to be made quickly if Council wants to secure the CODC land before it is sold.

44. There are existing leaseholders operating at the Ballantyne Road site, Wastebusters and Wānaka Greenwaste and Landscaping Supplies. There is a need to provide direction to these stakeholders regarding Council's intentions for the site and where these leaseholders fit into these plans and where on the site they may continue to operate. These leaseholders have expressed an interest in expanding their resource recovery activities, in particular responding to increasing demand for organics and construction waste diversion. Progressing a masterplan for the whole of the Ballantyne Road site, and accommodating the MRF, would help these leaseholders to plan for their own future investment.

Considerations for an out-of-district MRF

45. While Ballantyne Road is the highest-ranking option overall, the out-of-district option also scores well, particularly as a short to medium term option. In order to give Council more time for the investigation and development of Ballantyne Road, Council could consider a short to medium term out-of-district processing contract. The reliability and cost uncertainty risks that reside with this option long term can be mitigated in a shorter-term contract.

46. The out-of-district MRF option only becomes available once Dunedin has built its new MRF at Green Island, expected to be operational by July 2026. At that time either there will be capacity at the Green Island MRF or there will be freed up capacity at the Timaru MRF.

47. Out-of-district may also become a viable longer-term option if the costs of developing a local MRF become too high or if Council wishes to defer capital investment for example.

Contract Models

48. For the local MRF, there are a number of contractual models available which could enable its successful development. These include:
    - Separate design, build and operations contracts
    - A combined design and build (D&B) contract, with standalone arrangements for operation
    - A combined design, build and operate (DBO) contract
    - A design, build, own, operate and transfer (DBOOT) contract and gate fee contracts.

49. Any of the options are achievable with sufficient timeframes for planning, preparation of detailed specifications and the associated procurement process. The choice of a preferred contract arrangement will depend on which risks Council would like to hold and which to transfer to its contractors. These are best explored in a detailed procurement strategy and tested with the market once uncertainties have been resolved and a decision made around the appetite to accept an out of district processing solution (and for how long this arrangement could be suitable).

50. For the out-of-district MRF option, service contracts would be established for consolidation, transportation and processing of recyclables. Generally these are on a cost per tonne basis, with key variables impacting cost being the term of the agreement and minimum volumes to be managed. Consideration needs to be given to how these arrangements would sit alongside contracts for Council's other waste services (kerbside collections, refuse transfer station operations, etc). As for the local MRF option, these would be captured in a detailed procurement strategy and tested with the market.

Next steps

51. To enable a future informed and robust decision, the following steps are proposed:

52. *Progressing Ballantyne Road local MRF solution*
    The next steps are:
    - Commence engineering, environmental and planning investigations for a new MRF at Ballantyne Road in Wānaka, to enable risks to be understood and quantified.
    - Complete a detailed carbon assessment for local MRF versus out-of-district MRF options including transport.
    - Prepare a detailed procurement strategy. Refinement of contract options and engagement with the market would occur as part of this process. Note, options for design and organisation of enabling works, MRF building and MRF plant and equipment all need to be assessed as well as MRF operation options. Implications for the wider waste contract renewal would be considered alongside the local MRF.
    - Prepare a masterplan for the Ballantyne Road site.

- Consult with mana whenua

53. *Progressing an out-of-district MRF solution*
The next steps are:
    - Undertake further investigations with stakeholders to understand contractual arrangements for an out-of-district solution.
    - Investigate options for transportation and processing QLDC's recyclables at an out-of-district MRF.
    - Prepare a detailed procurement strategy, including refinement of contract options and engagement with the market. Implications for the wider waste contract renewal would be considered alongside the out-of-district MRF solution.
    - Note that the same actions are required if Council considered a short-term out-of-district solution ahead of local MRF development.

54. *Investigate consolidation arrangements*
The next steps are:
    - Explore consolidation options for both the Ballantyne Road and out-of-district options to ensure assumptions in the financial model are valid and suitable sites can be located and secured.

Analysis and Advice | Tatāritaka me kā Tohutohu

55. This report identifies and assesses the following reasonably practicable options for assessing the matter as required by section 77 of the Local Government Act 2002.
    - Option 1: Do nothing.
    - Option 2: Proceed with a hybrid approach to keep the local and out-of-district options open.
    - Option 3: Proceed with development of the Ballantyne Road, Wānaka site as the preferred location.
    - Option 4: Proceed with an out-of-district option as the preferred solution.

56. **Option 1: Do nothing**
This option would involve continuing to operate, maintain and repair the existing Glenda Drive MRF.

Advantages:
- Avoids capital costs for development of a new MRF and consolidation facilities, including site establishment, building and equipment.
- Avoids construction-related carbon emissions from building a new MRF.
- Avoids carbon emissions from transporting loose recyclables to an out-of-district MRF.

Disadvantages:
- High operating and maintenance costs to continue operating Glenda Drive MRF.
- No back up for Glenda Drive MRF; if it fails the recyclables would need to be landfilled.

- Glenda Drive MRF is too small to accept CODC's recyclables. QLDC would not be able to meet its commitment to CODC to accept their recyclables long term.
- Delays upgrades to Queenstown refuse transfer station that will expand onto the MRF site.

57. **Option 2: Proceed with a hybrid approach to keep the local and out-of-district options open**
This option would involve proceeding with a combination of out-of-district processing (short to medium term) and development of a local MRF, if financially viable. Out-of-district processing would be available as a long-term option if the local MRF option was not financially viable. This option would mean endorsing the next steps listed for both options in items 51-53 above.

Advantages:
- Provides time for Council to fully explore Ballantyne Road.
- Provides resilience of a local MRF long term.
- Exposure to third-party fees, for transportation and MRF, restricted to the short-medium term.
- Out-of-district processing remains a long-term option, with contracts having been established to continue this arrangement beyond the short term.
- Certainty on when Glenda Drive MRF will close, enabling the transfer station upgrades to be progressed.
- Defers capital expenditure.

Disadvantages:
- Additional effort required to progress both options.
- Requires consolidation arrangements to be established for Wānaka, that will not be required long term for the local MRF option.
- Delays the decision on the use of Ballantyne Road for the MRF, with a longer period of uncertainty for other site users.

58. **Option 3: Proceed with development of the Ballantyne Road, Wānaka site as the preferred location.**
This would involve developing only the local MRF at Ballantyne Road. The Glenda Drive MRF would continue to be used until Ballantyne Road is completed.

Advantages:
- Provides resilience of a local MRF long term.
- Certainty that Glenda Drive MRF will close, providing certainty regarding what transfer station upgrades can be progressed but not necessarily the timing.
- Provides certainty that consolidation arrangements will be required in Queenstown.
- Provides certainty to CODC that a local MRF will be built, but not necessarily the timing.
- Provides clear direction for Ballantyne Road, enabling a masterplan to be developed and giving certainty to other site users.

Disadvantages:
- Reducing time to complete further assessments on Ballantyne Road and make the decision to proceed with its construction.

- Avoids exposure to third-party fees for transportation and MRF.
- Uncertainty how long Glenda Drive will be used as a MRF.
- Increases pressure to make the Ballantyne Road site work, even if costs are high.
- Reduces Council's options if Ballantyne Road is unfeasible; backup local sites would need to be considered.
- Council exposure to large capital cost increases, both for site enabling works and the MRF itself.
- Building another MRF when there are existing MRFs available out-of-district, with associated cost and carbon emissions that do not need to be incurred.

59. **Option 4: Proceed with an out-of-district as the preferred solution**

This option would mean negotiating long-term contracts for transportation and processing of recyclables at an out-of-district MRF. The Glenda Drive MRF would cease operation as soon as an out-of-district MRF solution was available (expected July 2026). A local MRF would no longer be pursued.

Advantages:

- Avoids large capital expenditure for Council and associated risk of capital cost increases.
- Provides certainty on when Glenda Drive MRF will close and no longer requires the MRF to be considered for the Ballantyne Road site development, enabling transfer station upgrades to be progressed for both sites, giving certainty to QLDC and site users.
- Cost and carbon efficiency from utilising an existing MRF.

Disadvantages:

- Long-term vulnerability to third-party fee increases, for transportation and MRF.
- Requires long-term consolidation arrangements to be established for both Wānaka and Queenstown.
- Commits CODC to long-term out-of-district processing as well.
- Vulnerable to transport corridors being cut for an extended period following a natural disaster. Recyclables would need to be landfills until re-established.
- Difficult to revert back to a local MRF option once a commitment to out-of-district processing is made, particularly given the Glenda Drive and Ballantyne Road sites will not be available once upgraded.

60. This report recommends **Option 2** for addressing the matter because it gives keeps Council's options open and provides sufficient time to undertake the additional assessment required to confirm the viability of Ballantyne Road without having to continue to operate the Glenda Drive MRF, for which there is a risk of catastrophic failure the longer it operates.

Consultation Process | Hātepe Matapaki

Significance and Engagement | Te Whakamahi I kā Whakaaro Hiraka

61. This matter is of low significance, as determined by reference to the Council's Significance and Engagement Policy because the report provides an update on progress and no decision is required from the Committee.

62. The persons who are affected by or interested in this matter include: lessees of the Ballantyne Road site (Wastebusters and Wānaka Greenwaste and Landscaping Supplies), Central Otago District Council, owners and operators of Timaru and Dunedin MRFs, waste and recycling operators.

63. The Council will consult with affected parties as part of the next stage of investigations for the Ballantyne Road MRF option, prior to a decision to proceed with development. Affected parties have been identified and initial engagement has occurred.

Māori Consultation | Iwi Rūnaka

64. The Council will consult with mana whenua as part of the next stage of investigations for the Ballantyne Road MRF option. Mana whenua were included in the early engagement for the MRF options assessment, but the report and its recommendations are yet to be shared.

Risk and Mitigations | Kā Raru Tūpono me kā Whakamaurutaka

65. This matter relates to the Business Continuity risk category. It is associated with RISK10006 Ineffective planning for property and infrastructure within the QLDC Risk Register. This risk has been assessed as having a high residual risk rating.

66. The approval of the recommended option will allow Council to implement additional controls for this risk. This will be achieved by progressing investigations into out-of-district MRF access whilst further investigations are undertaken to confirm the feasibility of the Ballantyne Road MRF option. The risk will be avoided once out-of-district MRF access is confirmed possible and approved by Council, and a decision is made by Council on whether or not to proceed with development of the Ballantyne Road MRF.

Financial Implications | Kā Riteka ā-Pūtea

67. The development of the MRF is included in the 2024/34 Long Term Plan.

68. The Long Term Plan includes budget for the 'New Waste Facilities' that is inclusive of work required to develop a MRF, upgrade the Whakatipu (Glenda Drive) refuse transfer station and development of a consolidation area for recyclables in Whakatipu.

69. The Long Term Plan budget is shown below, noting expenditure occurs across the first six years of the Long Term Plan.

Year	Yr 1 24/25	Yr 2 25/26	Y3 26/27	Yr 4 27/28	Yr 5 28/29	Yr 6 29/30	Total Yrs 1-6
New Waste Facilities	$1,481	$6,009	$18,507	$26,005	$14,806	$3,701	$70,509

Council Effects and Views | Kā Whakaaweawe me kā Tirohaka a te Kaunihera

70. The following Council policies, strategies and bylaws were considered:
- Procurement Policy and Guidelines
- Risk Management Policy
- Waste Management and Minimisation Plan 2018
- Climate and Biodiversity Plan 2022-25
- 2021-31 Waste Management and Minimisation Asset Management Plan
- 2024-34 Long Term Plan

71. The recommended option is consistent with the principles set out in the named policies.

72. This matter is included in the Long Term Plan 2024-2034.

Local Government Act 2002 Purpose Provisions | Te Whakatureture 2002 o te Kāwanataka ā-Kīaka

73. Section 10 of the Local Government Act 2002 states the purpose of local government is (a) 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. Ongoing delivery of kerbside recycling supports the well-being of our communities and the provision of a replacement MRF (in-district or out-of-district) supports delivery of this service. This report presents progress towards identifying a replacement MRF . As such, the recommendation in this report is appropriate and within the ambit of Section 10 of the Act.

74. The recommended option:
- Can be implemented through current funding under the Long Term Plan and Annual Plan;
- Is consistent with the Council's plans and policies; and
- Would not significantly alter the intended level of service provision for any significant activity undertaken by or on behalf of the Council or transfer the ownership or control of a strategic asset to or from the Council.

Attachments | Kā Tāpirihaka

A	MRF Options Assessment, Morrison Low, August 2024

MRF Options Assessment

Queenstown Lakes District Council

August 2024

Document status

Job #	Version	Written	Reviewed	Approved	Report Date
2918	Draft	S. Borowy	A. Grace	A. Grace	16 May 2024
2918	Draft	S. Borowy	A. Grace	A. Grace	12 June 2024
2918	Draft	S. Borowy	A. Grace	A. Grace	16 July 2024
2918	Final	S. Borowy	A. Grace	A. Grace	28 August 2024

Contents

Tables

Figures

Review summary

Queenstown Lakes District Council (QLDC or Council) has a Material Recovery Facility (MRF) for processing of mixed recyclables collected from residents and businesses throughout the district. The MRF is located at 110 Glenda Drive, Frankton. The facility is no longer fit for purpose and a new processing solution is required for the recyclables collected in the district, which is reliable, flexible, and adaptable to future demands.

Council recently purchased land adjacent to the Wanaka transfer station on Ballantyne Road, which offers another site that could be considered for the MRF. However, this opportunity hasn't been tested against other sites previously considered.

Council commissioned Morrison Low to undertake an options assessment and recommend a way forward.

Assessment summary

The MRF options assessment considered 12 options in the first assessment round, phase 1, and five options in the second assessment round, phase 2, using defined criteria and scoring method. The initial focus of the assessment was to determine the best site for a new MRF to process mixed recyclables from the QLDC and CODC areas. An out of district option was introduced as a comparison which would not require significant capital investment. Of the 12 options considered in phase 1, only seven were scored. The options excluded were similar, but inferior to other options put forward, or had significant capital cost risks that could not be mitigated. After scoring the options, two more options were excluded from further assessments, including the exclusion of the existing Glenda Drive MRF.

Whole of life costs were assessed in phase 1, then refined in phase 2. Stakeholder engagement took place at the end of phase 1 to inform options assessment and cost refinement in phase 2. Ownership and operating models were also considered for the sites ahead of phase 2 scoring.

The phase 2 assessment focussed on five key risk areas. The table on the following page shows how each of the five remaining options were assessed in phase 2. The options assessment in phase 2 presented the following ranking based on weighted scores:

- 1st - Option 1, Wanaka, Ballantyne Road (weighted score of 18)
- 2nd - Option 2, Cromwell CODC (weighted score of 17)
- 3rd - Option 6, out of district (weighted score of 16)
- 3rd - Option 5, Gibbston Valley (weighted score of 16)
- 5th - Option 3, Cromwell McNulty Road (weighted score of 12)

The highest scoring option was option 1, Wanaka Ballantyne Road, with 18 points closely followed by option 2 Cromwell CODC on 17 points. Both these options provide the best scores for cost control risk, commercial risk, resilience and sustainability risk and service delivery and strategic alignment. Option 1, Wanaka Ballantyne Road scored slightly better because QLDC already owns the land.

Option 6 out of district, scored the highest for achievability because this option is already in progress and further towards being operational. There are some challenges with this option, such as procuring a transport contract and securing the gate fee.

The analysis has shown that it is difficult to separate the options. Minor changes to any of the scores result in a shift in the options ranking. Only option 3, Cromwell McNulty Road, scores sufficiently lower ruling it out. It is recommended that this option is excluded from future MRF planning processes.

Table 1 Phase 2 assessment scoring

#	Criteria	Weighting	Option 1 Wanaka - Ballantyne Road	Option 2 Cromwell - CODC site next to transfer station	Option 3 Cromwell - 147 McNulty Rd	Option 5 Gibbston Valley - The Yards (Victoria Flats Road)	Option 6 Out of district - Dunedin
1	Achievability	20%	3	3	3	2	4
2	Cost control risk	20%	3	3	2	3	2
3	Commercial risk	20%	3	3	2	3	5
4	Resilience and sustainability risk	20%	5	4	3	4	2
5	Service delivery and strategic alignment risk	20%	4	4	2	4	3
	Total - weighted scores		**18**	**17**	**12**	**16**	**16**
	Rank - weighted scores		1	2	5	3	3

Financial summary

The table on the following page provides the financial summary of the five options considered in phase 2.

While the financial analysis provides a detailed comparison of the operating costs associated with the different options, several potential risks and limitations must be considered to understand the broader implications.

Key variables that introduce uncertainty to the costs, that have been explored include the discount rate, out of district gate fee, fuel costs, residual land values and capital costs for the in-district MRF options. To assess the impacts of these volatile factors, sensitivity analysis was undertaken, which showed all options had a degree of sensitivity to changes in key variables.

Given the close financial outcomes and significant uncertainties in the high-level forecasts, no single option stands out as a clear financial leader. The differences in baseline NPV from the highest and lowest-ranking options are minor, with a spread of only 3.6%, contributing to the variability observed in the sensitivity analysis. Subsequently, the determination of a final option requires significant weight on non-financial factors.

Table 2 Phase 2 Results - Discounted

20-Year results summary ($'000)	Wanaka Ballantyne Road Option 1	CODC site next to landfill Option 2	147 McNulty Road Option 3	Gibbston Valley Option 5	Out of district Option 6
Operational Costs					
Processing Costs	$3,200	$3,200	$3,200	$3,200	$21,900
Disposal Costs	$3,100	$3,100	$3,100	$3,100	$4,700
Transportation Costs	$15,400	$11,500	$11,500	$11,800	$24,300
Total	**$21,700**	**$17,800**	**$17,800**	**$18,100**	**$50,900**
Investment & Facility Costs					
Capital Investment	$38,800	$48,800	$4,800	$44,700	$4,800
Residual Value	($6,900)	($12,000)	($2,000)	($10,100)	($2,000)
Leasing Costs	$0	$0	$32,900	$0	$0
Total	**$31,900**	**$36,800**	**$35,700**	**$34,600**	**$2,800**
Combined Total/NPV	**$53,600**	**$54,600**	**$53,500**	**$52,700**	**$53,700**
Total Tonnes	*180,000*	*180,000*	*180,000*	*180,000*	*180,000*
Cost per Tonne	*$298*	*$303*	*$297*	*$293*	*$298*
Rank	**3**	**5**	**2**	**1**	**4**

Contract options

There are a number of contract options available which could enable the development of a successful MRF. These include separate design, build and operations contracts (also know as design-bid-build or DBB), combined design and build contracts (DB), combined design, build and operate contracts (DBO), design build, own operate and transfer contracts (DBOOT, also known as BOOT) and gate fee contracts (with and without a back-to-back lease).

For option 6, out-of-district, the gate fee contract is the most likely arrangement. For option 3, Cromwell McNaulty Road option, the most likely arrangement is a site lease with either a gate fee contract or DBOOT arrangement.

For an in-district MRF, any of the contract options are achievable with sufficient timeframes for planning, preparation of detailed specifications and the procurement process. The choice of a preferred contract arrangement will depend on which risks council would like to hold and which to transfer to its contractors. These are best explored in a detailed procurement strategy, then further explored with the market. The contract options will be narrowed down over time, but the final model may not be known until it is negotiated with QLDC's selected contractor(s).

Recommended way forward

Out of district

Option 6, out of district has a very different cost structure to the in-district options. It is sensitive to different criteria than the in-district options. It is easy to achieve and has low commercial and financial risk in the short term. However, longer term the ability to control costs and rely on this option being available reduces. For this reason, this option is preferred as a short to medium term solution only.

The out of district MRF options only become available once Dunedin has built its new MRF at Green Island. Either there will be capacity at the Green Island MRF or there will be freed up capacity at the Timaru MRF, which Dunedin (and Central Otago) are using short-term while their MRF is built. The Green Island MRF is expected to be operational by July 2026.

Ballantyne road

The remaining options are the three in-district options. Of these, option 1, Wanaka Ballantyne Road, scores highest. It is the option that is most advanced from a development perspective – QLDC own the land and have commenced geotechnical and planning assessments for the site (because it will also be used for an upgraded Wanaka transfer station). The site has been purchased with the intention of being used for waste and resource recovery activities. Council has already invested in this site through the purchase of the land. Building the MRF on this site, if it can be done cost-effectively, aligns with this purpose. There are no compelling reasons not to pursue this as the preferred in-district MRF option and therefore it is recommended the development of this site continues to be progressed.

There are known challenges with the Ballantyne Road option and the additional costs for the development of this site have been included in the estimate as a contingency. The Ballantyne Road site may be difficult to consent and develop. There are likely to be geotechnical and site contamination challenges to overcome given part of the site was used as a landfill in the past and the site is adjacent to river flats. However, the extent of these challenges and the associated cost to remedy them cannot be estimated without further engineering, environmental and planning investigations. These investigations would be required for any site being considered for a new MRF, and what might be uncovered during investigations remains unknown for any site. Alongside these investigations, stakeholder mapping and early engagement would also need to get underway.

Back-up options

Further investigation may reveal the costs, geotechnical constraints or planning requirements become prohibitive. There is benefit in having back up site options available if this occurs. Option 2, Cromwell CODC has the second highest score and therefore is recommended as the back-up site. Out of district may also become a viable long-term option if the costs of developing an in-district MRF become too high or if QLDC wishes to defer capital investment to future years. On balance, combining both capital and operating costs, the in-district and out of district options have similar cost profiles. It is recommended that long term use of an out of district, while not ideal, remain as a back-up option for QLDC.

Consolidation sites

All options will require some consolidation of material prior to haulage to the MRF – both in-district and out-of-district options. For Ballantyne Road, consolidation would only be required by QLDC in Queenstown, while out-of-district would require consolidation in both Wanaka and Queenstown. Short-term options for consolidation could include:

- Redevelopment of Glenda Drive could be delayed and the MRF used for consolidation in Queenstown.
- Land in the Gibbston Valley could be purchased and used for this purpose.
- There may be parts of Wanaka transfer station site that can be made available.
- There may be commercial land or buildings that can be leased for consolidation.

It is recommended that all these options are explored in the next phases of MRF planning.

Note, CODC currently use their Alexandra transfer station for consolidation of material prior to haulage out of district.

Recommended next steps

Based on the recommendations above, the next steps are listed below. The actions fall within three workstreams.

Progressing in-district MRF (Ballantyne Road and back up)

- Commencing engineering, environmental and planning investigations for a new MRF at Ballantyne Road in Wanaka, to enable risks to be understood and quantified.
- Complete a detailed carbon assessment for in-district versus out of district options including transport.
- Prepare a detailed procurement strategy for the in-district and out of district MRF, as well as wider waste contract renewal. Refine contract options and engage with the market as part of this process. Note, options for design and organisation of enabling works, MRF building and MRF plant and equipment all need to be assessed as well as MRF operation options.

Securing short-medium term out of district solution (transportation and processing)

- Undertake further investigations with Timaru District Council and Dunedin City Council (or EnviroNZ) to understand contractual arrangements for a short-medium term out of district solution.
- Procuring contracts for transportation and processing QLDC's recyclables at an out of district MRF. Noting these are relatively simple services to procure.

Confirming consolidation arrangements (for both Wanaka Ballantyne Road or out of district)

- Exploring consolidation options for both the Wanaka Ballantyne Road, and out of district options to ensure assumptions in the financial model are valid and suitable sites can be secured.
- Confirming short-term recyclables consolidation arrangements, within the Queenstown District or with CODC at Alexandra.

1 Introduction

Queenstown Lakes District Council (QLDC or Council) has a Material Recovery Facility (MRF) for processing of mixed recyclables collected from residents and businesses throughout the district. The MRF is located at 110 Glenda Drive, Frankton. The facility is no longer fit for purpose and a new processing solution is required for the recyclables collected in the district, which is reliable, flexible, and adaptable to future demands.

Council has been exploring options for a replacement for the ageing MRF since at least as early as 2017 and has previously assessed various potential MRF site options, which have focussed primarily on locations in the Whakatipu basin. These sites have also included infrastructure for a broad resource recovery park for the district which could support the wider region. Council recently purchased land adjacent to the Wanaka transfer station on Ballantyne Road, which offers another site that could be considered for the MRF. However, this opportunity hasn't been tested against other sites previously considered.

Council has commissioned Morrison Low to undertake a rigorous options assessment and recommend a way forward that considers:

1. Optimal MRF site location based on where recyclables are generated in the Queenstown Lakes and neighbouring Central Otago districts.
2. MRF ownership and operations structures.
3. MRF plant and equipment required to meet current and future demand and potential changes in feedstock over time.
4. Financial and commercial considerations, including funding and commercial property considerations.

2 Methodology

This options analysis project has been split into two phases:

- Phase 1: Assessment of MRF location options
  - Material flows including material inputs, material outputs and anticipated growth over twenty years based on population and economic growth.
  - MRF site concept plan developed by MRF design subcontractor BJ Scarlett.
  - Identification of site options to be assessed from previously considered sites and new site options using knowledge from Q Property.
  - Assessment approach and development of criteria in workshops online and in person.
  - Options assessment in workshops in person.
  - Draft report delivered and feedback received from the Council team.
- Phase 2: Commercial elements
  - Further assessment of shortlisted sites.
  - Stakeholder engagement and feedback.
  - Site specific concept plan developed by MRF design subcontractor BJ Scarlett.
  - Financial modelling.
  - Ownership and operating model options.
  - Risk assessment.
  - Commercial and financial considerations in workshop in person.
  - Preparation of review summary and review in an online workshop.
  - Preparation of final report and review in an online workshop.
  - Deliver final report.

3 Strategic context

The strategies and plans that provide the strategic drivers for the development of a new Queenstown MRF are outlined in this section.

3.1 Waste Management and Minimisation Plan

Council is required to develop a Waste Management and Minimisation Plan (WMMP) and review this every six years. The current WMMP was prepared in 2018 and will be reviewed over the next twelve months to align with the Te rautaki para Waste Strategy 2023. The current WMMP vision is:

'Towards zero waste and a sustainable district'

The action plan contained in the 2018 WMMP has three activity areas:

1. Waste Reduction – Reducing waste at source.
2. Resource Recovery – Diverting waste from landfill.
3. Waste Disposal – Collecting, transporting and disposing of waste.

The following actions are relevant to this project:

Action 2.1 states that Council will 'Provide resource recovery (and waste disposal) facilities that optimise separation of divertible material in Wanaka and Whakatipu'.

Action 2.10 state that Council will 'Review and provide upgrades to the layout and operation of resource recovery and waste disposal facilities to optimise resource recovery and improve capacity'.

3.2 Climate and Biodiversity Plan 2022 – 2025

The QLDC Climate and Biodiversity Plan has 3 goals:

1. **Biodiversity** – The mauri (life force or essence) of our ecosystems is protected and restored. Indigenous biodiversity is regenerated resulting in a deafening dawn chorus.
2. **Adaptation** – Queenstown Lakes is a place that is ready and prepared to adapt to a changing climate resulting in disaster defying resilience.
3. **Mitigation** – Our district reduces its greenhouse gas emissions by 44% by 2030 and achieves net-zero greenhouse gas emissions by 2050 resulting in zero carbon communities.

To reach these goals Council has the following commitments, which are relevant to this options assessment:

- We are committed to zero waste.
- Our transport network is low-emission.
- We work together to change the way we travel.
- We lead the way with low carbon infrastructure and buildings.

3.3 Asset Management Plan

The current Council waste management and minimisation asset management plan 2021-2031 identifies a number of key issues which are also relevant to this project, which are contained in the table below.

Table 3 QLDC Asset Management key issues and implications

Key issues	Implications	Refer to AMP and Infrastructure Strategy sections
1. Facilities at end of life and not fit for purpose.	The Wanaka and Queenstown Transfer Stations and the Queenstown MRF are operating beyond their intended design life. They are therefore requiring significant ongoing building and grounds maintenance to enable their continued operation ahead of their upgrade (identified in the 2021 Long Term Plan (LTP)). There is a risk of extended service outages should the existing facilities fail in the interim.	Section 5.10 Asset Renewal Programme
2. Ongoing asset equipment issues at both Queenstown and Wanaka Transfer Stations and Queenstown MRF.	This is linked to the above key issue but related to the equipment within the facilities. The equipment in the transfer stations and MRF is worn out and the facilities are processing higher volumes than they were originally designed to take. They are being operated beyond their useful life while Council designs, consents and constructs new facilities. There are regular breakdowns and high maintenance costs (including regular component replacements).	Section 5.6 Capacity and Performance
3. Supply chain issues with commodity market (i.e. glass and mixed recycling contamination rates).	Glass and mixed recycling is extremely sensitive to contamination (less than 1%), so it is necessary to ensure that the district minimises the amount of non-glass material placed in the glass and mixed recycling bins. Continued education is a key focus of the service going forward to ensure the material collected can be recycled.	Section 3.3 Current Demand for Waste Services
4. Development of new Kimiākau Resource Recovery Hub	The development of new recycling, recovery and treatment facilities is to support Council's long-term waste minimisation targets and replace aging transfer station and MRF assets. The facility will be integrated with its surroundings with a proposed future Environmental Learning Park component to connect the community with the facility.	Section 5.11 Asset Development Programme and Section 4.11 Zero Waste Programme in the 2021 Infrastructure Strategy
5. Long term viability of the Victoria Flats Landfill with surrounding residential development.	The Victoria Flats Landfill is located 17km from Frankton and is surrounded by rapid residential development. Future neighbours may be less tolerant to an operational landfill which may risk the ability to re-consent the site when the existing consents expire. This would impact the future viability of this landfill and Council may have to transport waste further away, potentially outside the Otago Region.	Section 3.5 Meeting Future Demand (provision)

3.4 Long Term Plan

The QLDC 2021-2031 long term plan (LTP) signalled that due to population growth and subsequent volume increases the demand on the district's ageing recycling and waste transfer station plant and infrastructure means they are no longer fit for purpose. The LTP stated that minor upgrades of these facilities had been taking place and early design work on a new recycling facility was started in 2021. The LTP allocated $35 million capital expenditure between 2021 and 2026 for new Whakatipu waste facilities including a new MRF, which was based on the concept design from WM New Zealand Ltd.

Council have deferred adoption of its next LTP from June to September 2024. It is anticipated that the next LTP updates the investment requirements for the new MRF, based on this options assessment. A provisional budget of $70M[1] has been allocated for waste facilities across the district in the draft QLDC 2024-2034 Long Term Plan.

[1] QLDC_Long_Term_Plan_Consultation_Document_2024-2034_WEB.pdf (ehq-production-australia.s3.ap-southeast-2.amazonaws.com)

4 Current state

Council's current MRF is located at 110 Glenda Drive, Frankton, next to Council's transfer station. The building was constructed in 2007 and a Build-Own-Operate-Transfer (BOOT) contract was awarded to Smart Environmental Limited to install the MRF equipment inside the building and operate the MRF for a 10-year period. This contract was subsequently extended to align with the expiry of other waste management contracts and when handed back to Council in 2019, the MRF was nearing end of life and had limited capacity.

In 2019, a new contract for solid waste services was awarded to WM New Zealand for an initial term of 7.5 years with the options to extend three times by 2.5 years, for up to 15 years. This contract included the ongoing operation of the MRF until such time as a new MRF could be constructed, which was expected to be operational in 2-3 years, by June 2022. Kerbside collection changes meant that glass was separated from mixed recyclables, reducing the volume of material received at the MRF and wear and tear on the equipment from the abrasive glass. This has helped the MRF to remain operational.

Mixed recyclables from the Central Otago District Council (CODC) were processed at the Glenda Drive MRF up until 2019. However, due to the deteriorating condition of the MRF and prioritisation of Council recyclables processing, the MRF was no longer able to process CODC recyclables at peak times. CODC had to landfill their recyclables when this occurred. CODC now have a contract in place to take their recyclables to Timaru District Council's Redruth MRF (via their contractor EnviroNZ), until a new Queenstown MRF is constructed.

Now, nearly five years later (in May 2024), Council are still processing mixed recyclables from kerbside collection and the commercial sector through the Glenda Drive MRF. WM New Zealand's operating costs have risen steeply from $540,000 in 2018/19 to $880,000 in 2023/24 (an increase of 60%), while tonnes processed have decreased by 11%. Council have had to invest $1.3 million in major maintenance and equipment replacements in the last five years, over and above the planned maintenance included in WM New Zealand's operating cost. However, the MRF remains at imminent risk of catastrophic failure. If that were to occur, recyclables would have to be landfilled at a current disposal rate of $200 per tonne, until a new MRF were constructed. There are no other MRFs in the lower South Island that have the capacity to accept QLDC's recyclables currently.

Table 4 Recyclables processing costs, including Council and commercial mixed recyclables and glass.

Year	2019/20	2023/24
Tonnes processed[1]	5,300	4,700
Rate ($/tonne)	$102	$183
Total	$540,000	$880,000
QLDC additional R&M	$580,000	$259,000

Notes:

1. Includes the processing of Council and commercial glass and mixed recyclables.
2. Total additional repairs and maintenance cost over five years, $1,310,000.

4.1 History of MRF development project

2018 to 2020

Council have been investigating options for upgrading its MRF since at least 2017. Upgrades to the MRF were considered alongside upgrades to Council's other resource recovery facilities, the Queenstown and Wanaka transfer stations.

A business case was prepared in 2018 to look at options for upgrading all three facilities. The assumption at the time was that the Queenstown MRF and transfer station would be co-located at one fully integrated and purpose-built, modern Resource Recovery Hub (RRH, also referred to as the Kimiākau Zero Waste Community Eco Park or CEP). The facility would accommodate expanded resource recovery activities including construction and demolition waste sorting, consolidation for kerbside-collected organics, a reuse shop, education centre and community garden. It was identified that the current Glenda Drive site was too small to accommodate both a new transfer station and a new MRF and therefore alternative sites were considered that were large enough to accommodate the full RRH. As the site would be replacing the Queenstown transfer station, sites were considered within the Whakatipu Basin so that customers would not have to travel significantly further than the Glenda Drive site.

Through the business case, land at QLDC's wastewater treatment plant (WWTP) at the Shotover Delta was selected as the preferred option, with all resource recovery activities relocating to the Shotover Delta and the Glenda Drive land sold. Note, the other option shortlisted at the time was to retain Glenda Drive for the RTS and build non-customer facing facilities (like the MRF and glass handling bunkers) at Victoria Flats landfill. Having resource recovery facilities spread across two sites and not being able to sell Glenda Drive meant that this option had a higher cost than a consolidated approach at the Shotover Delta site alone and was ruled out for this reason.

Following further investigation into the Shotover Delta site and associated development costs, the business case was updated in 2020. Capital costs rose from $18.5 million to $39.3 million as a result of these investigations.

2021 to 2022

Through the solid waste procurement process in 2018, WM New Zealand were appointed to develop a concept design for the Shotover Delta RRH and it was intended that this would be followed by WM New Zealand overseeing construction of the RRH. WM New Zealand completed their concept design in December 2021, accompanied by a further increase in capital costs to $55.6 million (the draft QLDC 2024-2034 Long Term Plan budget for waste facilities has been increased to $70M to account for additional costs for the Shotover ponds reclamation work). This exceeded Council's 2021 LTP budget by $20 million and the project was put on hold, while further value engineering could be undertaken.

Concurrent with the WM New Zealand concept design work, Council appointed Tonkin + Taylor for the consenting of the RRH. This process raised several questions around the Consentability of the Shotover Delta site. Council were also undertaking further analysis of their wastewater treatment needs and identified that the oxidation ponds would continue to be needed and therefore could not be decommissioned to free up land for the RRH. In early 2022, the option of Shotover Delta for the RRH was abandoned.

In April 2022, Tonkin + Taylor undertook further assessment of alternative sites in the Whakatipu Basin. Despite assessing over 10 sites, no suitable alternatives were identified.

Today

QLDC is now broadening the search for a site for its MRF and is considering sites outside the Whakatipu Basin, including sites outside the Queenstown Lakes District. It is also decoupling the MRF development from the Queenstown transfer station upgrade. Glenda Drive will continue to be used as the Queenstown transfer station site and as a customer interface for the public to drop off recyclables, but the MRF will need to be moved to another location because the site is not big enough to accommodate the MRF as well.

Council recently purchased land adjacent to the Wanaka transfer station, which is partly underlain by the Council's closed Wanaka Landfill. There are parts of this land parcel that may be able to be used for a new Queenstown MRF.

Decoupling MRF development from other resource recovery infrastructure also broadens the potential locations for a MRF, including the option of siting the MRF in Cromwell (which is part of the Central Otago District) or accessing an out-of-district MRF in Christchurch, Timaru, Dunedin or Invercargill, noting that there would still need to be a local customer interface in Queenstown and Wanaka for the public to drop off recyclables.

4.2 Broader resource recovery infrastructure needs and co-location

QLDC currently owns the following waste infrastructure:

- Queenstown transfer station, located at 110 Glenda Drive, Frankton
- Queenstown MRF, also located at Glenda Drive
- Wanaka transfer station, located at the corner of Riverbank Road and Ballantyne Road, Wanaka
- Victora Flats landfill, located at Victoria Flats Road, Gibbston

Note, glass consolidation bunkers are located at both the Wanaka and Queenstown transfer stations, with consolidated material transported directly from these bunkers to Christchurch (and on to Visy in Auckland).

There are also facilities provided by the private sector and community enterprise sector that complement Council's facilities. Some of these are co-located on Council sites used for waste management purposes. Wastebusters operate a resource recovery centre on a land parcel leased at the Wanaka transfer station site. Wanaka Greenwaste lease a portion of the land adjacent to Wanaka transfer station, which Council recently purchased. Council's transfer stations are used by WM New Zealand as depots for Council's kerbside collection vehicles and their own commercial vehicles.

In order to reduce waste and improve the circularity of resource use in the Queenstown Lakes District, Council is looking to expand the services provided to the community, either on its existing sites or on sites provided by the private sector or not-for-profit sector. These include:

- Consolidation of kerbside collected organics material, prior to transportation to a future organics processing facility in the Central Otago District.
- Sorting and storage of construction and demolition materials, prior to transportation to end markets.
- Development of enhanced customer recycling drop off, a reuse store, education centre and community gardens in Queenstown.

While there will be the need to accommodate these activities within QLDC's network of waste and resource recovery facilities and there are efficiencies from complementary activities to be co-located, this can be decoupled from the identification of a site for the MRF. The ability to identify a site for the MRF that could also accommodate these activities would be beneficial, but not fundamental to site selection.

4.3 Working with other councils

QLDC have always worked closely with neighbouring CODC on the provision of waste infrastructure servicing the two districts. CODC used Council's MRF up until 2021 and dispose of waste at Victora Flats Landfill, which is owned by Scope Resources Ltd, but on QLDC land. The recent Otago Region Waste Assessment[2] identifies a key issue, being that the inland sub-region (Queenstown/Central Otago) lacks a full facility resource recovery park with large capacity. There has been an informal agreement between the two councils that CODC will develop the organics processing facility for the two districts, while QLDC will develop the next MRF. We have included CODC's mixed recyclables tonnes in the volumes to be processed at the new MRF. One of the options considered throughout this assessment is for a new MRF to be located partly on CODC transfer station land and partly on adjacent land (The Pines) which is due to be released for subdivision over the coming years. CODC have signalled that they are open to discussing all possible land ownership and operating models, should this option be taken further into consideration.

There are other councils that may need access to a MRF in future:

- WasteNet Southland (Invercargill, Southland and Gore) currently use a MRF in Invercargill, but this is nearing end of life and the contract expires in June 2027. There may be benefits from economies of scale in developing a MRF that includes WasteNet Southland tonnes, however transporting recyclables to Queenstown or Central Otago may be inefficient given the ports for exporting sorted recyclables are in Christchurch, Dunedin, Invercargill or Timaru.
- Clutha District and Waitaki District are upgrading their recycling services and will need to access a MRF. It is likely that existing MRFs in Dunedin or Timaru are closer and therefore more cost-effective options for these councils.
- The Westland District neighbours Queenstown Lakes and it may be possible to transport recyclables from this district to Council's new MRF. However, Westland is looking at options to work with the Grey and Buller Districts on the West Coast for their waste services to commence in July 2025, and while a QLDC MRF may be suitable for Westland, it may be too far to transport material from Buller or Grey.

We have not specifically included material from these districts in sizing the MRF.

There are existing council-owned MRFs in the lower South Island that QLDC could send recyclables to instead of building their own local MRF:

- Timaru District Council own and operate a MRF at Redruth Resource Recovery Park, in Timaru. It has limited capacity and is currently being upgraded. It is being used by CODC for interim processing.
- Dunedin City Council (DCC) use a MRF owned and operated by OJI next to DCC's Green Island Landfill. The OJI MRF is nearing end of life and has limited capacity. DCC are in the process of developing a new MRF on the Green Island Resource Recovery Park site, which will be owned by DCC and replace the OJI MRF. Early discussions with DCC have taken place to establish whether the facility would be sized to accommodate material from CODC and QLDC and this is confirmed.
- The WasteNet Southland councils use a MRF owned and operated by Recycle South (formally known as Southland DisAbility Enterprises Ltd). This MRF is also nearing end of life and has capacity restrictions. Future plans are unknown at this stage.

[2] Otago Region Waste Assessment – covering Queenstown Lakes, Central Otago, Clutha and Waitaki Districts and Dunedin City

For the purposes of this assessment, it is considered that the planned new DCC MRF on the Green Island Resource Recovery Park site is the most likely out of district option available. Resource consent applications are currently being processed by Otago Regional Council, which are based on the largest MRF building they can fit on the site and the proposal is to build at least a 5 tonne per hour MRF, which is anticipated to be large enough to process recyclable material from QLDC and CODC now and in the long term. The Timaru MRF will also have capacity to accept additional material once the DCC MRF is operational and DCC materials are directed to the new Dunedin MRF.

4.4 Material flows

The table below provides the volume of recyclables generated in the Queenstown Lakes and Central Otago Districts in 2023/24 and projected out to 2044/45. The volume of material processed through the MRF is expected to double in this period.

Table 5 Recyclables volumes projection

Material	Volume 2023/24[1]	Volume 2044/45[2]
Queenstown Lakes District		
Wanaka (40%)		
Mixed Recyclables	1,122	2,531
Glass	1,034	2,331
Sub-total Wanaka	***2,156***	***4,863***
Whakatipu (60%)		
Mixed Recyclables	1,683	3,797
Glass	1,551	3,497
Commercial OCC	907	2,047
Commercial mixed recyclables	612	1,381
Commercial glass	1,070	2,413
Sub-total Whakatipu	***5,823***	***13,135***
Central Otago District		
Mixed Recyclables	1,654	2,398
Glass	1,169	1,696
Sub-total Wanaka	***2,823***	***4,094***
Total Glass	4,823	9,937
Total OCC	907	2,047
Total Mixed Recyclables	5,072	10,107
Contamination to landfill (17%)	862	1,718
Recyclables to market	4,209	8,389
Throughput (tonnes/hr)	***2.4***	***4.9***

Notes:

1. Based on operation 8hrs per day, 5 days per week, 52 weeks per year
2. Based on 3.9% growth in the Queenstown Lakes District and growth in Central Otago of 2.1% growth in years 1-9 then 1.5% in years 10-20

For Queenstown Lakes, the kerbside tonnes have been split 40% from Wanaka and 60% from Queenstown. While Wanaka is growing at a faster rate than Queenstown, overall the split is expected to be roughly the same within the 20-year operating period for this MRF.

The figure below shows the transport distances between the different collection areas, potential MRF locations and to the export locations (ports). Cromwell is ideally suited at the centre of the collection area and on route to export nodes in Dunedin or Christchurch. However, the Whakatipu Basin area is the largest generator of mixed recyclables; the volume is double that of Wanaka or Central Otago (all mixed recyclables from Central Otago are currently consolidated in Alexandra). Overall, transport movements (and costs) would be lowest for a MRF located in Queenstown.

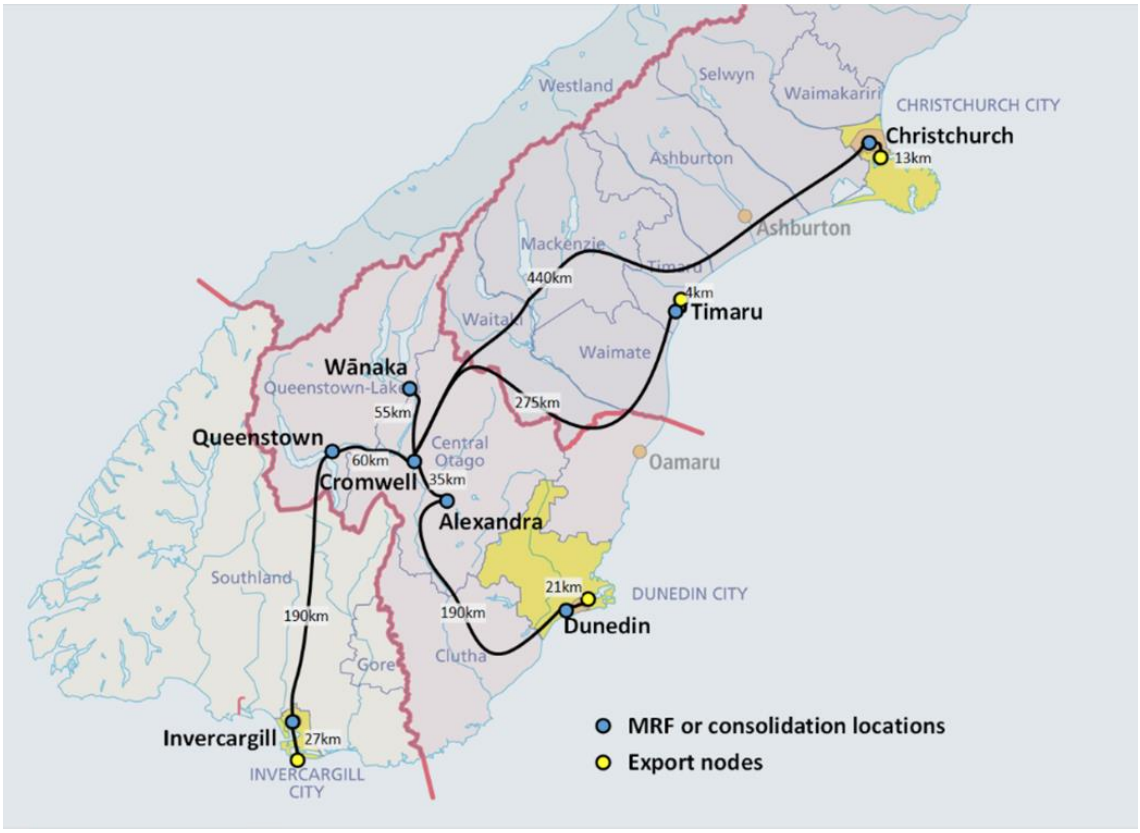


Figure 1 Transport distances between collection areas, potential MRF locations and export locations
(Note, Victoria Flats Landfill is approximately halfway between Queenstown and Cromwell)

4.5 MRF concept plan

Based on the volume information above, BJ Scarlett have produced a concept plan for a MRF that could process 5 tonnes per hour. A concept layout for this MRF is shown in the diagram below.

The layout shows a land area of 9,000m^2, with car parking for staff and visitors, a weighbridge, an enclosed building to house the MRF plant and equipment, a baled material storage shed open on one side and sufficient hard standing to allow incoming vehicles to drop recyclable material off and for large truck and trailers to maneuvre within the site and to be loaded with baled material. Ideally a larger site of 11,000,m^2 and a fully enclosed storage shed would be preferable to reduce windblown litter, for vermin control and to prevent damage to the processed materials.

This MRF in the diagram below would fit into any of the shortlisted options being considered.

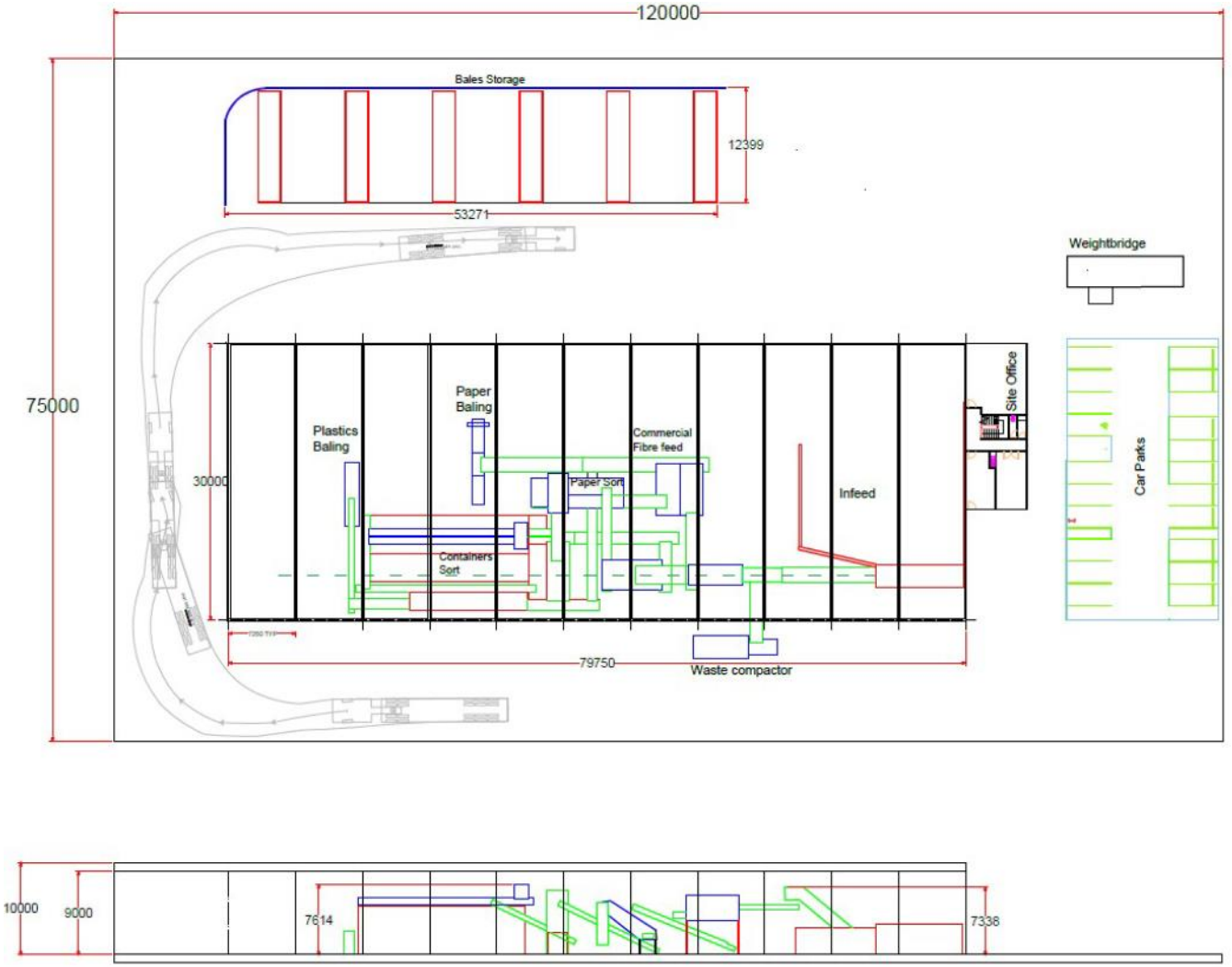


Figure 2 Concept layout for 5 tonne per hour MRF

A MRF of this size would require:

- Minimum land size of 9,000m^2, but ideally 11,000m^2 (for truck movements, storage, parking and loading)
- Minimum building size of 2,400m^2 (30m x 80m)
- Building height of 10 metres at the apex and 9 metres at the eaves
- Access to services: power, water, wastewater, stormwater and communications
- No glass to be accepted at the MRF
- Staff levels: 9 staff if fully automated or 13 staff if semi-automated (a semi-automated MRF would not include an optical sorter)
- Note, further capacity could be added to the MRF by adding an additional 8-hour shift (100% increase) or extending operations to 6 days per week (20% increase).

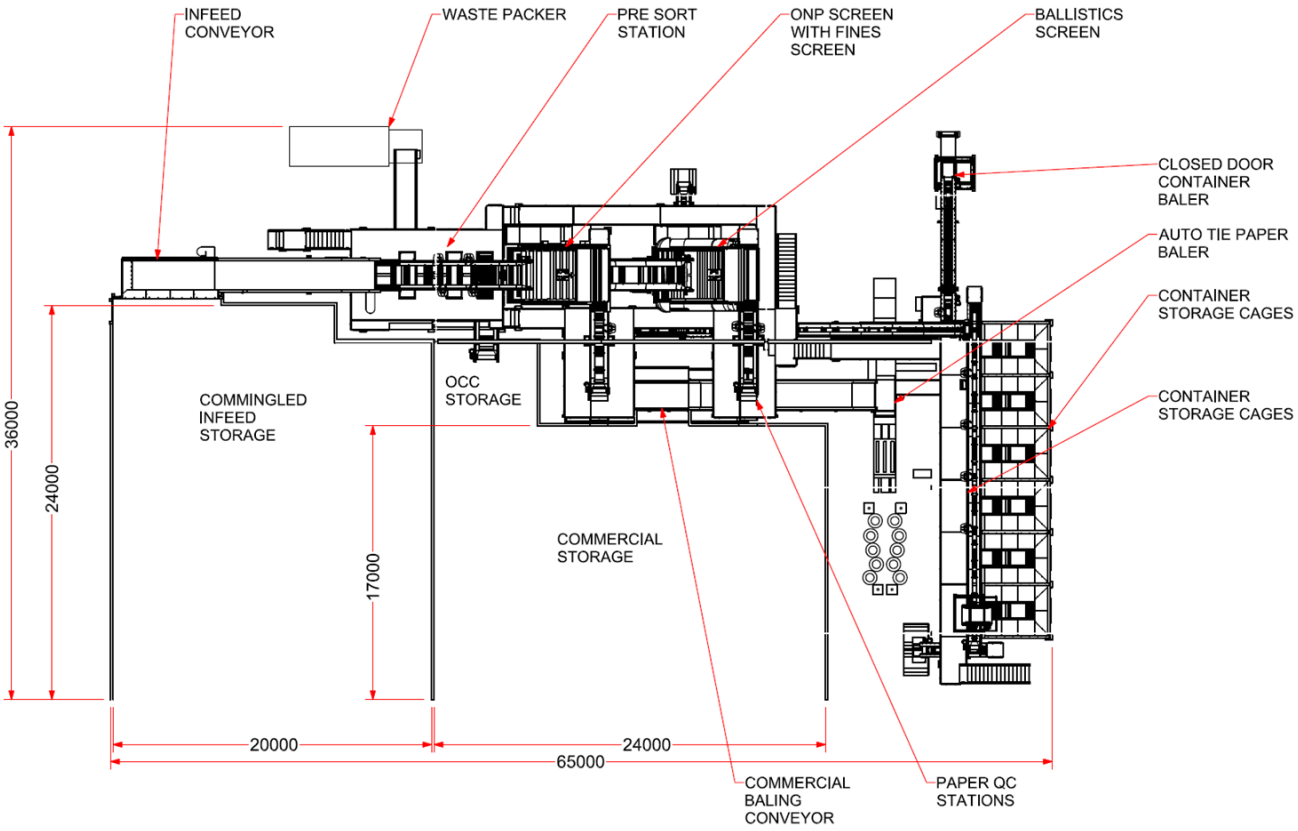


Figure 3 Detailed concept layout for 5 tonne per hour MRF

The diagram below shows the list of equipment required for the 5 tonne per hour MRF. Up to date pricing for the MRF has also been provided and is incorporated into the cost model. (Please note that pricing for the MRF remains confidential at this time).

Project Name	Queenstown MRF		
Document Name	MRF Equipment List - 5 TPH		
Date	26/06/2024		
Revision	A		
Item #	**Width**	**Length (m)**	**Description**
CV Type 1	600	105	Belt Conveyors
CV Type 2	900	95	Belt Conveyors
CV Type 3	1200	90	Belt Conveyors
CV Type 4	1400	40	Belt Conveyors
CV Type 5	1600	20	Belt Conveyors
CV Type 6	2000	7	High Speed Belt
Chain CV Type 1	1800	40	2 Off Chain CV
Chain CV Type 2	1800	18	Fibre cage CV
CV Type 7	1800	8	Bounce CV
LD-01			Leveling Drum
S01			OCC Screen
S02			Fines Screen
S04			Mixed Paper Screen
MG01			Overbelt Magnet
EC01			Eddy Current
OS01			Optical Sorter 1 - Paper
OS03			Optical Sorter 3 - Containers
BP			Paper Baler
BC			Containers Baler
WC01			Waste Compactor
AC01			Air Compressor 01

Figure 4 List of plant and equipment for 5 tonne per hour MRF

A price estimate has been provided by BJ Scarlett which was used in the calculations for the financial assessment. This information has been shared with the Council, but is not being made public in this report as it contains commercially sensitive information.

4.6 Land values

Commercial land is scarce in the Queenstown Lakes and Central Otago districts, and the land values vary significantly. Wanaka land is about two thirds the value of Queenstown land, and Cromwell land is around one third the value of Queenstown land. While the highest volumes of recyclable materials are in Queenstown, the difference in land cost for an 11,000m^2 MRF site would significantly offset the transportation costs associated with moving material from Queenstown to Cromwell, and to a lesser extent, to Wanaka.

Table 6 Comparison of land values in Queenstown, Wanaka and Cromwell

Location	Cost per m^2	Cost for 11,000 m^2 using upper limit
Queenstown	$1,200-$1,900	$20,900,000
Wanaka	$800-$1,100	$12,100,000
Cromwell	$500-$700	$7,700,000
Gibbston Valley	$400	$4,400,000

5 Assumptions

The following assumptions have been made in relation to the MRF options assessment:

1. The existing MRF site at 110 Glenda Drive, Frankton is not suitable for a new MRF due to space constraints and the need for the site to be used for the transfer station expansion.
2. QLDC has an approved capital budget of $70M for the for waste facilities across the district in the draft QLDC 2024-2034 Long Term Plan. The majority of this budget will be allocated to a new MRF.
3. The new MRF will not process glass, which will continue to be handled separately, consolidated at transfer stations and transported to Visy glass furnace in Auckland, via Christchurch.
4. Land and lease values have been provided based on the best available data from Q Property in May 2024 and may be subject to change.
5. For the financial assessment, costs will commence in the 2025/26 financial year and have been projected out for a 20 year period.
6. For the Ballantyne Road, Wanaka site, QLDC will own the land and develop the site and buildings.
7. For the CODC site, all land ownership options are on the table.
8. For the 147 McNulty Road site, the land will continue to be owned by Trojan Holdings Limited. They will develop the site and buildings and lease these to QLDC (or its MRF operator).
9. For the Gibbston Valley Site, QLDC will purchase the land and develop the site and buildings.
10. Transportation costs are calculated based on distances from collection sources to consolidation points, from consolidation points to the MRF and from the MRF to export locations. They also take into account the different compaction levels of materials at each stage.
11. In areas lacking existing recycling consolidation facilities, such as Wanaka, consolidation points would be required.

6 MRF site options considered

Council has carried out previous work to identify alternative MRF sites to the current Glenda Drive location. This work focussed on sites in the Whakatipu basin only and has proved inconclusive due to prohibitive costs and changes in priority for available land. The scope of the MRF options assessment has now been increased to include the whole of the QLDC area including Wanaka and beyond the boundaries of the district into Central Otago. This has come about because Council has recently purchased land next to the Wanaka transfer station which could be available for a new MRF and it also wants to explore the potential for more affordable options.

An initial review of the previous work concluded that there would be some benefit in revisiting some of the options previously considered and to explore whether there are any other locations across the QLDC and Central Otago area, which could be added to the assessment. An initial list of 12 options was presented to QLDC staff at the workshop on 2 May. These sites are listed in the table below. Through this workshop, it was agreed that Options 1-6 would be taken forward, along with Option 0 110 Glenda Drive (status quo).

Table 7 Long list of options (Options 0-6 retained, Options 7-12 discarded)

#	Location
0	110 Glenda Drive (status quo – for comparison).
1	Wanaka Ballantyne Road – QLDC recently purchased land (partly closed landfill) between the existing Wanaka transfer station and the Cardrona River.
2	Cromwell CODC site – A mixture of land (partly on closed landfill) which is part of the Cromwell transfer station and land within Plan Change 18 which is adjacent.
3	Cromwell 147 McNulty Road – Land owned by Trojan Holdings Ltd, which is a large transport and private construction and demolition waste recycling facility.
4	Whakatipu Coneburn Industrial Zone – Land owned by Scope Resources Ltd and Trojan Holdings Ltd.
5	Queenstown Victoria Flats Gibbston Valley – Land owned by Cardrona Cattle Company Ltd with designs and a proposal for a resource recovery centre.
6	Out of district MRFs – Christchurch, Dunedin, Invercargill, Timaru.
7	Arrowtown Bush Creek Road – Land in the Bush Creek industrial area currently for sale.
8	Cromwell SH6/Cemetery Road – Land currently for sale.
9	Cromwell Parkburn Quarry – Land owned and proposed for residential and commercial development.
10	Hawthorne Drive, Queenstown (site 6 from previous assessment).
11	Wanaka other – 60B Church Road in Luggate. Property is currently owned by Upper Clutha Transport and is for sale.
12	Queenstown Victoria Flats Road – Landfill site owned by QLDC.

An initial financial analysis concluded that options 7, 8, 10 and 11 would require a significant capital investment to purchase the land and there were other more suitable land parcels in similar locations that could be considered. Option 10, Hawthorne Drive, Queenstown was discarded because this land is currently undergoing a plan change to allow residential and some commercial development. Option 12, Queenstown, Victoria Flats is considered to be unsuitable in the longer term as this land is required for potential future landfill expansion.

For the purposes of the MRF options assessment, it was considered that the Dunedin site would be the most likely out of district option due to the relatively short transport distance and the likelihood of the facility being able to accept additional recyclable material.

The sections below provide further details on Options 1-6 and the status quo, which were taken forward into the longlist assessment using the MCA tool.

6.1 Option 0 – Glenda Drive (status quo – for comparison)

The current MRF is located at 110 Glenda Drive in Frankton, Queenstown adjacent to the Frankton transfer station. The total area of land is 15,000m^2 shared between the two facilities. It is estimated that the land area covering the MRF building, reuse shop and hardstanding is approximately 5,000m^2. The site is located within the Glenda Drive industrial area with similar activities taking place nearby. The site is designated for waste management purposes and the MRF currently holds water and air discharge consents. The diagram below shows the location of the MRF at the bottom of the shaded area.

Figure 5 QLDC MRF Glenda Drive

6.2 Option 1 – Wanaka Ballantyne Road

The Ballantyne Road site at the corner of Riverbank Road and Ballantyne Road in Wanaka was recently purchased by Council and is available for the relocation of the MRF. The site is located adjacent to the Wanaka transfer station, which is planned to be refurbished and there is the potential to either use the existing land or the newly acquired land for a new MRF. The total area of land is 110,230m^2 ,which includes existing leases to Wanaka Wastebusters and Wanaka Greenwaste and some other commercial contractors. Part of the land is on an existing closed landfill, which has been capped and is monitored for leachate and landfill gas emissions. Part of the site is also designated for waste management purposes and QLDC holds water and air discharge consents for the transfer station. The diagram below shows the extent of the newly acquired land, which is 83,243m^2 in size.

Figure 6 Ballantyne Road

6.3 Option 2 – Cromwell CODC site (part of Cromwell closed landfill and plan change 18 site)

The Cromwell CODC site is located between Venning Crescent and Bannockburn Road partly on the Cromwell closed landfill and partly on land, which has just been re-zoned industrial through plan change 18. The land is owned by CODC and will be subdivided into commercial and industrial lots. Preliminary discussions with CODC suggest that the land could be easily utilised for a MRF as this is considered a strategic purpose. This is endowment land, which is owned by the Cromwell community who would need to approve the use for this purpose. The total area of land available is in excess of 104,000m^2. The site is located adjacent to the Cromwell transfer station, which is planned to be refurbished in the next few years. The site is designated for waste management purposes. The diagram below shows the extent of the available land including a rectangle showing the approximately size and location of the MRF building. It would be anticipated the MRF site would also occupy part of the Cromwell transfer station site and could be accessed from Venning Crescent.

Figure 7 Cromwell CODC site

6.4 Option 3 – McNulty Road, Cromwell (Site owned by Trojan Holdings Ltd)

The Cromwell 147, McNulty Road site owned by Trojan Holdings Ltd is flat land within the McNulty Road industrial area. The total area of land available is 11,000m^2 on the southeastern corner of the site. The site already has similar activities taking place including a transport company, truck workshop and tyre shop, construction and demolition waste recovery and storage yard for waste management plant and equipment. The site has a weighbridge and truck wash already in place. The diagram below shows the extent of the available land including a rectangle showing the approximately size and location of the MRF building.

Figure 8 Cromwell 147 McNulty Road site

6.5 Option 4 – Whakatipu Coneburn industrial zone (338 Kingston Road - sites owned by Trojan Holdings Ltd)

The Whakatipu Coneburn site owned by Trojan Holdings Ltd is land recently rezoned commercial and industrial. Three lots (5, 8 and 12) are available which are over 11,000m^2 in size. The topography of the land is steep in places with very little flat land available. There are building height restrictions in place across all lots which will require deep excavation and earthworks. The diagram below shows the extent of the available land including the proposed lots.

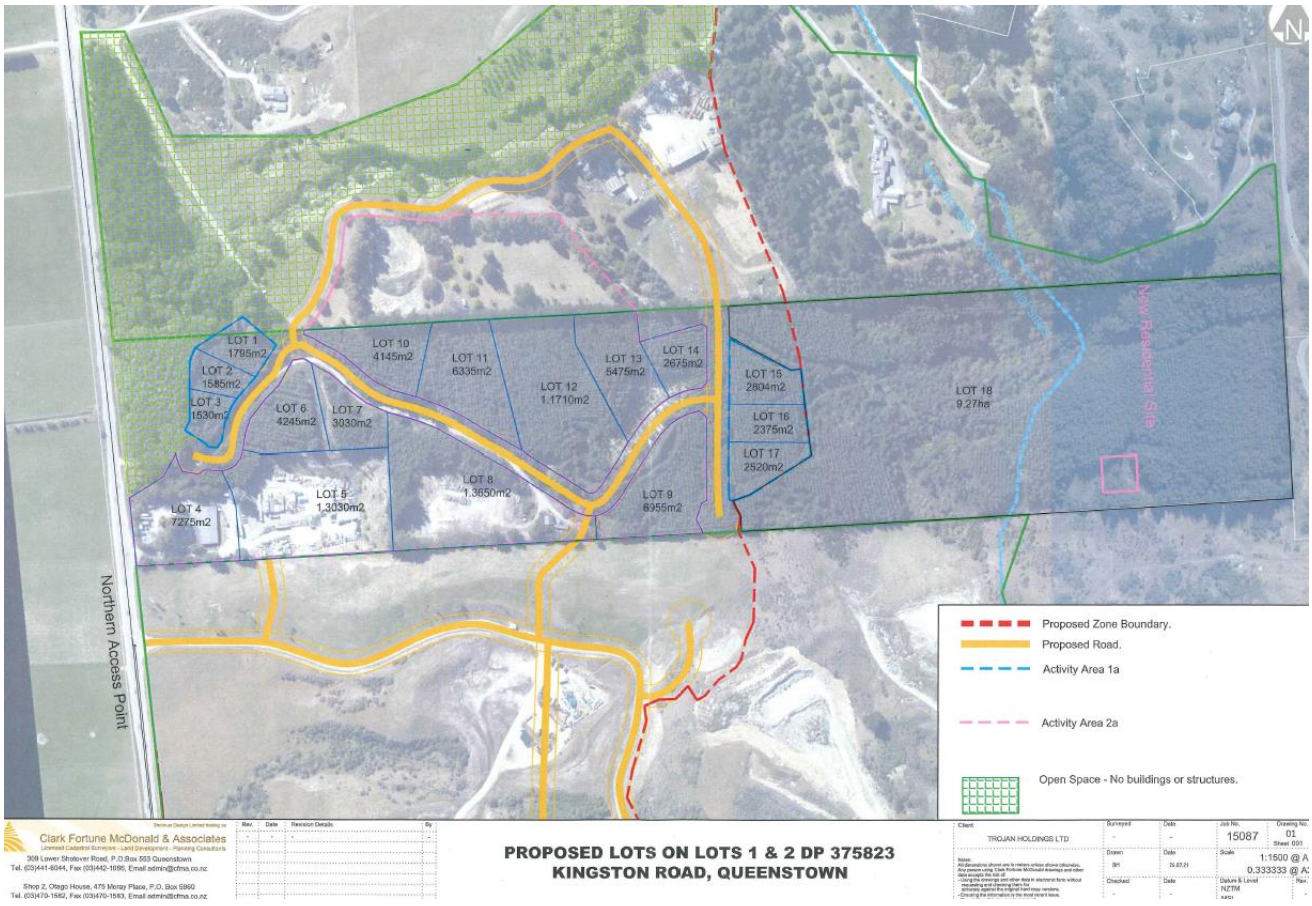


Figure 9 Whakatipu Coneburn site (338 Kingston Road)

6.6 Option 5 – Gibbston Valley, The Yards (Site owned by Cardrona Cattle Company Ltd)

The Queenstown Victoria Flats Gibbston Valley site is owned by Cardrona Cattle Company Ltd who are proposing to develop the site for commercial purposes, which could include a resource recovery park. The total area of land available is in excess of 490,000 m^2 and includes an area in excess of 11,000m^2 in size, which would be available for a MRF. The site is located close to the Victoria Flats landfill and does not have services such as power, water, wastewater or stormwater in place. An application for land use consent to build a resource recovery park has been prepared for the site, but has not yet been formally submitted for consideration. The diagram below shows the extent of the available land.

Figure 10 Queenstown Victora Flats Gibbston Valley

6.7 Option 6 – Out-of-district MRF

The out-of-district option selected is the Dunedin MRF, which is currently under construction. This site is considered the most appropriate out of district option because of the shortest distance to travel and the likelihood of the facility accepting additional recyclable material from QLDC and CODC. Transport distances are as follows:

- From Queenstown, 285km
- From Wanaka, 280km
- From Cromwell, 225km
- From Alexandra, 190km

7 Phase 1 longlist assessment

7.1 Phase 1 assessment considerations

Following a review of background information and discussion with Council staff at a workshop on 2 May 2024, the following list of considerations were developed, which are important for assessing MRF options in phase 1:

- An efficient MRF that can produce high quality bales of recyclables product, at the lowest cost, with the least loss of materials (waste).
- Value for money, including consideration of engineering and site development costs, land costs, etc.
- Shortest possible timeframe to replace ageing MRF.
- Low carbon emissions, including transport-related emissions.
- Resource Management Act – can a consent be obtained.
- Cultural impact, mana whenua values (not assessed this stage).
- Potential to leverage commercial property.
- Desirability of the site as a place to work and ability to show people what happens to their recyclables (education and behaviour change).
- Reliable, long-term solution.

These considerations align well with QLDC's Multi-Criteria Assessment (MCA) tool, which QLDC have used to assess infrastructure investment projects. The key considerations can be mapped to the standard QLDC MCA criteria. There is also benefit in using a tool that is consistent with other infrastructure decision making. For these reasons we recommended QLDC use its MCA tool for the assessment of MRF site options.

7.1.1 Phase 1 assessment criteria

The table below outlines the QLDC MCA criteria and how these have been interpreted for the MRF options assessment in phase 1, taking into account the key considerations that have been identified.

Table 8 QLDC multi criteria, descriptions and MRF specific descriptions

#	Criteria	QLDC MCA description	Description for MRF assessment
1	**Whole of life costs**	The present value of total cash costs of the investment over its life cycle, calculated using the relevant Public Sector Discount Rate.	20-year cashflow (opex, capex, revenue).
2	**Resilience**	Services would continue functioning during adverse events (i.e. disaster and natural hazard) and/or quickly recover to acceptable levels of service after an event.	Ability to re-establish service to whole of district if transport links severed.
3	**Environment**	The option: (a) prevents contaminants from entering the natural environment; and/or (b) reduces impact on global emissions and resource extraction; and/or (c) prioritises opportunities for environmental regeneration.	The solution: (a) Reduces carbon emissions (particularly transport). (b) Increases recovery of recyclable material.
4	**Economic**	The option: (a) represents an optimal balance of customer quality and affordability expectations (b) sustains the affordability of services through efficiency, effectiveness, and/or alternative funding opportunities.	Assurance solution remains affordable over 20- years.
5	**Achievability**	The option could be readily implemented from a legal, regulatory, planning and delivery perspective.	Solution readily implementable (from a legal, procurement, planning and delivery perspective). Time to implement a new MRF is as short as possible.
6	**Risk**	The option reduces residual risk and health and safety risk more than the other options considered.	NOT USED – all options will reduce operating and health and safety risk with a new MRF constructed
7	**Consentability**	The option is more easily consentable, or free of third-party restrictions, than the other options under consideration. For example: opposition, designation or district/regional plan requirements, potential conditions/mitigations on consent, etc.	Solution is easily consentable.
8	**Future proofing/options enabling**	The proposed option could be implemented in a way that would satisfactorily cope with future patterns of demand and enable adaptation to changes in community needs and preferences.	Solution is flexible and can be adapted to changing demands.
9	**Downstream economic effects**	The project enhances economic wellbeing, including factors such as productivity, economic diversification/resilience, employment, and enables opportunities for social enterprise.	Solution has broader economic benefits including employment, training, support for local businesses.

#	Criteria	QLDC MCA description	Description for MRF assessment
10	**Cultural wellbeing**	The project safeguards opportunities for Māori and other cultures and could be implemented in a manner that protects the area's cultural and historic heritage.	The solution safeguards opportunities for Māori and other cultures and could be implemented in a manner that protects the area's cultural and historic heritage. Note, requires feedback from mana whenua to be assessed.
11	**People**	The option: (a) directly and reliably protects people from harm; and/or (b) creates opportunities for people to increase activity, recreation, and social connection.	The location is a desirable place to work and easy to access for education purposes.

7.1.2 Phase 1 scoring and weightings

The options were assessed on a scale of 1 to 5, as follows:

- 1 = Strongly disagree
- 2 = Disagree
- 3 = Neither agree nor disagree
- 4 = Agree
- 5 = Strongly agree

The scoring methodology for whole of life costs in the QLDC MCA tool scores options on the following basis:

- 1 = 80-100% of maximum of options under consideration
- 2 = 60-79.9% of maximum of options under consideration
- 3 = 40-59.9% of maximum of options under consideration
- 4 = 20-39.9% of maximum of options under consideration
- 5 <20% of maximum of options under consideration

The scores were then totalled, and the options ranked. The following weightings were applied to each criterion to represent the elements most important to Council.

- Whole of life costs = 50% weighting
- Achievability = 10% weighting (greater emphasis placed on timely solution)
- Risk = 0% weighting (difficult to reconcile, weighting added to achievability)
- All other criteria = 5% weighting each

7.2 Phase 1 scoring

Following the review of long list options and the discarding of unsuitable options, seven options have been assessed against the agreed criteria including the current Glenda Drive site as a comparison.

Note, the Glenda Drive site is not fit for purpose due to being a constrained site and inadequate plant and equipment to process recyclables in the medium to long term. The site has also been identified for the expansion of the Frankton transfer station.

The table below provides a summary of the assessment of long listed options. Commentary on the scoring is provided in the sections that follow.

Table 9 Summary of options assessment

#	Criteria	Weighting	Option 0	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
			Status Quo - Glenda Drive MRF	Wanaka - Ballantyne Road	Cromwell - CODC site next to transfer station	Cromwell - McNulty Rd	Whakatipu Coneburn	Gibbston Valley - The Yards (Victoria Flats Road)	Out of district - Dunedin
1	Whole of life costs	50%	3	3	3	3	3	3	3
2	Resilience	5%	3	3	3	3	3	3	2
3	Environment	5%	4	3	3	3	4	4	2
4	Economic	5%	3	3	3	3	3	3	3
5	Achievability	10%	1	4	3	5	1	2	3
6	Risk	0%	3	3	3	3	3	3	3
7	Consentability	5%	5	2	3	4	1	2	4
8	Future proofing /options enabling	5%	1	5	4	4	4	4	2
9	Downstream economic effects	5%	4	4	3	3	4	4	2
10	Cultural wellbeing	5%	3	3	3	3	3	3	3
11	People	5%	1	4	3	3	3	2	2
	Total - unweighted scores	100%	31	37	34	37	32	33	29
	Rank - unweighted scores		6	1	3	1	5	4	7
	Total - non-financial scores only		28	34	31	34	29	30	26
	Rank - non-financial scores only		6	1	3	1	5	4	7
	Total - weighted scores		31	36	34	36	31	32	31
	Rank - weighted scores		7	2	3	1	5	4	6

7.2.1 Whole of life costs

For phase 1 a whole of life cost analysis was completed, which was designed to provide a long-term view of the financial implications of each MRF option over a projected period of 20 years. This period commences in the 2025/26 financial year following completion of all enabling works and MRF construction, which will take place in the year leading up to this date. In phase 2, these financials were further refined (see section 10).

Operational costs are projected to begin in the financial year, 2025/26, for all options. This allows for a standardised starting point across all options.

A key assumption is the exclusion of glass from the tonnage processed by the MRF, which is to reflect industry best practice and the continuation of existing solutions for glass from QLDC and CODC.

The financial model to inform the whole of life costs assessment has the following core components:

- Capital costs
- Lease costs
- Transportation costs
- MRF operating costs

The financial analysis confirms that all options are cost-generating, with no scenarios presenting a positive NPV. Consequently, this analysis focuses on identifying the option for minimising costs. The bottom-line NPV and whole of life cash flows for each option based on QLDC owning the land and MRF assets (i.e. not leasing the assets) are shown in Table 8 below. The NPV for each option has been used to score whole of life costs in the options assessment. Information on the cost components that make up each of the financial models is provided in appendix A.

Option 6, out of district, has the lowest NPV because it has low upfront capital costs. However, over the longer term, it costs more on a cash-flow basis due to the future transportation costs. Option 3, Cromwell McNulty Road, has a lower cost because it has existing infrastructure that can be used for the MRF. The NPVs of the other options are grouped within a narrow range of $56 to $62 million. Minor adjustments in cost inputs could lead to shifts in their internal rankings, indicating a tight financial landscape among the alternatives. For example, additional geotechnical requirements can increase costs by $5-10 million. An increase in the out of district MRF gate fee can increase cost by a similar amount. Therefore, the options are within a similar cost range and cannot be separated on cost. The overall range in NPV scores is $48 to $62 million. Therefore, for the MRF options assessment, each option has been allocated the same score of 3.

Table 10 Whole of life costs for QLDC to own and operate MRF

Results summary ($'000)	Option 0 Status Quo - Glenda Drive	Option 1 Wanaka - Ballantyne Road	Option 2 Cromwell - CODC site	Option 3 Cromwell - McNulty Rd	Option 4 Whakatipu Coneburn	Option 5 Gibbston Valley - The Yards (Victoria Flats Road)	Option 6 Out of district
NPV	n/a	($56,300)	($57,700)	($50,200)	($61,500)	($58,000)	($48,300)
NPV Rank	n/a	3	4	2	6	5	1
Whole of life cash flows	n/a	($87,700)	($76,600)	($78,900)	($60,000)	($77,100)	($115,900)
Whole of life cash flows rank	n/a	5	2	4	1	3	6
Whole of life cost score	n/a	3	3	3	3	3	3

7.2.2 Resilience

Each option scored 3 except for Option 6 out of district, which scored 2. It is likely that options closest to the highest tonnage would provide more resilience and the actual level of resilience of each option is dependent on where the transport links are severed. Consideration must also be given to the resilience of the facility, which may need to operate at reduced capacity even if transport links are not severed in a disaster. In this situation material may need to be landfilled.

7.2.3 Environment

Options 0, (status quo), 4, Whakatipu Coneburn and 5, Gibbston Valley, which are closest to the where the highest tonnage is generated (Queenstown) scored 4 because these options require the least trips.

Option 6, out of district scored 2 because of the need to transport loose material a greater distance for processing resulting in higher estimated carbon emissions. At present there are no viable alternatives to using diesel powered truck and trailers to transport long distances. Technological developments are progressing in hydrogen powered long haul vehicles, but these are some way from being a proven solution in New Zealand and cannot be relied upon in this assessment.

7.2.4 Economic

All options scored 3 as the affordability over 20 years will depend more on the structure of the ownership and operating model, than the location of the MRF.

7.2.5 Achievability

This criterion has been allocated a weighting of 10% to reflect the importance of having a solution in place in a timely manner given the high risk of catastrophic failure of the current MRF with no alterative processing option. It also reflects the assessment of risk considerations under the achievability category in this assessment.

Option 3, Cromwell, McNulty Road scored 5 because of the ease with which the option could be achieved. There are services to the site, the land is flat, the site is within an industrial zone with similar activities taking place on neighbouring land.

Option 1, Wanaka Ballantyne Rd scored 4 because there are fewer obstacles to achievability. The Wanaka site still needs to accommodate other site uses such as the transfer station, closed landfill management and non-Council operations such as Wastebusters and Wanaka Greenwaste.

Option 2, Cromwell CODC and Option 6, out of district scored 3 due to additional complexity such as access to private land, subdivision and agreement from the Cromwell Community Board and potential difficulty in agreeing an appropriate gate fee for out of district recyclables.

Option 5, Gibbston Valley scored 2 because of the potential difficulty in working with a developer who still needs to subdivide land or landowner who will be assessing any long term proposal against other alternatives.

Option 4, Whakatipu Coneburn scored 1 because there are potential problems associated with digging down sufficiently to achieve the consent height restrictions. All these options are likely to take longer to achieve.

Option 0 Glenda Drive (status quo) scored 1 because it will not achieve the desired outcome of being able to process material from the QLDC and CODC areas. The site is too small.

7.2.6 Risk

All options scored three based on comments made at the workshop that this is difficult to score and because the key risk consideration, potential failure of the MRF, was picked up in the achievability criterion. The risk criterion has been allocated a weighting of 0%.

7.2.7 Consentability

Option 0, Glenda Drive scored 5 because the current site is already designated for waste management purposes and the current MRF holds discharge consents.

Options 3, Cromwell McNulty Road and 6, out of district scored 4 because they are considered easier to consent. Option 3, Cromwell McNulty Road is already within an industrial zone and similar activities are already being carried out on the site. Option 6, out of district may require a change to the consent to allow the acceptance of additional recyclable material, but this is expected to be easily obtainable (note, this was assessed prior to stakeholder discussions).

Option 2, Cromwell CODC scored 3 because it is within an industrial zone with similar activities taking place.

Options 1, Wanaka Ballantyne Road, 4, Whakatipu Coneburn and 5, Gibbston Valley scored 2 because there are more hazards such as contaminated land or flooding, which could be more problematic when seeking to obtain resource consents (note, this assessment was made ahead of detailed consent planning work).

7.2.8 Future proofing/options enabling

Option 1, Wanaka Ballantyne Road scored 5 because a new MRF would be constructed to allow flexibility and be adaptable to changing demands.

Options 2-5 (Cromwell – CODC, Cromwell McNulty Road, Whakatipu Coneburn and Gibbston Valley) all scored 4 because there may be restrictions placed on these sites by the landowners, which prevent potential improvements and restrict flexibility in the future.

Option 6, out of district scored 3 because there is limited control over what happens at the out-of-district facility, which may restrict the flexibility of future services.

Option 0, Glenda Drive scored 1 because it is constrained and is already at capacity with no ability to accept additional material from CODC or from growth.

7.2.9 Downstream economic effects

Options 0, status quo, 1, Wanaka Ballantyne Road, 4, Whakatipu Coneburn and 5, Gibbston Valley scored 4 because the sites are located within the district. Sites within the district are likely to result in higher downstream economic effects for communities within the district.

Options 2, Cromwell CODC and 3, Cromwell McNulty Road are located outside the district, but within the region and it is likely that there will be some downstream economic benefits for the district.

Option 6, out of district scored 2 because it is outside the district and region.

7.2.10 Cultural wellbeing

All options scored 3. To assess this criterion further, engagement with mana whenua is required.

7.2.11 People

Option 1, Wanaka Ballantyne Road scored 4 because this site is located in an area currently utilised for waste management purposes, with similar activities taking place on the site, with easy access for workers and for education tours.

Option 2, Cromwell CODC, option 3, Cromwell McNulty Road and option 4, Whakatipu Coneburn scored 3 because they offer good access for workers and for education tours. But are away from similar activities.

Options 5, Gibbston Valley and 6, out of district scored 2 because these are located further from QLDC's population centres, making them less convenient for education tours. In the case of Option 5, Gibbston Valley, the location is more difficult for workers to access as well.

Option 0, Glenda Drive is not a desirable place to work due to the condition of the facility, although it is easy to access for workers and for education purposes.

7.3 Shortlist of options from phase 1

The options assessment presented the following ranking based on weighted scores:

- 1st - Option 3, Cromwell McNulty Road (weighted score of 36)
- 2nd - Option 1, Wanaka, Ballantyne Road (weighted score of 36)
- 3rd - Option 2, Cromwell CODC (weighted score of 34)
- 4th - Option 5, Gibbston Valley (weighted score of 32)
- 5th - Option 4, Whakatipu Coneburn (weighted score of 31)
- 6th – Option 6, out of district (weighted score of 31)
- 7th - Option 0, Glenda Drive (weighted score of 31)

Options 1-5 all involve the development of an in district MRF to replace the MRF in Glenda Drive. While option 3, Cromwell McNulty Road, and option 1 Wanaka Ballantyne Road score highest, they are not clearly ahead of the other options. This makes it difficult to rule out the other in district MRF options at this stage. However, option 4 Whakatipu Coneburn has a critical flaw (height restrictions) and scored 1 for achievability and therefore is excluded from further assessment.

Option 0, Glenda Drive, also has a critical flaw – the site is not big enough for transfer station expansion and a new MRF. It too can be excluded from further consideration.

Option 6, out of district, represents a different MRF solution – transporting recyclables to an existing out of district MRF. It scored lower than the in-district MRF options as a long-term solution, but many be beneficial as a short term solution, while an in district MRF is developed or in the event the Glenda Drive MRF suffers a catastrophic failure. Therefore, it is recommended this option be shortlisted for further assessment in phase 2.

Therefore, it was agreed that five options progress to phase 2 of the assessment, which will involve stakeholder engagement, development of concept plans for each option and further whole of life cost and risk assessment. The five options were:

- Option 1, Wanaka, Ballantyne Road
- Option 2, Cromwell, CODC transfer station
- Option 3, Cromwell, McNulty Road
- Option 5, Gibbston Valley
- Option 6, out of district

7.4 Challenges and risks

All of the options shortlisted require further analysis to understand their challenges and risks and how these could be manged. The table below provides a high-level summary of the challenges and risks associated with the shortlisted options.

Table 11 Challenges and risks of shortlisted options

#	Challenges	Risks
Option 1 – Wanaka Ballantyne Road	Ability to construct a MRF building on land identified as a closed landfill (HAIL site) and nominally identified within a flood plain. Consent process may take longer.	Site constraints mean that consent cannot be obtained.
Option 2 – Cromwell, CODC	Complexity of ownership and development involving another council. Unknown progress on subdividing this land.	Site cannot be developed in reasonable timeframe. Site constraints (geotechnical or contaminated land) unknown.
Option 3 – 147 Cromwell McNulty Road	Land ownership model is unlikely. Lease cost may be prohibitive.	Agreement cannot be reached with the landowner.
Option 5 – The Yards (Gibbston Valley)	Land purchase price unknown. Unknown progress on subdividing this land.	Site cannot be developed in reasonable timeframe. Site constraints (geotechnical or contaminated land) unknown.
Option 6 – Out of district	Fluctuations in future fuel costs. Less flexibility over future processing options. Political desire to keep the MRF within the district. Low resilience in the event of a natural disaster particularly if transport links are severed. Need a site for consolidation ahead of haulage. No local access for the public to visit.	Dunedin facility does not agree to accept material from QLDC or CODC.

8 Stakeholder feedback on shortlisted options

8.1 Stakeholder engagement approach

A stakeholder engagement plan was developed which outlined how the team would engage with potential owners and operators of a future Queenstown MRF solution as part of Council's assessment of MRF options. A number of information gaps that the project team identified were addressed (or at least partially addressed) through discussions with the identified stakeholders. The aim was to assist Council to narrow down its preferred MRF solution.

The stakeholder engagement was not consultation with affected parties for a resource consent application. That would take place once a preferred option has been identified. Further, it was not engagement with decision-makers and the Queenstown community on the Council's proposed solution and associated financial implications for the district, which would be a Special Consultative Procedure and the associated pre-engagement and approval to consult.

The following key messaging were used with stakeholders when undertaking this engagement:

- QLDC is currently assessing its options for its future recyclables processing solution. It wants a long-term, reliable, cost-effective solution that maximises recovery of recyclable material.
- QLDC is looking at a broad range of options from QLDC owning and operating its own MRF through to transporting recyclables to an out of district MRF.
- QLDC is exploring location options, including land within the Queenstown Lakes and Central Otago districts.
- QLDC is narrowing down its options through this options assessment process, but decisions will need to go through Council's usual decision-making processes.
- Once QLDC has narrowed down its options, it will undertake further engagement with stakeholders and impacted parties.

8.2 MRF development stakeholders

The table below provides details of the stakeholders engaged with for the MRF options assessment, the key contacts and area of interest.

Table 12 Stakeholders

Stakeholder	Key contact(s)	Area of interest
QLDC staff and senior management	Property Director, SAP Mgr, O&M Mgr, Finance Mgr, Investment Advisory Mgr	Preferences on ownership and operating model, aligned to other investments
CODC staff and senior management	CODC Environmental Engineering Mgr Quinton Penniall	Owners of Cromwell transfer station and decision-makers for future use of this site and the adjacent CODC land intended for future industrial subdivision. Also interested in future QLDC MRF development and its availability for processing CODC recyclables, and the agreements that will be in place to enable CODC access to the MRF and associated costs (investment and processing fees).
Cromwell Community Board	via Quinton Penniall	Interest in future income from industrial subdivision and how this benefits Cromwell community.
Trojan Holdings Limited	Peter Carnahan	Owners of McNulty Road, Cromwell. Also provide waste services and may have an interest in operating QLDC MRF. Interested in maximising revenue from this land holding.
Cardrona Cattle Company	Q Property	Owners of 'The Yards', Gibbston Valley. Interested in maximising revenue from this land holding.
Dunedin City Council waste management staff	Group Manager Waste and Environmental Solutions Chris Henderson	Owner of the Green Island Resource Recovery Park, where their new MRF will be developed. May have an interest in receiving QLDC recyclables at the site, either as a commercial customer to EnviroNZ or as a DCC customer.
EnviroNZ	Glen Jones	DCC's contractor developing Green Island MRF and will operate the facility once commissioned. Responsible for attracting commercial customers to the future DCC MRF (which could include QLDC). Operator for Timaru District Council's MRF, where EnviroNZ also process commercial recycling (including CODC's recyclables as interim solution). Also CODC's recycling services provider. Interest in attracting commercial customers to Dunedin MRF, once built, and potentially Timaru MRF. Future interest in development and operation of QLDC MRF, with view of optimal ownership and operating model.
WM New Zealand	Greg Slaughter	QLDC's recycling services provider and operator of QLDC's Glenda Drive MRF. Future interest in development and operation of QLDC MRF and attracting their own commercial customers to the MRF.

Stakeholder	Key contact(s)	Area of interest
Mana whenua	QLDC Maori Strategy and Partnerships Mgr	Potential co-investor in QLDC's MRF. May have other land parcels that could be made available to QLDC as part of this investment. Also a strategic decision maker alongside QLDC in a future decision-making process (a later stage of the project).
MfE	MfE Senior Investment Mgr Joshua Wilson	Provider of grant funding through the Waste Minimisation Fund, based on investment criteria. These criteria need to be confirmed through engagement with them but generally relate to maximising resource recovery, reducing carbon emissions from waste and regional co-investment between councils.
Glass Packaging Forum	Glass Packaging Forum Programme Manager Dominic Salmon	Ability to co-locate glass bunkers for consolidation of glass ahead of transport to glass furnace in Auckland, and associated funding for required infrastructure.

8.3 Engagement questions and answers

Table 11 below provides a list of the questions asked of the key stakeholders. Online (via Teams) interviews were carried out with each stakeholder and their answers provided in Tables 12-15.

Table 13 Information requested from Stakeholders

#	Relevant Info Request (Y or N)	QLDC	CODC	Trojan Holdings Ltd.	Cardrona Cattle Co.	DCC	ENZ	WM NZ	Iwi	MfE	GPF
1	What would be your preferred land ownership arrangement (sell, lease, JV)? What options are off the table? e.g. sell land or lease land	Y	Y	Y	Y	N	N	N	Y	Y	N
2	Are there other land holdings that you are aware of that might be of interest to QLDC for their MRF?	N	N	Y	Y	N	N	N	Y	N	N
3	Do you have any views on the ownership arrangement for the MRF components such as the building and the MRF plant and equipment? What options are off the table?	Y	Y	Y	Y	N	Y	Y	Y	Y	N
4	How much control does QLDC and CODC want to have over the processing of recyclables, both your own and other parties (commercial or the other council's)?	Y	Y	N	N	N	N	N	Y	N	N
5	Do you have any views on the arrangements for the operation of the MRF? e.g. In-house, out-sourced O&M only, out-sourced with MRF ownership, out-sourced with site development or fully out-sourced i.e. gate fee. What options are off the table?	Y	Y	Y	Y	N	Y	Y	N	N	N
6	When will the new Dunedin MRF be ready?	N	N	N	N	Y	Y	N	N	N	N
7	Will the Dunedin MRF be able to accept recyclables from QLDC and CODC for the next 10-20 years? Would they be a customer of DCC or EnviroNZ? (5,000t now to 10,000t in 20 years)	N	N	N	N	Y	Y	N	N	N	N
8	What would be the acceptance criteria for recyclables from QLDC and CODC?	N	N	N	N	Y	Y	N	N	N	N
9	What would be the likely gate rate?	N	N	N	N	Y	Y	N	N	N	N
10	Is processing at Timaru MRF an option?	N	N	N	N	N	Y	N	N	N	N
11	Does the Glass Packaging Forum have any views on investment in glass consolidation infrastructure tied to the future MRF location?	N	N	N	N	N	N	N	N	N	Y
12	Which of the options aligns with Māori strategic thinking around waste?	N	N	N	N	N	N	N	Y	N	N
13	Are there services to the site?	Y	Y	Y	Y	N	N	N	N	N	N
14	Has title been issued?	Y	Y	Y	Y	N	N	N	N	N	N
15	Have resource consents been issued for the subdivision?	Y	Y	Y	Y	N	N	N	N	N	N
16	Are there any other interests in or users of your land that we should be aware of?	N	Y	Y	Y	N	N	N	Y	N	N

Table 14 Responses to questions 1, 2, 3, 4, 5, 13, 14, 15 & 16

Land, building and MRF equipment ownership arrangements and control of recyclables	
QLDC	• Owning the land and building (Ballantyne Road) enables better control for self-use, less constraint on use and rental control. Given part of the land is already designated for WM purposes and has RC water/air discharge controls makes it attractive. • Leasing the land comes with tenure constraint and landlord controls, which may or may not be manageable through a lease. • Assuming no other use anticipated for the site + colocation factors to one of the 2 largest waste generation areas (Queenstown and Wanaka) – then seems attractive. • Strategic asset, which could source Govt. funding. • Test market for MRF P&E ownership through MRF. • Control can be attained through a third-party contract with good KPIs linked to sustainability targets. • There are services to the site, title has been issued, no consents are required to subdivide and there are no other interests in the land.
CODC	• Open to discuss land ownership arrangements and are happy to have further discussions at any stage. • Design phase will take place from 1 July 2024, civil construction to commence 1 July 2025 and titles expected to be issued in July 2026. Resource consents haven't been issued for the subdivision yet and there are no other interests in the land (other than Cromwell Community Board).
Cromwell Community Board	• The Cromwell Community Board would need to be involved in this discussion, but the CODC team are confident that the board will see the benefits in having such a facility within the district.
Trojan Holdings Ltd	• Trojan Holdings would be landlord and would construct the building and own the building. This would be leased back to the Council preferably over a 20-year arrangement (5-10 years too short). Wouldn't sell the land. • Preference would be for the MRF plant and equipment to be owned by a friendly operator such as Smart Environmental. Long term arrangement would be better e.g. 20 years. • Outsourced to a friendly operator. Trojan Holdings wouldn't want to be involved in commodities and it might be better for Council to take on this risk fully. • 46 McNulty Road is available to purchase (too small)
Cardrona Cattle Co.	• Landowner would prefer to sell a parcel of land 1.4 hectare at approximately $400 per m2. • Services will be provided as part of the subdivision civil works, titles expected March 2025. Good interest in lots within the subdivision.
MfE	• No clear view, as long as the arrangement is transparent and any application for funding would require a robust business case. Spoke to Joshua Wilson at MfE.

Table 15 Responses to questions 6, 7, 8, 9 & 10

Out of district viability	
DCC	• End of 2025 at the earliest. Resource consents are currently being processed by ORC. Procurement of MRF equipment underway. • Yes, it would be sufficiently sized to accept material from QLDC and CODC (>5 tonne per hour MRF) • Acceptance criteria would be processing standard kerbside materials excluding glass. 15% contamination threshold. • Approximate gate fee of $200 per tonne.
ENZ	• Timaru MRF would be available once Dunedin MRF is operational. Similar gate fee of $200 per tonne

Table 16 Responses to question 11

Glass Packaging Forum views	
GPF	• Dominic represent GPF and others including Visy. • Need sufficient space for loading and unloading glass. • Makes sense to have one large site for consolidation to reduce plant and resource requirements.

Table 17 Responses to question 12

Iwi	
Iwi	• QLDC has an extra responsibility because they sit in the headwaters (Rivers and streams are the veins of the land). • Positive that there is a joint approach with CODC. • Shipping it out creates emissions and makes it somebody else's problem. • Check if the sites have any cultural significance. • Ngāi Tahu business arm may have some interest in investing in this opportunity, although the patterns seems be that they want to buy existing things rather than new things. • QLDC Māori Strategy and Partnerships Mgr to provide a heads up at the monthly online Hui with Aukaha and Tami representatives.

9 Financial model for shortlisted options

Financial modelling has been undertaken to compare the costs of the MRF options. Assumptions specific to each option and universal assumptions are detailed in Appendix B. The model was initially set up to assess the whole of life costs for the longlist of options in the phase 1 assessment. For phase 2, the modelling was further refined to reflect stakeholder feedback, provide additional detail and enable sensitivity testing of the costs.

9.1 Phase 2 results

The refinements to the model are discussed in Appendix A . The modelling results are shown in the table below.

Table 18 Phase 2 NPV - Discounted

20-Year results summary ($'000)	Wanaka, Ballantyne Road Option 1	Cromwell CODC Option 2	Cromwell McNulty Road Option 3	Gibbston Valley Option 5	Out of district Option 6
Operational Costs					
Processing Costs	$3,200	$3,200	$3,200	$3,200	$21,900
Disposal Costs	$3,100	$3,100	$3,100	$3,100	$4,700
Transportation Costs	$15,400	$11,500	$11,500	$11,800	$24,300
Total NPV	**$21,700**	**$17,800**	**$17,800**	**$18,100**	**$50,900**
Investment & Facility Costs					
Capital Investment	$38,800	$48,800	$4,800	$44,700	$4,800
Residual Value	($6,900)	($12,000)	($2,000)	($10,100)	($2,000)
Leasing Costs	$0	$0	$32,900	$0	$0
Total NPV	**$31,900**	**$36,800**	**$35,700**	**$34,600**	**$2,800**
Combined Total NPV	**$53,600**	**$54,600**	**$53,500**	**$52,700**	**$53,700**
Total Tonnes	*180,000*	*180,000*	*180,000*	*180,000*	*180,000*
Cost per Tonne	*$298*	*$303*	*$297*	*$293*	*$298*
Rank	**3**	**5**	**2**	**1**	**4**

The reduction in the MRF floor area from 4,000m^2 in Phase 1 to 2,400m^2 reduced the cost of the in-district options, resulting in the out of district option no longer presenting a noticeable financial benefit. Compared with phase 1, the costs of the options are much closer together in phase 2, a spread of only 3.6%

Capital outlay is a material factor in assessing the financial viability of each MRF option. Key variations and findings are as follows:

- Option 3, Cromwell McNulty Road: This option is unique because it assumes the land and facilities are leased from an external party rather than owned. The leasing cost is calculated based on 6% of the estimated upfront cost of the land and facilities.
- Option 1, Wanaka Ballantyne Road: The site at Wanaka is assumed to use land already owned by QLDC, eliminating the need for land purchase costs. Consequently, the residual value does not include the land value, as it is treated separately from the options analysis. Although the potential opportunity cost of QLDC not being able to use this land for other purposes was considered, it was deemed immaterial and beyond the scope of this financial analysis.
- Residual values: Despite the low likelihood of selling the facility or land at the end of the 20-year assessment period, including the residual value of the purchased assets was deemed appropriate to reflect their value to QLDC in year 20. This approach allows for a fair comparison with options requiring only minor capital outlay. However, results excluding residual values are also presented in the sensitivity analysis to illustrate the impact of this factor.

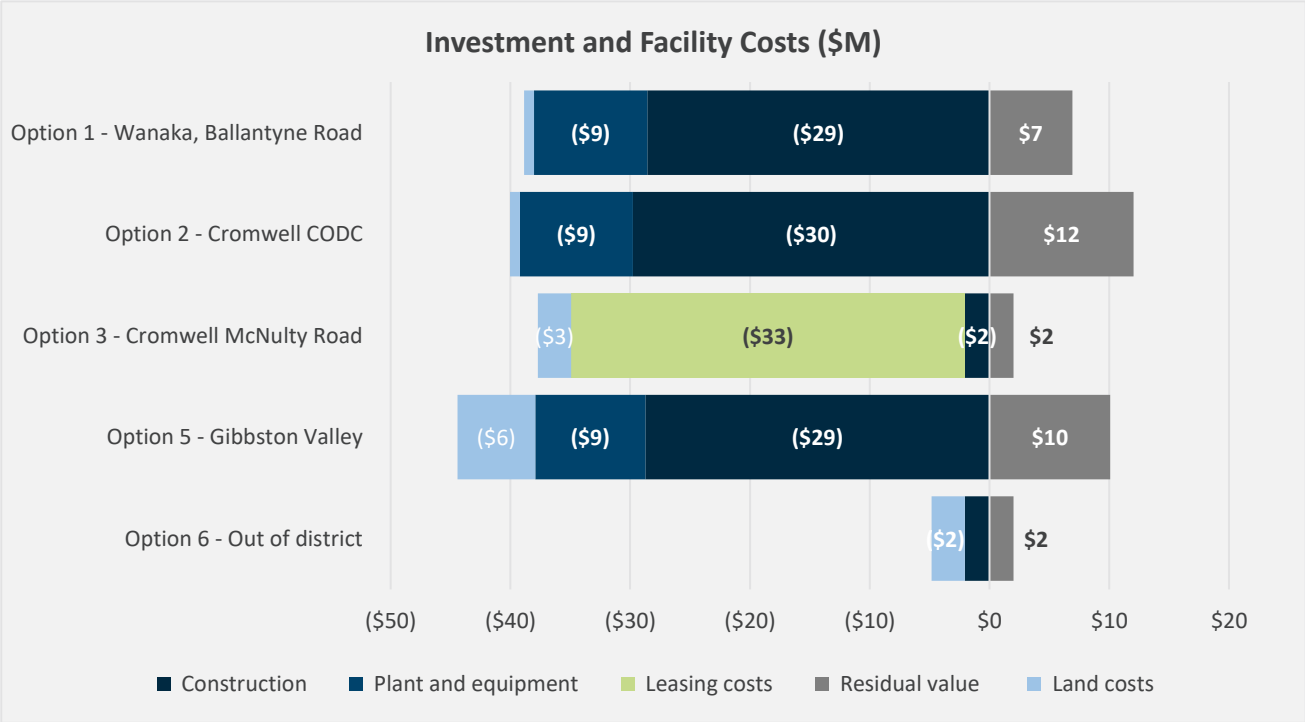


Figure 11 Investment and Facility Costs

Transportation costs are second only to capital costs in their impact on the overall NPV. These costs vary significantly across options due to differences in distances and material handling processes. Key findings include the following.

- Option 1, Wanaka Ballantyne Road: Among the asset-owning options, the facility based in Wanaka incurs the highest transportation costs, driven by the comparatively long-distance materials must travel from consolidation points in the high-volume Queenstown area to the MRF in Wanaka.

- Option 6, out of district: Despite processed materials eventually being shipped to Dunedin across all options, the initial transportation costs to a Dunedin-based MRF are notably higher. This increase is attributed to trailer volumes and compaction, as materials transported to Dunedin are unprocessed and uncompacted, requiring more trailer space per tonne. Note, in option 6 the cost of transporting contaminated material to landfill and transporting commodities from the MRF to port are not included. They are factored into the MRF operating costs charged by the out of district MRF.

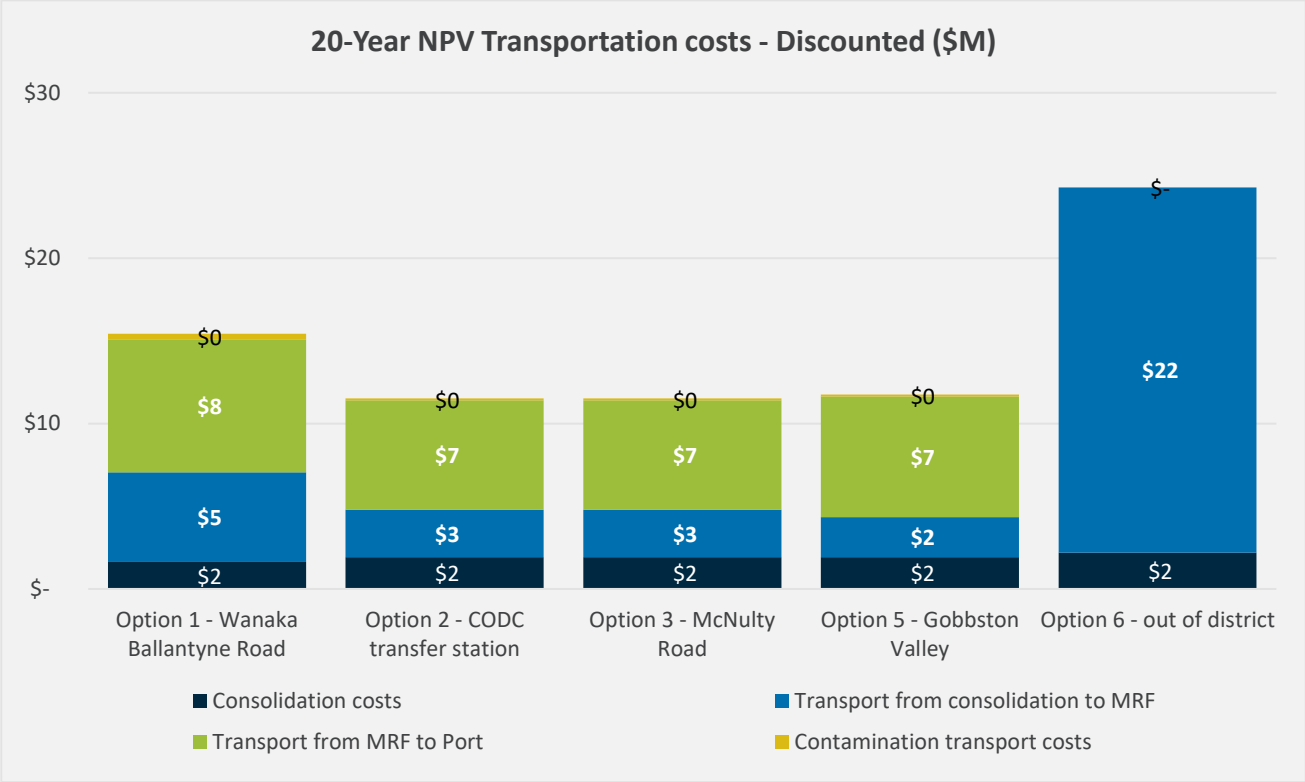


Figure 12 20-year NPV Transportation Costs

9.2 Sensitivity analysis

While the financial analysis provides a detailed comparison of the investment and operating costs associated with the different options, The results are sensitive to key variables.

Key variables that introduce uncertainty to the costs, that have been explored are:

- Discount rate variability: For this cost-benefit analysis, the New Zealand Treasury recommended 5% has been applied, however a lower discount rate could significantly alter this analysis's financial outcomes, favouring options with higher upfront capital outlays such as option 2, CODC transfer station and option 5, Gibbston Valley.
- Fuel cost uncertainty: Transportation costs are material to all scenarios and are directly connected to global fuel prices, which are inherently volatile. Changes in fuel costs would impact all options; however, the out of district option would be most impacted due to the low compaction rate of materials, making this significantly less favourable if fuel prices increase.

- Gate fee volatility: Gate fees represent a significant component of option 6, out of district. These fees are unlikely to remain static and are subject to volatile factors such as market demand and processing capacity, and other councils' financing policies. This means that option 6, out of district becomes significantly less favourable if gate fees increase.
- Capital investment uncertainty: Capital investment is a significant component of the in-district MRF options. These costs remain uncertain until site investigations, stakeholder engagement and consenting can be undertaken. If capital costs rise, option 6, out of district becomes for favourable.
- Residual values (RV): The residual value of assets is unlikely to present a true cash flow to QLDC in year 20, and their values are based on estimated asset appreciation rates exceeding inflation. These unpredictable factors warrant the RV to form part of the sensitivity analysis and result in option 2, CODC transfer station and option 5 becoming less favourable.

The sensitivity of the options to these variables is shown in the table below. The spread of sensitivity is very close and does not provide sufficient information to exclude options except for Option 3, McNulty Road, which has the highest sensitivity range. This makes a compelling case for progressing numerous options at the same time rather than selecting just one option as a recommended way forward.

Table 19 Sensitivity table (average cost per tonne)

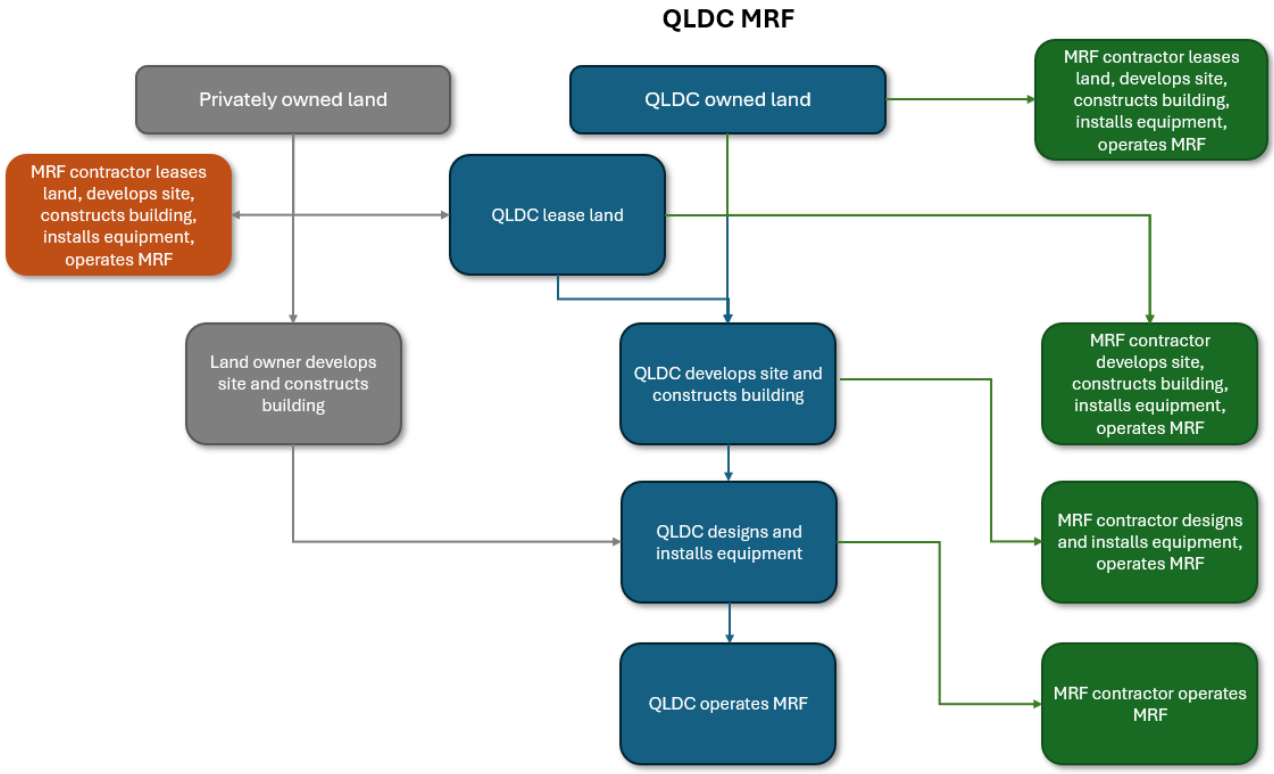
Sensitivity Item	Wanaka, Ballantyne Road Option 1	CODC transfer station Option 2	McNulty Road Option 3	Gibbston Valley Option 5	Out of district Option 6
NPV Baseline	**$298**	**$303**	**$297**	**$293**	**$298**
3% Discount Rate	$306	$293	$349	$288	$355
7% Discount Rate	$291	$308	$257	$294	$254
Fuel Costs +25%	$317	$317	$311	$306	$329
Fuel Costs +50%	$336	$330	$324	$320	$359
Gate Fees +25%	$298	$303	$297	$293	$328
Gate Fees +50%	$298	$303	$297	$293	$359
Capital Investment +25%	$344	$356	$341	$343	$299
Capital Investment +50%	$392	$409	$386	$395	$301
RV Excluded	$336	$370	$308	$349	$309
Sensitivity Range					
Minimum	$291	$293	$257	$288	$254
Maximum	$392	$409	$386	$395	$359
Difference in range	$102	$116	$129	$107	$106

9.3 Phase 2 conclusion

The difference in NPV from the highest to the lowest-ranking options is minor, with a spread of only 3.6%. The options are not able to be separated on a financial basis. The sensitivity analysis shows that changes in key variables can have a significant impact on costs. Option 6, out of district is more sensitive to changes in transportation costs and gate fees than the in-district options. While these costs can be managed in a short to medium term contract, over the long term QLDC could have less ability to control cost increases relative to an in-district options. The in-district options are sensitive to capital cost increase. These impact pay-back periods for capital developments, but once incurred their impact is known i.e. financial uncertainty is lower.

10 Ownership and operating models

There are a wide range of ownership and operating model options for a MRF. The diagram below shows the range of options that are possible for QLDC. The diagram shows options for land ownership, site enabling works, building construction, MRF plant and equipment installation and operation of the MRF. In the following sections commentary is provided on the most likely arrangements for different sites as well as advantages and disadvantages, where appropriate.



10.1 Land, enabling works and building ownership

The site options have different ownership and site access arrangements that are outlined below.

Option 1 – Wanaka Ballantyne Road is owned by QLDC and a new MRF could become part of the broader waste and resource recovery activities undertaken at the site. There are multiple existing lease areas across the site. As the MRF development is part of the broader site development, the most likely future arrangement for the MRF would be for QLDC to continue to own the land and for it to develop the site and construct and own the MRF building, as opposed to leasing an area for development by a MRF contractor. QLDC would procure a consultant for consenting and design of the MRF and then, via that consultant procure, physical works contracts for enabling works and the construction of the building.

While QLDC would lead the consenting, design and construction of the MRF site and building, there would be benefit in having input to the design from the MRF operations contractor as they would be able to advise on matters such as traffic and material flows, building and doorway heights and locations, that ultimately impact the efficiency of their operation. There may also be some benefit in including the MRF operation with the kerbside collection contract.

Option 2 – Cromwell CODC would be developed partly on CODC's current waste transfer station and partly on CODC's newly subdivided land. Access to the site would be via Venning Crescent. The details of a future arrangement for the MRF would need to be worked through with CODC. CODC would continue to own the transfer station portion of the MRF site. QLDC or CODC could then own the land adjacent to the transfer station, with lease agreements in place for the whole MRF site. CODC do not currently have funding in their LTP for a MRF, while QLDC has. It may therefore be preferable for QLDC to develop the MRF, but this would be confirmed through discussions with CODC.

Option 3 – Cromwell McNulty Road is owned by Trojan Holdings Limited and is only available for lease. Trojan Holdings Limited has indicated a preference, as landowners, to develop the part of the site that would be used for the MRF and construct and own the MRF building. QLDC or their MRF operator would then lease the building.

There is the option for QLDC to lease only the ground at McNulty Road, but this is a less common arrangement as it introduces uncertainty regarding building ownership and use at the end of the lease term.

There are risks for QLDC with a lease option. At the end of the lease term, QLDC will have invested in use of the site for its MRF operation, which will be needed for ongoing recycling collection services. QLDC could roll over this lease to avoid having to invest in a new site, but favourable lease terms are more difficult to negotiate at this point with the site owner aware that QLDC has limited alternatives.

Option 5 – Gibbston Valley is available for sale to QLDC. The most likely future arrangement for the MRF would be for QLDC to own the land, develop the site and construct and own the MRF building. Once ownership had been secured, site enabling works and building construction could proceed in the same way as Ballantyne Road or the site leased. There is no clear preference for this site.

Option 6 – out of district MRF is owned by Dunedin City Council and operated by their third-party contractor. This arrangement would continue. Resource consents are currently being processed and their contractor is well advanced in building design and MRF equipment orders.

10.2 MRF plant and equipment and ownership

For the in-district MRF options, the MRF equipment could be designed, installed and owned by the MRF operating contractor or QLDC may also wish to own the equipment. The most common arrangement in New Zealand is for the MRF operating contractor to own the equipment as they are then best placed to balance operating costs, maintenance requirements and reliability. QLDC would have less flexibility to make changes to the equipment once installed, for example in response to changes to kerbside collection material. While there is currently a degree of uncertainty in this area, on balance changes can be made by working with the MRF operating contractor, and therefore, our recommendation would be for the MRF operator to design and install the equipment for a new MRF.

A new MRF is be constructed and the operating risks are unknown. The MRF contractor would be appointed for its skills and experience, and would be best placed to specify, procure and install their preferred MRF plant and equipment based on their operating knowledge. In our view, an O&M only contract would be more suited to an existing MRF.

Under this model we would also recommend the MRF operating contractor be responsible for the revenue from other MRF customers including CODC and the gate fee, including a rebate for the costs associated with the site and building use (lease) would be set by the MRF operating contractor in consultation with QLDC.

QLDC could also take a greater role in managing third-party customers, but MRF contractors tend to have the commercial expertise QLDC could leverage off to maximise revenue, and associated benefits to both QLDC and the contractor.

Under this model, the MRF contractor would be responsible for the revenue from the sale of commodities, although it is likely that there would be some risk sharing arrangement with QLDC for the QLDC recyclable tonnage only. The MRF O&M contractor would be responsible for arranging commodity risk sharing agreements with other MRF customers including CODC. Again, this would leverage the commodity trading expertise that reside with these contractors, maximising revenue for both QLDC and the contractor.

Note for completeness, for option 6, out of district, the plant and equipment are owned by the out of district contractor (EnviroNZ for the Dunedin MRF).

10.3 MRF operation and maintenance contract options

There are two options for MRF operation:

- QLDC operate the MRF in-house with its own staff
- QLDC out-source the operations

In-house operations are highly unusual in New Zealand. Palmerston North operate their MRF with their own staff and Christchurch operate its MRF via its council-controlled organisation, EcoCentral, who in turn employ the staff. Most MRF operations are contracted out to specialists, and this is recommended for QLDC because it aligns with the operating model for other works and services.

10.4 Contract arrangements

There are several O&M contract options available for a MRF, which are outlined in the table below along with the advantages and disadvantages.

Any of the options above are achievable with sufficient timeframes for planning, preparation of detailed specifications and the procurement process. The choice of a preferred contract arrangement will depend on which risks council would like to hold and which to transfer to its contractors. These are best explored in a detailed procurement strategy, then further explored with the market. The options will be narrowed down over time, but the final model may not be known until it is negotiated with QLDC's contractors.

Table 20 Contract arrangement options

Contract Option	Design + Build + Operate	Design, Build + Operate	Design, Build, Operate	Design, Build, Own, Operate, Transfer	Lease + gate fee	Gate fee
Description	Separate design, build and operations contracts (also called design, bid, build (DBB)	Combined design and build contract, separate operations contract	Combined design, build and operate contract	Design, build, own, operate transfer (also called BOOT)	MRF leased by contractor, charge QLDC gate fee	For an existing out of district MRF
Inclusion of: **- site enabling works** **- MRF building** **- MRF plant & equipment** **- MRF operations**	Could be separate or combined Design contracts or Build contracts for enabling works, MRF building, MRF plant and equipment	Could be separate or combined DB contracts for enabling works, MRF building, MRF plant and equipment	DBO could be for all elements or plant and equipment only	DBOOT could be for all elements or for plant and equipment only	All elements included in gate fee contract	All elements included in gate fee contract
Advantages	Provides cost certainty at distinct phases of a project, with clear hold points and clear separation of roles and responsibilities.	Single point of responsibility for capital works	Single point of responsibility for all works results in cost and time efficiency and better performance	No capital investment by council	No capital investment by council	No capital investment by council. Leverages existing capital investment
	Easier to adopt new technology during operating contract term	Easier to adopt new technology during operating contract term	All O&M and commercial risks managed by MRF operator	All O&M and commercial risks managed by MRF operator	All O&M and commercial risks managed by MRF operator	All O&M and commercial risks managed by MRF operator
	Council asset from the start, with ongoing maintenance and renewal programme, beyond initial operating life	Council asset from the start, with ongoing maintenance and renewal programme, beyond initial operating life	Council gains an asset at the end. Recognises the site will continue to be used beyond initial 20-year operating life (reuse some equipment)	Suits equipment expected to be obsolete at end of contract term (some but not all MRF equipment, building and land last longer)		

Contract Option	Design + Build + Operate	Design, Build + Operate	Design, Build, Operate	Design, Build, Own, Operate, Transfer	Lease + gate fee	Gate fee
Disadvantages	Requires capital investment by council.	Requires capital investment by council.	Requires capital investment by council	Less transparency on equipment installed and maintenance standards than the DBO option	Less transparency on equipment installed and maintenance standards than the DBOOT option	Reliant on MRF continuing to grant QLDC access to equipment at end of contract term
	Multiple procurement steps slowing process, adding cost. Potential for conflict between designer and contractor.	Disconnect between construction and operability, with very limited scope to change facility once built.	Reduced transparency on equipment installed and maintenance standards.	Typically results in "sweating the assets" at end of contract period, unless specific standards for equipment at handover	Limited visibility of type of equipment installed (noting all MRFs will need to respond to kerbside material changes)	Limited visibility of type of equipment installed (noting all MRFs will need to respond to kerbside material changes)
	Disconnect between design, constructability and operability, with scope change more difficult to manage.	Council responsible for operating and maintenance risk associated with design and construction		Contractors may not have capital funds to invest	Contractors may not have capital funds to invest	Difficult to direct changes to material processed (noting all MRFs respond to same material changes)
	Council responsible for operating and maintenance risk associated with design and construction				Difficult to direct changes to material processed (noting all MRFs respond to same material changes)	

10.5 Likely options

Not all contract options are possible for all site options. The table below shows a summary of the most likely land contract arrangements for each option. Note, while QLDC would most likely develop most of the site and building in options 1, Wanaka Ballantyne Road, option 2, CODC transfer station and option 5, McNulty Road, input from the MRF operations contractor would be sought for the design. These contracting arrangements have been taken into account in further assessing the site options as of phase 2.

Table 21 Most likely MRF land and contract options

Option	Contract options
Option 1: Wanaka Ballantyne Road Option 2: Cromwell CODC Option 5: Gibbston Valley	All contract options except gate fee
Option 3: Cromwell McNulty Road	Trojan Holdings Ltd develops site and building or its MRF contract, QLDC leases building for MRF. Gate fee contract
Option 6: Out of district	Gate fee contract with MRF O&M contractor

11 Phase 2 shortlist assessment

Having undertaken the stakeholder engagement and updated the financial models, the shortlisted options were then further assessed against non-financial assessment criteria. These criteria were developed to address the risks and constraints identified at the end of phase 1.

11.1 Phase 2 assessment criteria

The following assessment criteria were established for the assessment of shortlisted options:

- Achievability risk
  - Simplicity of establishing ownership and operating arrangements
  - Time required to deliver arrangement & site (title, services, resource consent, geotech investigations, site works, MRF build)
- Cost control risk
  - Cost certainty for Council
  - Access to expertise in MRF operation
  - Access to external capital funding and grants
- Commercial risk
  - Limits exposure to revenue risk from recycling commodity prices
  - Limits exposure to revenue risk associated with gate fees from other users (CODC, commercial)
- Resilience and sustainability risk
  - Certainty of facility availability for QLDC (once built)
  - Providing access to a facility for CODC and commercial users
  - Flexibility to respond to changing demands for recycling services
- Service delivery and strategic alignment risk
  - Supports ongoing review and improvement of service delivery
  - Simplicity of governance and contract
  - Aligns with delivery model used for other aspects of waste services

11.2 Phase 2 scoring

The table below provides the agreed scores following the in-person workshop on 2 July 2024 and subsequent discussions.

Table 22 Assessment scoring phase 2

#	Criteria	Weighting	Option 1 Wanaka - Ballantyne Road	Option 2 Cromwell - CODC site next to transfer station	Option 3 Cromwell - 147 McNulty Rd	Option 5 Gibbston Valley - The Yards (Victoria Flats Road)	Option 6 Out of district
1	Achievability	20%	3	3	3	2	4
2	Cost control risk	20%	3	3	2	3	2
3	Commercial risk	20%	3	3	2	3	5
4	Resilience and sustainability risk	20%	5	4	3	4	2
5	Service delivery and strategic alignment risk	20%	4	4	2	4	3
	Total - weighted scores		18	17	12	16	16
	Rank - weighted scores		1	2	5	3	3

11.2.1 Achievability

The following key points are relevant to the scoring for achievability for:

Option 1, Wanaka Ballantyne Rd:

- QLDC owns the land in Wanaka, but there is flexibility around ownership of building, P&E and operating arrangements.
- It is estimated that this option would take a minimum 18 months to deliver (geotech, resource consents, site works, build, install MRF equipment, procurement of operating agreement) January 2026.
- This is seen as the simplest of the arrangements to put in place.

Option 2, Cromwell CODC:

- Complex due to CODC and Cromwell Community Board decision making, although both consider this to be a great use of the land and a good solution for the mixed recycling from CODC.
- Early indications for CODC suggest that all ownership or operating options could be considered.

- It is estimated to take three years to operation
  - Subdivision design phase starts 1 July 2024
  - Civil construction starts 1 July 2025
  - Titles expected in July 2026. Solution could be in place by July 2027.
- Could be a complex arrangement to put in place.

Option 3, Cromwell McNulty Road:

- Private land and existing building owner.
- Site is available now with services and weighbridge.
- Landowner reserves right to choose which operator would install and operate a MRF.
- Lease/licence to occupy over long period 15-20 years.
- Resource/building consents and procurement required first.
- Estimate solution could be in place 12 months after decision (as early as July 2025).
- More complex arrangement, constrained by the size of land, brings score down.

Option 5, Gibbston Valley:

- Landowner prefers to sell the land.
- Titles expected to be issued March 2025.
- Solution could be in place by March 2026. but a higher degree of uncertainty around timeframes for each step (consent, titles, services), reducing the score.
- Complexity of QLDC's relationship with land owner could create further delay in establishing the arrangement.

Option 6, out of district :

- Resource consents are currently being processed by ORC.
- Procurement process for MRF components has commenced.
- Solution expected in early 2026. Could also use Timaru MRF, once the Dunedin facility is operational. Similar gate rate ($200 per tonne + disposal cost for contamination).
- Reasonably simple arrangement to establish for MRF. Require in district consolidation points - which also need to be consented, reducing score.

11.2.2 Cost control risk

The following key points are relevant to the scoring for cost control risk for:

Option 1, Wanaka Ballantyne Rd:

- No land costs.
- Site preparation costs are the biggest uncertainty until geotech is completed.
- Good access to MRF operation through third party.
- Good access to external capital funding - MfE would support application.

Option 2, Cromwell CODC:

- Land purchase or lease price unknown, although CODC and the Cromwell Community Board are keen to explore all options.
- Land and site preparation costs are biggest uncertainty.
- Good access to MRF operation through third party.
- Possible access to external capital funding for MRF equipment - MfE support application.

Option 3, Cromwell McNulty Rd:

- Lease costs and operating model are biggest uncertainty.
- Landowner may not be open to all MRF operators operating on site.
- A price premium may be applied to the land.
- Less likely to get MfE funding, more restricted procurement due to operator's preferences.

Option 5, Gibbston Valley:

- Land costs approx. $400 m2.
- Cost uncertainty with geotech.
- Buying land in addition to Wanaka already being purchased.

Option 6, out of district:

- Reliance on third party for long-haul transport and MRF operating costs.
- Limited cost control long term, even with long term agreements in place.
- Limited capital funding associated with consolidation points, but unknown how capital costs for external MRF will be passed on through gate fee.
- Reduced ability to influence costs and limited alternatives once locked into long term agreement.

11.2.3 Commercial risk

The following key points are relevant to the scoring for commercial risk for:

Options 1, Wanaka Ballantyne Rd 2, Cromwell CODC and 5, Gibbston Valley:

- Reliant on commercial recyclables and CODC recyclables coming to MRF to help fund site.

Option 3, Cromwell McNulty Rd:

- Some restrictions on the financial own and operate model that can be put in place, reducing the score.

Option 6, out of district:

- No commercial risk, council only pays for its own material to be hauled and processed rather than being responsible for third party material.

11.2.4 Resilience and sustainability risk

The following key points are relevant to the scoring for resilience and sustainability risk for:

Option 1, Wanaka, Ballantyne Road:

- Site owned by QLDC, who have control over site's use.

Option 2, Cromwell CODC:

- QLDC might not own the site. Ownership may sit with CODC or public ownership.

Option 3, Cromwell McNulty Rd:

- Owner restrictions on potential suppliers would limit procurement options.
- Also only a lease site, QLDC would not own it.

Option 5, Gibbston Valley:

- Once land purchased for MRF, it is available to QLDC long term.

Option 6, out of district:

- Decision to continue operating the MRF sits with out of district owner.
- QLDC have less long-term control over type of materials to be processed, contamination levels and sustainable and ethical export markets.

11.2.5 Service delivery and strategic alignment risk

The following key points are relevant to the scoring for service delivery and strategic alignment risk for:

Option 1, Wanaka, Ballantyne Road:

- Greatest opportunity to influence service delivery.
- Consistent with other council contractual arrangements.

Option 2, Cromwell CODC:

- More complex governance and contract model.
- Less influence on changes to service delivery, but partner is also public sector with same drivers.

Option 3, McNulty Rd:

- Limited ability to make changes to MRF operation.
- Still simple contract to manage. Consistent with other delivery models.

Option 5, Gibbston Valley:

- Greatest opportunity to influence service delivery.
- Consistent with other council contract arrangements.

Option 6, out of district:

- Limited ability to make changes to out of district MRF.
- Simple contract to manage. Consistent with other council delivery models.
- Consideration to be given to the wider regional opportunities particularly if the region moved towards a regional contract, the operator may decide what MRF the material goes to, e.g. Timaru, Invercargill, Dunedin.

11.3 Phase 2 summary, sensitivity and recommended options

The options assessment in phase 2 presented the following ranking based on weighted scores:

- 1st - Option 1, Wanaka, Ballantyne Road (weighted score of 18)
- 2n - Option 2, Cromwell CODC (weighted score of 17)
- 3rd - Option 6, out of district (weighted score of 16)
- 3rd - Option 5, Gibbston Valley (weighted score of 16)
- 5th - Option 3, Cromwell McNulty Road (weighted score of 12)

Overall, the analysis has shown that it is difficult to separate the options. Minor changes to any of the scores result in a shift in the options ranking. Only option 3, Cromwell McNulty Road, scores sufficiently lower ruling it out. It is the least flexible option due to the site owner's desire to maintain control over site activities. The lease arrangement also introduces long term cost uncertainty with reliance on the site owner for the MRF process, reducing QLDC's bargaining position when renegotiating future site leases. It is recommended that this option is excluded from further analysis.

11.3.1 Ballantyne Road

The highest scoring option is option 1, Wanaka Ballantyne Road, with 18 points closely followed by option 2 Cromwell CODC on 17 points. Both these options provide the best scores for cost control risk, commercial risk, resilience and sustainability risk and service delivery and strategic alignment. Option 1, Wanaka Ballantyne Road scored slightly better because QLDC already owns the land.

Option 1, Wanaka Ballantyne Road is the option that is most advanced from a development perspective – QLDC has already invested in the site, owns the land and have commenced geotechnical and planning assessments for the site (because it will also be used for an upgraded Wanaka transfer station). The site has been purchased with the intention of being used for waste and resource recovery activities and building the MRF on this site, if it can be done cost-effectively, aligns with this purpose.

There are no compelling reasons not to pursue Option 1, Wanaka Ballantyne Road as the preferred in-district MRF option and therefore it is recommended the development of this site continues to be progressed.

There are known challenges with this option and there are likely to be geotechnical and site contamination challenges to overcome given part of the site was used as a landfill in the past and the site is adjacent to river flats. The additional costs for the development of this site have been included in the estimate as a contingency. The extent of these challenges and the associated cost to remedy them cannot be estimated without further engineering, environmental and planning investigations. Stakeholder mapping and early engagement would also need to get underway. These investigations would be required for any site being

considered for a new MRF, and what might be uncovered during investigations remains unknown for any site.

11.3.2 In-district back-up option

There is benefit in having back up site options available if the costs associated with developing the Wanaka Ballantyne Road site become prohibitive. Option 2, Cromwell CODC transfer station has the second highest score and therefore is recommended as the back-up site. Out of district may also become a viable long-term option if the costs of developing an in-district MRF become too high or if QLDC wishes to defer capital investment to future years. On balance, combining both capital and operating costs, the in-district and out of district options have similar cost profiles. It is recommended that long term use of an out of district remain as a backup option for QLDC.

11.3.3 Out of district

Option 6 out of district, scored the highest for achievability because this option is already in progress and further towards being operational. There are some challenges with this option, such as procuring a transport contract and securing the gate fee. Option 6, out of district has a very different cost structure to the in-district options. It is easy to achieve and has low commercial and financial risk in the short term. However, longer term the ability to control costs and rely on this option being available reduces. For this reason, this option is recommended as a short to medium term solution only.

The out of district MRF options only become available once Dunedin has built its new MRF at Green Island. Either there will be capacity at the Green Island MRF or there will be freed up capacity at the Timaru MRF, which Dunedin (and Central Otago) are using short-term while their MRF is built. The Green Island MRF is expected to be operational by July 2026.

11.3.4 Consolidation sites

All options will require some consolidation of material prior to haulage to the MRF – both in-district and out-of-district options. For Ballantyne Road, consolidation would only be required by QLDC in Queenstown, while out-of-district would require consolidation in both Wanaka and Queenstown. Short-term options for consolidation could include:

- Redevelopment of Glenda Drive could be delayed and the MRF used for consolidation in Queenstown.
- Land in the Gibbston Valley could be purchased and used for this purpose.
- There may be parts of Wanaka transfer station site that can be made available.
- There may be commercial land or buildings that can be leased for consolidation.

It is recommended that all these options are explored in the next phases of MRF planning.

Note, CODC currently use their Alexandra transfer station for consolidation of material prior to haulage out of district.

12 Funding options

QLDC have allocated $70 million in the 2024-2034 Draft Long Term Plan for development of waste facilities in Wanaka and Queenstown, with the majority of this investment allocated to the construction of a new in-district MRF.

While Council has capital funding allocated to the MRF, with capital funding currently tight for Council, there may be benefit in delaying the timing of this investment through an extended timeframe for the out of district option.

There is the potential for QLDC to seek funding from the contestable Waste Minimisation Fund for the new in-district MRF. MfE favour applications that provide for facilities where neighbouring districts collaborate on infrastructure development. In this case, QLDC is building the MRF on behalf of CODC and commercial recycling customers, as well as meeting its own needs. It is recommended that QLDC speak with the MfE investment team early to assess what would be required in terms of their application process.

There may be interest in co-investment in the MRF from other funders such as iwi. Their investment would be on the basis that they received a favourable return on investment, which may reduce overall affordability of this funding option.

13 Procurement and implementation approach

The following table provides a suggested timeline of procurement activities for a preferred pathway alongside other solid waste service and procurement timelines. This is consistent with Councils philosophy and desire to retain ownership of core land and buildings for the delivery of its services.

It also shows a possible consenting, design and construction pathway for the Ballantyne Road site, the timing of procurement for the interim out of district contract and MRF operations contract, and how this contractor might input into the Ballantyne Road MRF development.

While this is not the only approach and not a fixed programme of activities, it provides an indication for how these interrelated development and procurement activities could be aligned. This approach would be explored further in the development of a procurement strategy.

Table 23 Implementation timeline and procurement

Timeline	Jul-Dec '24	Jan-Jun '25	Jul-Dec '25	Jan-Jun '26	Jul-Dec '26	Jan-Jun '27	Jul-Dec '27	Jan-Jun '28	Jul-Dec '28	Jan-Jun '29	Jul-Dec' 29	Jan-Jun '30	Jul-Dec '30	Dec-June '31	Notes
Current solid waste services contract															
Solid waste services contract procurement															Expiry initial term, 31 December 2026, under review
Solid waste services contract mobilisation															
New solid waste services contract															
Organics collection procurement															
Organics collection mobilisation															
Organics collection commences															Council decision, start July 2026 earliest
Out of district procurement															Consolidate, haul and process. Procure separately or alongside waste services contract
Out of district MRF arrangement															Early access if Glenda Drive fails, from July 2026
Ballantyne Road investigations															
Ballantyne Road design & consent															
Ballantyne Road enabling works															Could be part of MRF operator's contract, or they provide input
Ballantyne Road building construction															Could be part of MRF operator's contract, or they provide input
MRF O&M, P&E (and building) procurement															Alongside waste services contract, could be different contractor
MRF operator input to design and consenting															Timing of solid waste services procurement allows this
MRF P&E order and installation															
New contractor operates new MRF															

14 Risk assessment

A high-level risks assessment has been carried out for the project. The table below shows the current risks and the appropriate mitigation measures.

Table 24 High level risks and mitigation

#	Risk description	Mitigations (Current and Planned)
1	Cost of geotechnical, contaminated land or environmental mitigation measures for Ballantyne Road MRF are higher than budgeted.	• Reassess in-district MRF option against long-term out of district option • Reassess alternative MRF site (Gibbston Valley) • Regularly review project budgets against LTP allocation
2	Access to out of district MRF delayed due to construction delays for Dunedin MRF.	• Ensure overlap between current Glenda Drive MRF operation and out of district solution
3	Unable to secure consolidation site for transporting recyclables to out of district MRF.	• Early engagement with contractors on consolidation methodology and location for consolidation • Early planning for identified consolidation options
4	Costs of out of district disposal (consolidation, haulage or MRF gate fee) are higher than budgeted.	• Early engagement with contractors to secure pricing
5	Funding priorities change for Council and /or alternative funder resulting in delays in the construction and operation of the new MRF.	• Maintain options such as out of district MRF, which do not require capital funding • Ensure funding agreements are robust and legally tight to prevent alternative funder from pulling out
6	Output quality of the MRF results in no markets purchasing recyclables and material being landfilled.	• Contracts with strong KPIs • Supplier negotiation • Scope change to service
7	Multiple service changeovers with MRF operation and other waste services occurring concurrently.	• Contract implementation plans • Communications advising of change • Contracts and KPIs
8	Private collectors not performing or withdrawing from collections in areas furthest away from new MRF location.	• Early discussions and negotiations with private collectors
9	Difficulty in contractor employing staff for relocated MRF leading to increased costs and potential loss of revenue.	• Contracts with strong KPIs • Supplier negotiation • Scope change to service

#	Risk description	Mitigations (Current and Planned)
10	Uncertainty for customers of private recycling collectors.	• Robust planning and execution of customer plan to support customers • Dedicated project resources for communication and engagement
11	Council unable to meet service level for recyclables processing.	• Current council processes and contracts with KPIs • Confirming budget and resource
12	Negative media coverage of new MRF location resulting in increased customer complaints and queries, and negative impact on council reputation.	• Existing council relationships with media and internal resources • Media training • Communications and media plan • Identify high risk areas (i.e. Multi Unit Developments) and develop solutions
13	Changes in legislation such as a container return scheme or changes to standardised materials, result in redundant MRF or overcapacity in the region.	• Early communications with MfE to plan for this occurrence
14	Delay in commissioning and operating the MRF resulting in recyclables being landfilled.	• Maintain option of out of district processing until the in-district MRF operational • 12 months' notice given to incumbent contractors • Monitoring of contractor mobilisation • Updating the contractors' operational plans to show managing this risk

15 Recommended way forward

The overall preferred option is for QLDC to build a new in-district MRF on the land adjacent to the Wanaka transfer station, on Ballantyne Road in Wanaka. This option has challenges, but it best manages overall risk to Council.

The Ballantyne Road option scored consistently well in the assessment, but other options scored almost as well. Changes to weightings or key assumptions in the financial modelling had a significant impact on the ranking of options. While this has made it difficult to rule out options, at no time has Ballantyne Road been on the list of sites that would be ruled out.

Given there is a risk that Ballantyne Road becomes too expensive to develop or takes longer than anticipated to develop, there is a need for backup options. In order to give QLDC more time for the development of Ballantyne Road it is recommended Council enter a short-medium term out of district processing contract. The reliability and cost uncertainty risks that reside with this option long term can be mitigated in a shorter-term contract.

Given the risk of fluctuations in transportation costs over time and uncertainty of an out of district gate rate in the long term, further back up options that would enable an in-district solution should also be considered. It is recommended that the use of land adjacent to CODC's transfer station is explored for a backup option for an in-district MRF.

Based on the recommendations above, the next steps are listed below. The actions fall within three workstreams.

Progressing in-district MRF (Ballantyne Road and back up)

- Commencing engineering, environmental and planning investigations for a new MRF at Ballantyne Road in Wanaka, to enable risks to be understood and quantified.
- Complete a detailed carbon assessment for in-district versus out of district options including transport.
- Prepare a detailed procurement strategy for the in-district and out of district MRF, as well as wider waste contract renewal. Refine contract options and engage with the market as part of this process. Note, options for design and installation of enabling works, MRF building and MRF plant and equipment all need to be assessed as well as MRF operation options.

Securing short-medium term out of district solution (transportation and processing)

- Undertake further investigations with Timaru District Council and Dunedin City Council (or EnviroNZ) to understand contractual arrangements for a short-medium term out of district solution.
- Procuring contracts for transportation and processing QLDC's recyclables at an out of district MRF. Noting these are relatively simple services to procure.

Confirming consolidation arrangements (for both Ballantyne Road or out of district)

- Exploring consolidation options for both the Wanaka Ballantyne Road, and out of district options to ensure assumptions in the financial model are valid and suitable sites can be secured.
- Confirming short-term recyclables consolidation arrangements, within the Queenstown District or with CODC at Alexandra.

Appendix A Financial model for options

The full financial model has been supplied as a separate document. A summary of the key aspects of the financial model have been provide in this appendix.

Methodology

The methodology underpinning the financial projections is designed to provide a long-term view of the financial implications of each MRF option over a projected period of 20 years. This period commences in the 2024/25 financial year, designated as 'year 0'. This initial year is assumed to reflect when all construction and capital expenditures are expected to be incurred, setting the foundation for the subsequent operational phases of the MRF.

For all options, operational costs are projected to begin in the following financial year, 2025/26, allowing for a standardised starting point. Values within the model reflect consolidated costs for all users and are not exclusive to QLDC (other users include CODC and commercial entities).

A key assumption is the exclusion of glass from the tonnage processed by the MRF. This is to reflect the expectation that the glass from CODC will continue to be processed at Parkburn Quarry in Cromwell and that the glass from QLDC will be consolidated in Queenstown and Wanaka and then transported to Auckland for re-processing back into glass bottles and jars.

The financial model is divided into several core components, each tailored to address specific aspects of the MRF options. These are as follows:

Investment and Facility Costs

- The foundational cost estimates for constructing the MRF and associated plant and equipment derive from the Community Eco Park Concept Design Report prepared by Waste Management in December 2021. These figures are adjusted for inflation to reflect 2024 values based on the construction producer price index. Further judgemental adjustments are made for locations with existing infrastructure that can reduce initial capital costs.
- BJ Scarlett provided equipment cost estimates based on a MRF processing five tonnes of material per hour.
- Cost estimates for all options are tailored to a standard MRF site size of 11,000m^2 and a MRF facility size of 2,4000m^2.
- Core construction costs have been assumed to remain constant across different locations within the QLDC and CODC areas.
- In areas lacking existing recycling consolidation facilities, such as Wanaka, new development is required. It is estimated that constructing a new consolidation point would cost approximately $1,000,000, with a corresponding land purchase of 2,000m^2 where required.
- Where new land acquisition is necessary, costs are calculated based on recent real estate market data provided by Andrew Hyndman of Q Property, expressed in dollars per square meter.
- Lease costs at 6% of the estimated initial cost of land and facilities were provided by Andrew Hyndman of Q Property based on market estimates.

MRF operating costs

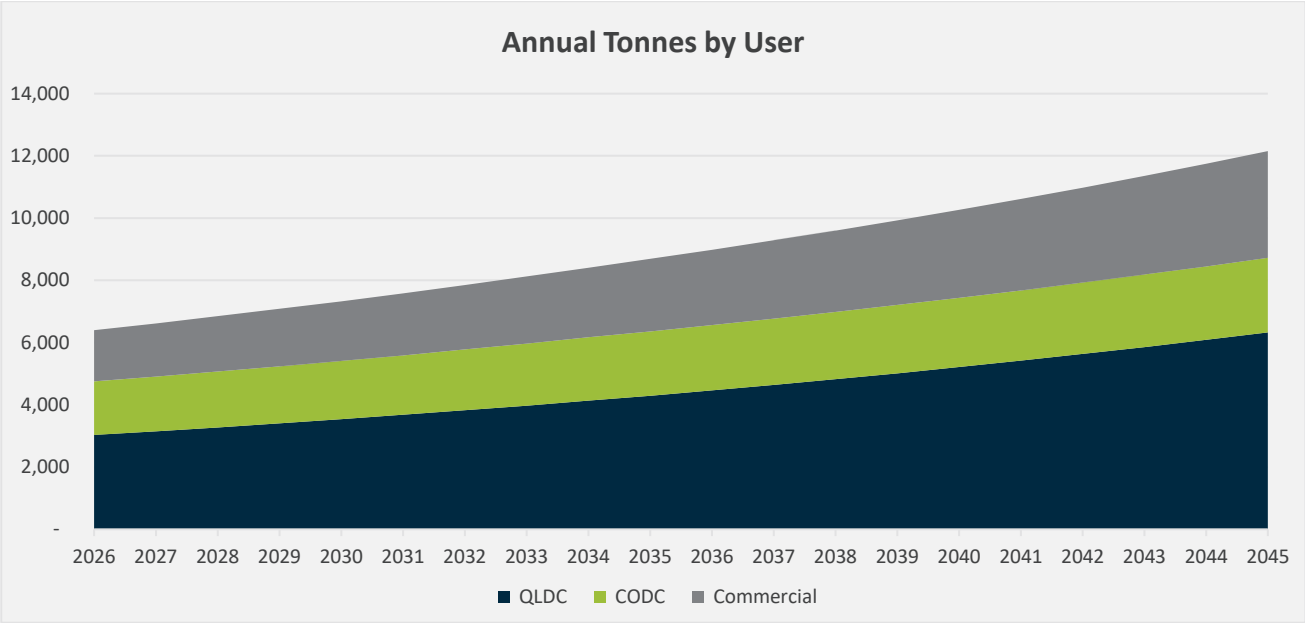
- Operating costs for the MRF are assumed to be consistent across all options located within the district. Costs are estimated based on the current schedule of prices from the Queenstown MRF, which includes fixed and variable expenses per tonne of processed material. We have not accounted for any modifications to allow processing changes due to a CRS or change in standard materials. These would be common for all options.
- For options where the MRF facilities are not owned by QLDC and are located out of district, an operating cost structure based on gate rates per tonne has been applied.
- In scenarios where the MRF is owned by QLDC, revenue is projected based on the amount of recyclables processed, the current market prices for recycled commodities, and the revenue-sharing agreements in place.
- It is assumed that approximately 17% of the mixed recyclables received at the MRF will be contaminated and therefore not processable. These materials will require disposal at the nearest landfill, costing $200 per tonne.

Transportation costs

- Transportation costs are incurred at various stages and are calculated based the following:
  - Transport from collection sources to consolidation points
  - Transport from consolidation points to the MRF
  - Transport of processed materials from the MRF to the port
  - Transport of contaminated material from the MRF to landfill
- The distances for each of these transportation stages are calculated based on the specific locations of the source points, consolidation points, MRF, and final shipment destinations. Each option has its unique set of distances, to which a cost per kilometre for a truck and trailer is applied.
- It is assumed that the level of material compaction varies before and after processing at the MRF. This variation affects the volume of materials that can be loaded into a truck and trailer, impacting transportation efficiency.

Annual tonnes

- Based on most recent actual MRF tonnes.
- Projected increases in recycling tonnage are aligned with the population growth expectations for the regions served by QLDC and CODC, as detailed in Appendix B.



Phasing of assessment

The financial models were prepared in two phases, with Phase 1 designed to develop a shortlist based on higher-level inputs, and Phase 2 designed to offer greater accuracy on the shortlisted options. The key changes between options are detailed below.

Item	Phase 1	Phase 2
Asset owning or leasing delivery model	All options are asset-owning	Tailored to the specific options notably, Option 3, Cromwell McNulty Road transitions from asset owning to leasing
Tonnage projections	Based on actuals to June 2023	Include actuals to March 2024
Transportation distances	Generic based on consolidation point or MRF region	Specific to the exact locations of the consolidation point or MRF
Out-of-district gate fees	Market estimate	Estimate from MRF operator for planning purposes
MRF structure size	Initial estimates based on the Eco Park Concept Design Report and set at 4,000m^2	Updated for project-specific factors by BJ Scarlett and set to 2,400m^2

Appendix B Financial assumptions

Option	Status quo Option 0	Wanaka Ballantyne Road Option 1	Cromwell CODC site Option 2	Cromwell McNulty Road Option 3	338 Kingston Road Option 4	Gibbston Valley Option 5	Out of district Option 6
Locations							
MRF Location	Queenstown	Wanaka	Cromwell	Cromwell	Queenstown	Cromwell	Dunedin
Port Location	Port Otago	Port Otago	Port Otago	Port Otago	Port Otago	Port Otago	Port Otago
Landfill Location	Vic Flats	Vic Flats	Vic Flats	Vic Flats	Vic Flats	Vic Flats	Green Island
Capital investment							
Land purchase	No	No	Yes	Yes	Yes	Yes	No
Earthworks	No	Yes	Yes	Partial – clean and fill not required.	Yes	Yes	No
Civil works	No	Partial – limited water infrastructure required.	Yes	Partial – limited hard surfaces and water infrastructure required.	Yes	Yes	No
MRF construction	No	Yes	Yes	Yes	Yes	Yes	No
Consolidation point construction	No	No	Yes	Yes	Yes	Yes	Yes
Property and equipment purchase	No	Yes	Partial - weighbridge not required	Partial - weighbridge not required	Yes	Yes	No

Component	Input
Inflation	
Annual inflation	3%
Discount rate - Real	5%
Annual population growth	
QLDC	3.9%
CODC	2.1 % (2025-2033), 1.5% (2034-2044)
Debt funding terms	
Interest rate	5.0%
Loan term (years)	20
Land	
Site size m2	11,000
Cost per m2 - Queenstown	$1,550
Cost per m2 - Cromwell	$600
Annual land appreciation – Queenstown	6%
Annual land appreciation – Cromwell	5%
Construction[3]	
Building size	2,400
Cost per m2	$3,038
Annual increase in replacement cost	4%
Useful life (years)	
MRF Facility	50
Property and equipment	20
Other construction margins	
Preliminary & general	10%
Developer margin	8%
Contingency	9%
Consent fees	1%
Revenue Share	
MRF commodity revenue share	50%
Transportation costs	
Consolidation cost per tonne	$20
Truck and trailer cost per kilometre	$6
Uncompacted tonnes per truck	7
Compacted tonnes per truck	20

[3] Other detailed construction costs not listed relate to earthworks and civil works.