

Palmerston North Wastewater Best Practicable Option (BPO) Review

DRAFT Interim BPO Assessment & Recommendation
August 2021



Prepared for Palmerston North City Council by:



QUALITY STATEMENT

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Executive Summary

This Report has been prepared to assist the Council in identifying options that may be considered as the final Best Practicable Option (BPO). This Report includes the following:

- Overview of the BPO Review process since 2017
- Methodology for the final assessment phase, including:
 - The outcome of 7 assessments and technical recommendation for assessment weighting
 - The BPO Assessment of options against Condition 23B criteria.
- Wider considerations in deciding on a BPO solution
- Overall technical recommendation for the BPO

The Project Team¹ has worked collaboratively since 2017 to develop and refine the shortlist options. At each stage, this has progressed to a level that assures a robust assessment process can be undertaken. This has been peer reviewed by legal counsel and technical experts at key stages of the Project since 2017.

Rangitāne o Manawatū are Mana Whenua in Palmerston North and provide both governance and technical leadership on this Project. The Commitment of Iwi² to contribute throughout this process has been integral to the Projects progress and ultimately.

Ultimately, this Report provides the Council with an overview of the assessment outcomes and has been prepared to allow Council to make an informed decision on a preferred BPO. This will subsequently be reported to Horizons Regional Council as a requirement of the existing resource consent Permit 101829. Following this decision, the Council must

progress to the lodgement of resource consent by 1 June 2022.

RMA Requirements

The RMA requires an assessment of alternatives (options) to be undertaken for specific circumstances. On the basis the BPO will be applied for as a new Resource Consent from the Regional Council (Horizons), an Assessment of Environmental Effects (AEE) is required.

Best Practicable Option Process

The BPO process has involved three major options evaluation process since 2017, requiring commitment from the Council over two terms to provide direction and ultimately a decision on the BPO. The process has required technical expertise, Iwi involvement, Stakeholder feedback and peer review throughout this time. At the final phase of the assessment, it is critical that any option being considered, will meet the requirements of Condition 23B of Permit 101829.

Technical Recommendation

It is recommended that an Option is confirmed with the highest treatment level (Level 4) with a combined discharge to River and Land. The Land component of the solution will be implemented over time. This represents a combination of Options 2, 6 and 7. By adopting this as the BPO, Council may continue to work with Rangitāne and Iwi in the Region in partnership in consenting a successful BPO solution. This will also contribute to meeting several key messages from the community and stakeholders.

¹ Made up of Councils Project Manager, Chief Engineer, Project Chairperson and leading technical experts appointed to deliver the technical recommendation for a BPO

² Refers to multiple Iwi. Iwi involved in the process is included in Section 2.3 of this Report.

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1 Introduction

1.1 Purpose

The purpose of this report is to summarise the process that was followed to assist Palmerston North City Council in determining a recommended Best Practicable Option (BPO) for managing the future of the city's wastewater. The BPO is required to be determined in 2021 and a new resource consent applied for by June 2022 (HRC Permit 101829).

This Report captures the following:

- Project background, including a brief overview of the methodology adopted to establish a long list through to the current short list of options, Iwi and community involvement contributing to the process.
- The methodology used to assess the shortlist options including methodology, assessment outcomes and assessment of options under the BPO Test Criteria (Condition 23B of Permit 101829).
- The outcome of engagement (to date) with Iwi within this assessment process.
- To Be Confirmed - The outcome of Council Meeting (18th August 2021) to inform the BPO Recommendation.
- To Be Confirmed - Recommendation for the BPO.

This report has been prepared in two phases. The first phase is to present the outcome of 7 BPO assessments and the methodology for determining options to progress into the BPO Assessment Criteria. At this point, the Report will be presented to the Council at a meeting on the 18th of August 2021. The intention is to work through technical and recommended 'weightings' scenarios and the assessment of options through BPO Criteria. It is not clear if Council will be in a position on 18 August to agree on a recommended BPO and therefore, the Final BPO Recommendation (Phase 2), will be made on the 1st of September for Council to confirm a decision. Following this, the BPO will be confirmed with Horizons Regional Council (HRC).

1.2 Background

Technical reports (refer Section 1.4) and the involvement of experts through a series of workshops has been undertaken throughout this final phase of the BPO Review and assessment process. Their involvement includes MS Teams workshops, iterative scoring and review, technical support and drafting of advice, and attendance at the Council Meeting on the 18th of August 2021.

Engagement with Iwi throughout the Manawatū Region as occurred throughout the BPO Review Process. Rangitāne o Manawatū are mana whenua in Palmerston North and have maintained strong leadership within the Project Steering Group and in terms of input into all technical aspects of the Project since 2018. Iwi within the wider Region, including Ngāti Apa, Muaupoko and hapū leaders representing Ngāti Raukawa, have been involved in the review of technical information, preparation of cultural values assessments and undertaking an independent MCA.

Multiple phases of engagement with community and stakeholders has been undertaken by Council since 2018. This has included two phases of extensive community feedback sought in

2020 and 2021, working around the impact of COVID-19 lockdown in early 2020 and ongoing. Direct engagement with key stakeholders in the rural sector, businesses, trade waste customers and environmental interest groups within the community and wider region, has also continued throughout the Project.

Figure 1 below illustrates the high-level Project Programme, including milestone dates for the BPO decision and Lodgement of the Resource Consent. It should be noted that a delay to the BPO decision was acceptable by Horizons Regional Council on the basis the decision was delayed due to the impact of COVID lockdown and the consultation on the Long-Term Plan process in early 2021, which Council sought alignment with the decision on the BPO. The BPO decision must be made no later than the 1st of September 2021.

MILESTONES AND HIGH LEVEL PROJECT PROGRAMME NGĀ PAE TUTUKI ME TE HŌTAKA TIRO WHĀNUI

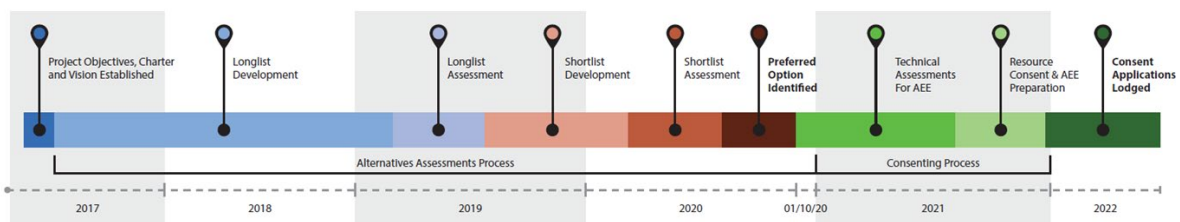


Figure 1 BPO Project Programme

1.3 BPO Shortlist Options

The overall approach to identifying options in the first instance was developed in early 2019 and is documented in the *Longlist Assessment Approach & Conceptual Options, Final July 2019*

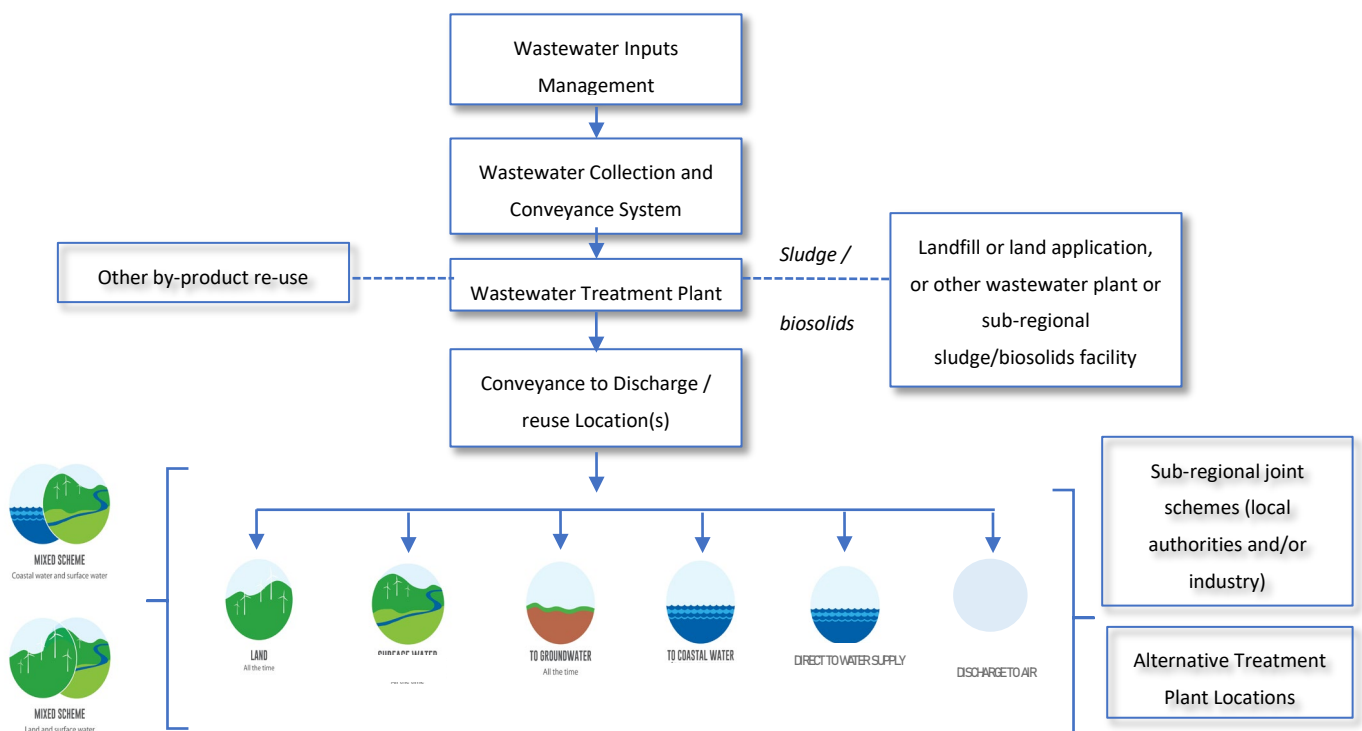


Figure 2 Components of the potential BPO Wastewater Scheme

Report. Figure 2 illustrates the components considered in the overall wastewater scheme being developed for Council in conjunction with the potential receiving environments.

Following the development of the conceptual options in July 2019, technical investigation was undertaken by the Council's Project Team³ to develop the conceptual shortlist to a defined set of options, including proposed treatment regimens and cost estimates. Independent Peer Review was undertaken at key stages of the Project, as outlined in Figure 3 below.

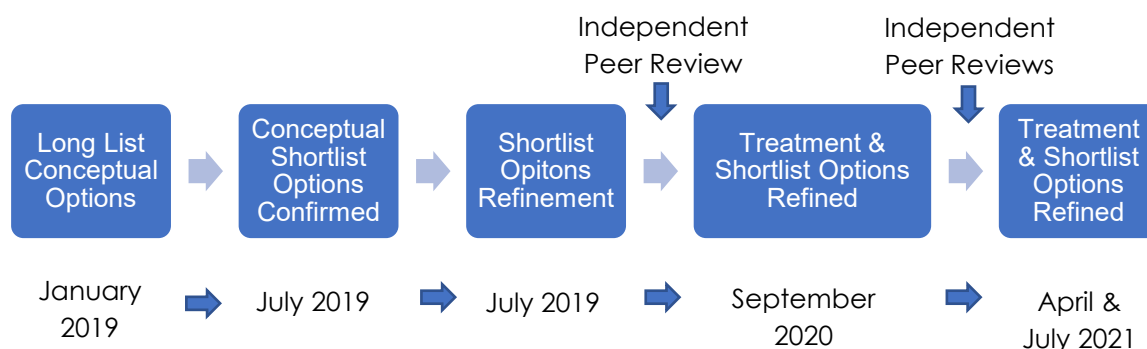


Figure 3 Shortlist Development and Refinement process, including Peer Review input

In September 2020 the Shortlist was refined to enable Council's Project Team experts to complete the Multi-Criteria Assessment (MCA). Table 1 below lists the shortlist options assessed at the MCA in November 2020, the 6 other assessments forming this process and BPO Assessment (this Report). Technical details of each of the shortlist options are provided in the Shortlist Options Summary Report, July 2021 (Appendix A).

Table 1 Options Description / Reference

Option	Option Summary Description
1	R2(b) River discharge with Enhanced Treatment
2	R2(b) River discharge with Enhanced Treatment, 75% ADWF to Land at low River flow
3	Dual R+L(b) Two River discharge points with 75% ADWF to Land at low River flow
4	L+R (a) 97% of the time to Land (inland)
5	L+R (b) 97% of the time to Land (coastal)
6	L+R (d-1) to Land <80m³/s / 53% of the time to Land (inland)
7	L+R (d-2) to Land <62m³/s / 43% of the time to Land (inland)
8	L+R (e-1) to Land <80m³/s / 53% of the time to Land (coastal) TN = 35 mg/L
9	L+R (e-2) to Land <62m³/s / 43% of the time to Land (coastal) TN = 35 mg/L
10	O+L / Ocean with Land (coastal)
11	Ocean discharge

It is noted that all options have the potential to include wastewater management, conveyance and treatment innovation components. These components are identified within

³ Project Team consists of PNCC Project Manager and Chief Engineer, Independent Chairperson, Technical Consultants appointed by PNCC.

the current shortlist for consideration within the final BPO decision and play a key part of the Assessment of options under the Eco-City Strategy (Appendix G) These components include:

- Options to Reduce Wastewater Generation
- Wastewater Collection Options
- Beneficial Re-use of Treated Wastewater Options
- Residuals Management Options
- By Product and Alternatives Waste Stream Beneficial Reuse Options
- Options for other Innovations

1.4 Supporting Project Information

The following technical documents have been referred to, to inform this assessment:

- Wastewater BPO Shortlist Options Report July 2021
- Shortlist Summary Report July 2021 (Appendix A)
- Wastewater BPO Treatment Options Report April 2021 and Addendum Report, August 2021
- BPO Assessment Reports:
 - Comparative Cost Report, August 2021 (Appendix B)
 - Multi-Criteria Assessment, August 2021 (Appendix C)
 - Maori Values / MCA Assessment Report, August 2021 (Appendix D)
 - Stakeholder & Community Engagement Assessment, August 2021 (Appendix E)
 - Objectives Assessment, August 2021 (Appendix F)
 - Eco-City Strategy Assessment, August 2021 (Appendix G)
 - RMA Planning Assessment, August 2021 (Appendix H)
- Resource Consent Permit 101829, Condition 23B

2 Background

2.1 Underlying Legislative Requirements

2.1.1 RMA Requirements & Consideration of Alternatives

The RMA requires an assessment of alternatives (options) to be undertaken for specific circumstances. On the basis the BPO will be applied for as a new resource consent from the Regional Council (Horizons), an Assessment of Environmental Effects (AEE) is required. This AEE will need to address alternative methods of the discharge and locations, and there are specific matters to be addressed under s105 of the Resource Management Act (RMA).

A proven tool used by authorities on major projects, equivalent in potential adverse effects and complexity as the BPO Project, is a Multi-Criteria Assessment (MCA). The MCA process applied to this project has been done so to ensure the analysis of alternatives is transparent and replicable. The process has also been undertaken in consideration of caselaw.⁴

The Wastewater BPO is highly complex with the potential to have adverse effects on a wide-reaching number of parties including Iwi, community, industry, agricultural sectors, individuals, and other stakeholders. Accordingly, the alternatives assessment that has been developed for the Council has carefully considered the scale of potential adverse effects through technical advice, proven assessment methodologies, Iwi involvement, and community and stakeholder engagement.

An MCA has been applied in two ways through this final phase of assessment, including:

- Full MCA on Shortlist Options (Appendix C); and
- An MCA scoring and weighting approach has applied to the evaluation of the 7 assessments, to compare the output of options from each assessment consistently and determine an overall combined ranking of the options.

2.1.2 Existing Resource Consent (Permit 101829)

A change of conditions to the existing consent (Permit 101829) arose out of an agreement reached between the Council and Horizons Regional Council (Horizons), following a review to address the effects of the WWTP discharge on the life supporting capacity of the Manawatū River. This adverse effect was determined to be arising from excessive periphyton growth downstream of the WWTP.

As part of the agreement, Council agreed to carry out a Best Practicable Option (BPO) review in relation to wastewater treatment and disposal options and to apply for a new consent by June 2022. A number of Conditions were amended, while new conditions were included in the Consent. In relation to a BPO, Condition 23B was included, which reads as follows:

Condition 23B. During the 14th year following the commencement of this Permit, the Permit Holder shall initiate a review process (the BPO Review) to determine the best practicable option for treating and disposing of wastewater (including land disposal systems) and give effect to the milestones, as listed in Condition 23C below.

⁴ Basin Bridge Decision: NZ Transport Agency v Architectural Centre [2015] NZHC 1991. Also known as the Basin Bridge decision, at [175] – [198]

- a. *For the purposes of this condition, the Best Practicable Option, in relation to a discharge of wastewater from the Palmerston North Wastewater Treatment Plant, means the best method for preventing or minimising the adverse effects on the environment of that discharge having regard, among other things, to -*
 - i. *The nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and*
 - ii. *The financial implications, and the effects on the environment, of that option when compared with other options; and*
 - iii. *The current state of technical knowledge and the likelihood that the option can be successfully applied.*
- b. *The Best Practicable Option shall be directed at preventing or minimising any adverse effects of the discharge on the life supporting capacity of the Manawatū River and in particular at minimising any adverse effects in relation to each of the following:*
 - i. *Growth of cyanobacteria and excessive periphyton;*
 - ii. *Changes to the structure and/or composition of macro-invertebrate communities; and*
 - iii. *The migration and habitat of trout and native fish.*
- c. *In determining the Best Practicable Option, the Permit Holder shall have regard to minimising the frequency, magnitude and duration of any exceedances of applicable standards, limits or targets in National Policy Statements, National Environmental Standards and any relevant Regional Plan, caused by the discharge.*

Based on condition 23B, a BPO assessment forms the final phase of the assessment process before a recommendation is made to Council. Condition 23B has been translated into 'BPO Criteria', which have been used to assess each option's 'level of alignment' with each specific criterion. The BPO Criteria and assessment is discussed in Section 5 of this Report.

2.2 Overview of BPO Review

The Resource Management Act (RMA) is the overall framework within which the BPO Review is being undertaken. Therefore, the approach to undertaking each of the assessments used throughout the Review, focus on the environmental effects of the proposed wastewater discharge (including treatment levels), on the receiving environment. As the Project has progressed and options have been refined, the level of technical detail of each shortlist option and the potential for adverse effects on the receiving environment, is progressively further defined by each of the technical experts involved in the Project.

In the development of the shortlist options, each treatment solution and option must aim to achieve relevant Standards, Targets and Rules of environmental legislation. These primarily sit within the Horizons Regional Council One Plan (the One Plan) and National Policy Statement for Freshwater Management (NPSFM). A Complete Planning Assessment was undertaken for the Project in early 2019, which sets out the relevant criteria for each of the shortlist options under consideration.

Assessment phases have consistently included cultural, social and economic criteria. Where options have not met criteria to the extent that this is considered a fatal flaw, these options have been removed.

An iterative approach has been developed for the development and assessment of options. Figure 4 illustrates the assessment process adopted from the project inception in 2017 through to the current recommendation process (this Report). The 'Multi-Criteria Assessment' and the Best 'Practicable Options Test' form the final part of the assessment process before making recommendation for a BPO. The scope of this final phase also includes the 7 assessments (including the MCA), before progressing to the BPO Test, which are addressed entirely within this Report.

BPO Options Assessment Process

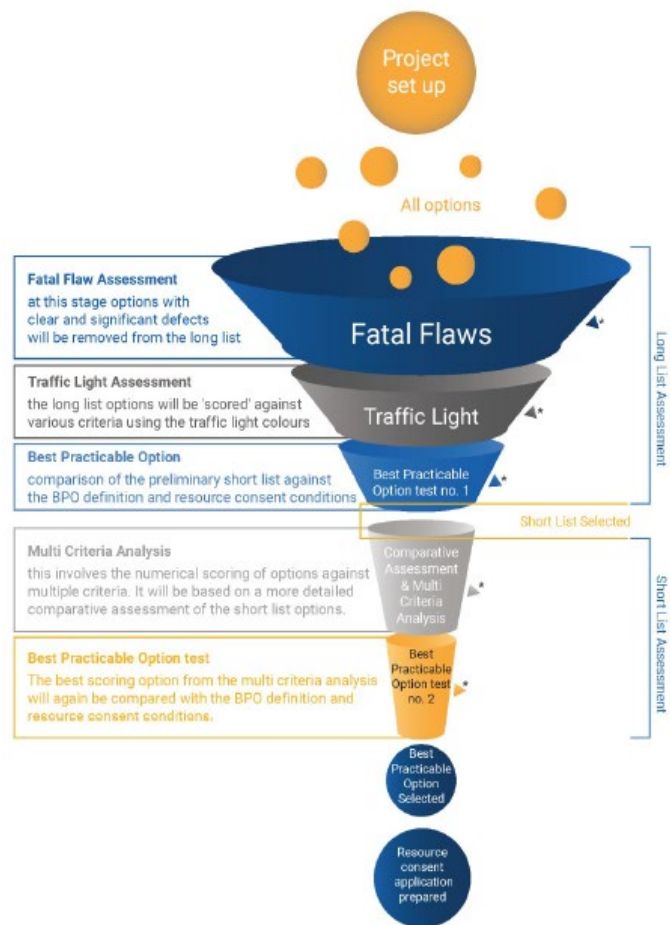


Figure 4 BPO Options Review Process

2.3 Iwi Involvement

Iwi involvement in the BPO Process has varied since 2017, largely dependent on the level of information available from Council to allow meaningful engagement to occur. This included an introduction to the project, followed up with invitation to meet with Council. The following section describes the engagement with Iwi who have progressively become involved in the options review and assessment processes contributing to the BPO recommendation.

2.3.1 Rangitāne o Manawatū

From the outset of the Project, Council adopted a Project Governance structure that enabled the partnership with Rangitāne o Manawatū to be recognised at a governance level. Rangitāne o Manawatū are Mana Whenua to Palmerston North⁵ and midway through the BPO Process, in 2019, the Council and Rangitāne formalised their partnership through a Memorandum of Understanding (MoU).

In 2017, the Project Steering Group (PSG) was established for the BPO Review. The PSG is made up of three representatives of Rangitāne o Manawatū, elected members and senior Council Officers. The involvement of Rangitāne in the BPO Process has included extensive technical input into the options development and assessment processes, consideration of wetland and land passage options and preparation of a Cultural Values Assessment (refer Appendix D).



Figure 5 Rohe of Rangitāne o Manawatū

2.3.2 Muaūpoko Tribal Authority & Ngāti Apa

Because the BPO has the potential to impact on multiple Iwi within the Manawatū Region, the Council engaged with Iwi with connection to the Manawatū River, downstream of Palmerston North and out to the west coast (Horowhenua and Rangitikei Districts). This has included Muaūpoko Tribal Authority and Ngāti Apa. Figures 6 and 7 show the boundaries of each rohe.

Engagement varied depending on the stage of the Project and ability for the Iwi to be involved meaningfully at each stage. Early on, engagement consisted of an informing process, where Council began to progressively reach out to Iwi groups who might have an interest in the outcome. Throughout 2020 to present, the engagement has become an involved process, whereby Iwi have worked with Council to review and provide feedback on technical deliverables. This has occurred with Muaūpoko and Ngāti Apa through several joint hui lead by Rangitāne o Manawatū and attended by various technical experts depending on the stage of the Project and specific technical aspects requiring input.



Figure 6 Rohe of Ngāti Apa



Figure 7 Rohe of Muaupoko

⁵ Figures sourced from www.tkm.govt.nz/iwi

2.3.3 Ngāti Raukawa

As described in Section 2.3.2, engagement varied depending on the stage of the Project and ability for Ngāti Raukawa to be involved meaningfully at that stage. Early on, engagement consisted of an informing process, where Council initially reached out to the Iwi, which at this early time was represented through Te Rūnanga o Raukawa. Commitment was given by Council to progress in a collaborative way through the options development and assessment phases with representatives. The boundary that applies to Ngāti Raukawa's rohe is shown in Figure 8.



Figure 8 Rohe of Ngāti Raukawa

Hapū Representation

Since early 2020, engagement with Ngāti Raukawa has strengthened with Council for the BPO Project. Through the Iwi's internal governance, representation of a majority of the hapū of Ngāti Raukawa, was confirmed by the CEO of Te Rūnanga. This leadership was established by Ngāti Tūranga and Council ensured the views of the hapū were given weight in the final options assessment process. This is captured in Appendix D of this Report.

Council's Project Team have worked collaboratively to provide technical information, allowing the Iwi to carry out an independent Cultural Values Assessment and MCA process on an informed basis. Technical consultants were appointed by the hapū leaders, to provide support in carrying technical review and MCA processes, ensuring trusted and independent advice to the Iwi.

Ngāti Whakaterere

Ngāti Whakaterere are a hapū of Ngāti Raukawa and the only marae located on the banks of the Manawatū River, immediately downstream of Palmerston North. In 2019 engagement and a hui led by Ngāti Whakaterere, with public attendance, occurred in Shannon. Following this meeting, hui have occurred directly with the hapū and it was confirmed in 2020 and 2021 that the hapū would represent their hapū independently of Te Rununga and the representation lead by Ngāti Turanga (see above).

In April 2021, a draft letter that confirmed the approach between Council and the hapū was prepared by the Project's Chairperson. An MoU was requested by the hapū, however the Council elected to continue with the involvement of the hapū under a less formalised agreement. The outcome of the MoU is yet to be confirmed despite follow up by the Project Manager.

2.4 Community & Stakeholder Involvement

Between 2019 and 2021 there were three major engagement phases for the Project. These focused on an awareness campaign in late 2019, the June 2020 feedback period and the May 2021 feedback period. Outside of these time periods Council also provided public updates.

Stakeholder engagement was targeted with key groups, including rural sector, environmental sector, specific trade waste customers, neighbouring Councils and communities in Levin, Rangiotu, Foxton and Feilding. The feedback from both engagement phases in 2020 and 2021 is captured in the stakeholder assessment Report (Appendix E).

3 Methodology for this Assessment

3.1.1 Overview

A total of 7 technical assessments have been undertaken to help inform the process of determining the Best Practicable Option (BPO) for the Palmerston North City wastewater management solution. Figure 9 below shows the assessment process from the assessment stage to the final BPO Test and identifying the BPO.

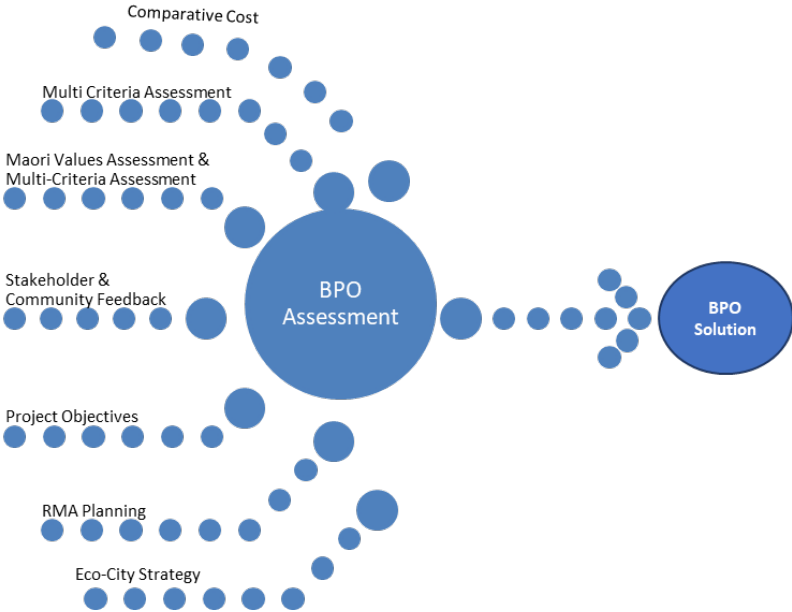


Figure 9 BPO Assessments & BPO Assessment Process

Figure 10 defines the process for refining options through the two key assessment phases before determining the BPO Recommendation.

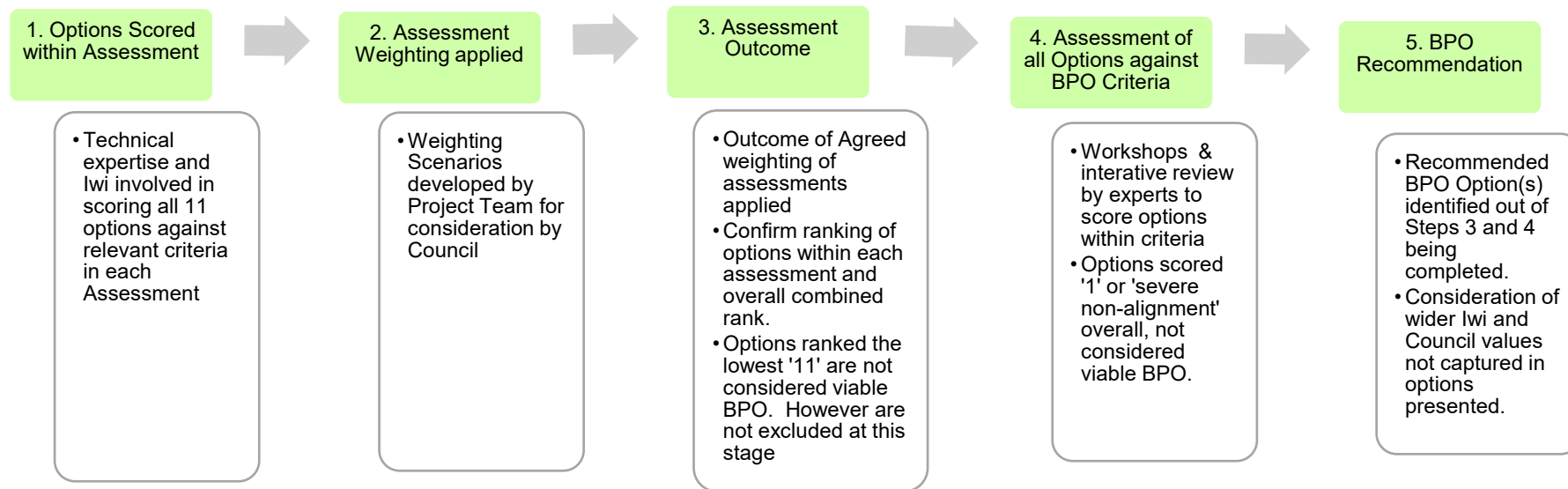


Figure 10 Stages in this assessment process to determine BPO

3.1.2 Application of Criteria & Scoring

Each of the assessments considers each of the short list options comparatively across criteria specific to the assessment focus. These assessments have been completed with technical expertise from the Project Team and Council Officers. The methodology used to undertake these assessments is consistent in approach and provided in detail within each of the assessments appended to this Report. In summary, the following scale (Table 2) has been applied across the 7 assessments, however the definition of the alignment is refined to reflect the specific assessment:

Table 2 Scoring Criteria

Level of alignment	Score
Strong alignment	5
Good alignment	4
General alignment	3
Weak alignment	2

Fails to align	1
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3.1.3 Application of Weighting and Sensitivity Analysis

Consideration of weighting the assessments has been proposed by the Council's Project Team for the following reasons:

- Council may consider the importance of one or more assessments as having higher importance and alignment to the Councils agreed values.
- Ensuring the process is robust is of key importance if the Council is to meet its statutory obligations under the RMA Alternative's Assessment. Therefore, a technical recommendation is necessary to guide the Council in its decision-making process.
- Assessments where the information is considered to have less rigor behind it is considered less reliable, and therefore, a low weighting has been applied.

The Council's Project team sought guidance from the Council at a workshop held in July 2021. The outcome of this workshop was consensus that the Council would prefer a technical recommendation be made by the Project Team, allowing the Council to debate the options in a transparent forum, publicly.

As such, this report includes the recommended technical weighting scenario and several alternative weightings to allow for appropriate sensitivity analysis to occur. These scenarios are to be considered at the Council Meeting on the 18th of August 2021. Figure 11 illustrates the Technical weighting by proportion.

Upon agreement on the weighting of the assessment arms, an overall score and ranking will be applied each option. Options that have ranked 9, 10 or 11, 'worst' are be considered low alignment to the assessments and therefore, are not going to proceed through to a recommended BPO option.

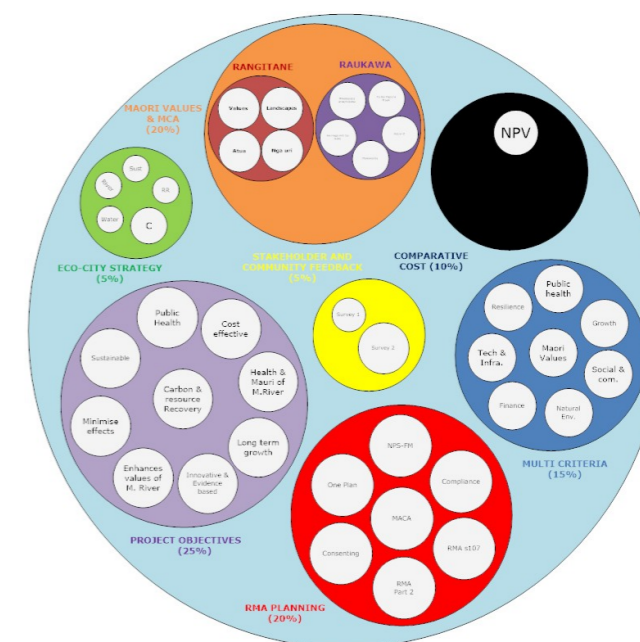


Figure 11 Illustration of weightings applied to each Assessment

3.1.4 BPO Assessment Principles

The final test for the options, is if the options will meet the BPO Criteria developed under Condition 23B of Permit 101829. A consistent scoring approach has been applied to scoring options under BPO Criteria, which aligns with the 7 assessments (refer Table 2). This method is consistent with a MCA methodology, a tool used to assign numbering to qualitative information and complex projects. A workshop process was used to determine scores, involving Councils technical experts, Chief Engineering, PSG Chairperson and Project Manager. Upon completion of the scoring, review of the options to identify criteria that has no alignment ie scored 1, will be excluded from potential recommendation of a BPO.

The following Principles were applied to the assessment of options by experts in the scoring of the criteria:

- Take a precautionary approach to the assessment, especially where there are uncertainties.
- In assessing "receiving environment sensitivity" and "comparison of effects on the environment" adopt the RMA definition of effects which includes social, economic and cultural effects as well as effects on the natural environment.
- RMA definition of effects include future effects, cumulative effects and effects of a low probability which have a high potential impact.
- These are comparative assessments - not being asked to carry out a quantitative assessment
- For the scoring 1 is the worst and 5 is the best. One is not a fatal flaw, it is just a low score when compared with the other options.
- Need to take into account proposed treatment levels in the "receiving environment sensitivity" assessment.

Examples of matters to take into consideration, when undertaking the comparative effects assessment, were also provided (refer Appendix I).

Noting that the starting point for the effect's assessment is the exceedance assessments, which relate primarily to the natural environment. The comparative effects assessment considers matters not assessed in the exceedance assessments.

4 Assessment Outcomes

4.1 Options Scoring & Ranking

Scoring of each option against assessment criteria, is included in the assessments attached to this Report (Appendix B, C, D, E, F, G, H). These scores have been compiled and a total score and rank allocated to each option within the criteria. The options score is then ranked in order from highest '1' to lowest '11', as outlined in Table 3 below. In Table 4 below, no weighting has been applied to any of the assessments. The methodology applied to removing options for consideration through the BPO test is conservative. We recommend the options ranked '11', the worst within any one of the assessments, is not recommended as a BPO (refer Section 4.3).

Table 3 Options ranking across 7 assessments

Option	Ranking of Option within each Assessment							Overall Ranking
	MCA	Maori	Stakeholder	Objectives	Planning	EcoCity	Comparative Cost	
Weight scenario	Combined							
1: R2 (b) (Level 4)	5	7	3	3	2	5	1	1
2: R2 (b) (75% DWF land): 760 ha. (Level 4)	8	8	3	2	3	6	5	4
3: Dual R+L (b) (75% DWF to land): 870 ha. (Level 2, TN=35)	4	9	11	6	6	11	2	10
4: L+R(a): 3760 ha. (Level 1)	3	1	9	7	6	7	5	7
5: L+R(b): 2570 ha. (Level 3, TN=10)	7	4	10	5	1	1	9	5
6: L+R(d-1) 80 m3/s trigger: 2000 ha. (Level 2, TN=35)	6	2	5	10	3	9	2	5
7: L+R(d-2) 62 m3/s trigger: 1640 ha. (Level 2, TN=35)	2	2	5	10	3	10	2	3
8: L+R(e-1) 80 m3/s trigger: 3640 ha. (Level 2, TN=35)	10	5	5	8	9	2	9	9
9: L+R(e-2) 62 m3/s trigger: 3010 ha. (Level 2, TN=35)	11	5	5	8	9	3	9	11
10: O+L: 1470 ha. (Level 1)	9	10	1	4	11	4	8	8
11: O no land (Level 1)	1	11	1	1	2	8	5	2

4.2 Recommended Weighting Scenario

To provide confidence in the final BPO decision, options recommended to be proceed to assessment through the BPO Criteria are proposed to be those with strong or medium level alignment to the criteria assessed. As part of the assessment process, the Council requested the Project's Technical advisors provide a technical recommendation for the assessment weighting. Table 4 below outlines the recommended technical weighting. The basis for this weighting is the following:

- The highest weighting is applied to the Project Objectives. This has been done on the basis the Project Objectives were established in 2017 by the Council and have set the underlying framework for options development and assessments over time. The Objectives have been considered at the fatal flaw and traffic light assessment phases of the Project, however no specific assessment of the shortlist options against the Project Objectives has been completed until this phase of assessment. As Council will progress to resource consent and potentially a designation process, it is important to select an option that meets the Project Objectives as these are expected to be considered through the regulatory processes.
- The RMA Planning Assessment and Māori Values & MCA are weighted highly because:
 - The partnership between Council and Rangitāne o Manawatū should be recognised of high importance, as with recognising the value Iwi place on the Region's natural environment.
 - The risks of consenting an option, which is broader than the BPO criteria alone, are considered of high importance. This is due to the potential for options to be either be consented or not based on meeting relevant statutory documents.
- The MCA is a proven tool used for complex projects like the BPO Project. Accordingly, the MCA is weighted with a medium level of importance to ensure the assessment work completed to date, through a robust process, continues to be considered in the overall decision.

Octopus Arm	Weighting	Proportion
Multi Criteria Assessment	4.5	15.0%
Maori Values & MCA	6.0	20.0%
Stakeholder & Community Feedback	1.5	5.0%
Project Objectives	7.5	25.0%
RMA Planning	6.0	20.0%
Eco-City Strategy	1.5	5.0%
Comparative Cost	3.0	10.0%

Table 4 Technical Recommendation for weighting assessments

- The Eco-City Strategy is scored of lower importance. This is because it is important to factor in the Council's vision and objectives for environmental sustainability, particularly carbon and waste reduction. All options will be developed with sustainability and re-use as part of managing the wastewater system. The Strategy is focused on activities within the Council's control and not a wider consideration of neighbouring Council areas, where options will potentially impact.
- The stakeholder and community feedback has been scored lowest. This is due to the low level of confidence across the feedback received. While there has been extensive engagement over the life of the Project, we do not consider the collective information is entirely representative of all community and stakeholder views.

4.3 Alternative Weighting Scenarios

Alternative weighting scenarios have been explored to guide Council in potential variations to the technical recommendation and to provide relative sensitivity analysis. The alternatives included a higher percentage and focus on key values that have been highlighted throughout the BPO Process to date in Council. The alternatives are: Equal weighting (Table 5), and increased weighting for Māori Values (Table 6), Community & stakeholder values (Table 7), and cost (Table 8). Technical experts have referred to prior assessments reasoning and applied alternative weighting scenarios, accounting for feedback received from Council led workshops held throughout the Project and the need to adequately carry out a sensitivity analysis.

Table 5 Equal Weighting Scenario

Octopus Arm	Weighting	Proportion
Multi Criteria Assessment	4.3	14.3%
Maori Values & MCA	4.3	14.3%
Stakeholder & Community Feedback	4.3	14.3%
Project Objectives	4.3	14.3%
RMA Planning	4.3	14.3%
Eco-City Strategy	4.3	14.3%
Comparative Cost	4.3	14.3%

- An equal weighting scenario is provided as a baseline to understand the outcome of options ranking if all assessments are considered equal.
- The 'Equal scenario' shows there is little variation in the ranking when compared to the overall rank (with no application of weighting).

Table 6 Maori Values Focus for Weighting Scenario

Octopus Arm	Weighting	Proportion
Multi Criteria Assessment	3.0	10.0%
Maori Values & MCA	15.0	50.0%
Stakeholder & Community Feedback	1.5	5.0%
Project Objectives	3.0	10.0%
RMA Planning	3.0	10.0%
Eco-City Strategy	1.5	5.0%
Comparative Cost	3.0	10.0%

- During the MCA in November 2020, the Council agreed that Māori Values should be considered one of the highest values, in conjunction with other values discussed, therefore this scenario has been considered.

Table 7 Community & Stakeholder Values Focus for Weighting Scenario

Octopus Arm	Weighting	Proportion
Multi Criteria Assessment	3.0	10.0%
Maori Values & MCA	6.0	20.0%
Stakeholder & Community Feedback	10.5	35.0%
Project Objectives	3.0	10.0%
RMA Planning	3.0	10.0%
Eco-City Strategy	1.5	5.0%
Comparative Cost	3.0	10.0%

- Higher weighting is placed on community and stakeholder feedback as the Council has continuously raised the desire to meet community and stakeholder aspirations.
- The weighting is not considered as high as Scenarios focusing on Māori Values and Cost as the engagement feedback is not considered to be clearly representative of the Palmerston North Community.

Table 8 Cost Focus for Weighting Scenario

Octopus Arm	Weighting	Proportion
Multi Criteria Assessment	3.0	10.0%
Maori Values & MCA	6.0	20.0%
Stakeholder & Community Feedback	1.5	5.0%
Project Objectives	3.0	10.0%
RMA Planning	3.0	10.0%
Eco-City Strategy	1.5	5.0%
Comparative Cost	12.0	40.0%

- High cost weighting has been considered, with medium level weighting to Iwi values in this scenario. This is to reflect the rationale behind Council selecting a more affordable option, while maintaining support for Iwi values in the overall consideration.
- Cost has also been highlighted as a concern by the community and Council previously.

4.4 Options Ranking including weighting scenarios

Based on the scenarios noted in Section 4.3 above, Table 9 shows the composite score for the options ranked across all the assessments. Recommended Options to progress to BPO Assessment are highlighted in green within Table 9. In summary, the scenarios show:

- Options consistently scoring the lowest are options including large areas of coastal lands (Options 5, 8, 9 and 10)
- Options scoring consistently high include the Ocean discharge (Option 11) and options that minimise adverse effects on the Manawatū River, which includes the highest treatment level with a proportion to land (Option 2) and the 43-53% discharge to inland soils and River (Options 6 and 7).
- While the ranking for the technical recommendation has identified Option 11 is '1', Iwi are completely opposed (Appendix D) and as discussed in Section 6.2 below, is not recommended for a final BPO.

Table 9 Comparison of Ranked Options across weighting scenarios

Option	Rank across all Assessments	Technical Recommendation	Focus: Maori Values	Focus: Stakeholder	Focus: Cost	Focus: Equal
1: R2 (b) (Level 4)	6	6	7	6	1	5
2: R2 (b) (75% DWF land): 760 ha. (Level 4)	2	2	5	5	7	2
3: Dual R+L (b) (75% DWF to land): 870 ha. (Level 2, TN=35)	9	9	9	9	4	9
4: L+R(a): 3760 ha. (Level 1)	5	3	1	4	6	6
5: L+R(b): 2570 ha. (Level 3, TN=10)	8	8	6	7	9	8
6: L+R(d-1) 80 m3/s trigger: 2000 ha. (Level 2, TN=35)	4	5	3	2	3	3
7: L+R(d-2) 62 m3/s trigger: 1640 ha. (Level 2, TN=35)	3	4	2	1	2	4
8: L+R(e-1) 80 m3/s trigger: 3640 ha. (Level 2, TN=35)	10	10	10	10	10	10
9: L+R(e-2) 62 m3/s trigger: 3010 ha. (Level 2, TN=35)	11	11	11	11	11	11
10: O+L: 1470 ha. (Level 1)	7	7	8	8	8	7
11: O no land (Level 1)	1	1	4	3	5	1

4.5 Recommended Options to Progress to BPO Assessment

To recommend options for assessment through the BPO Criteria and provide confidence in the final BPO decision, options with the highest alignment to the range of assessments completed in this process are recommended for further assessment and consideration. In addition to this, options considered 'mid-range' are also recommended to progress. Any option that is consistently scoring low across the weighting scenarios, should be removed from further assessment and consideration. These are options with a ranking of a '9', '10' or '11' within Table 9.

It should be noted that across the range of weighting scenarios, there are several options that consistently have low alignment across several the assessments to date (Table 3). Options that are ranked the lowest '11' are considered 'flawed', as they fail to align with multiple assessment criteria. For example, Options 10 and 11 are not considered acceptable to Iwi within the Maori Values Assessments. It is therefore recommended that Options that rank 11 within an assessment, are not considered as a potential BPO solution. These options have not been removed at this stage of the process and is further discussed in Section 6 'Recommendation' below.

The following options are not considered by Council as a final BPO solution because of the non-alignment (refer Table 9):

- Option 3: Dual R+L (b) (75% DWF to land): 870 ha. (Level 2, TN=35)
- Option 5: L+R(b): 2570 ha. (Level 3, TN=10)
- Option 8: L+R(e-1) 80 m3/s trigger: 3640 ha. (Level 2, TN=35)
- Option 9: L+R(e-2) 62 m3/s trigger: 3010 ha. (Level 2, TN=35)
- Option 10: O+L: 1470 ha. (Level 1)

The following are considered for further assessment through the BPO criteria and potential consideration as a BPO solution:

- Option 1: R2 (b) (Level 4)**
- Option 2: R2 (b) (75% DWF land): 760 ha. (Level 4)**
- Option 4: L+R(a): 3760 ha. (Level 1)**
- Option 6: L+R(d-1) 80 m3/s trigger: 2000 ha. (Level 2, TN=35)**
- Option 7: L+R(d-2) 62 m3/s trigger: 1640 ha. (Level 2, TN=35)**
- Option 11: O no land (Level 1)**

5 BPO Criteria Assessment

Table 4 below outlines the agreed BPO Criteria. This Criteria have been developed with the involvement of Technical experts, Council's legal advisors, Chief Engineer, Project Chairperson and Project Manager.

Table 10 BPO Assessment and Scoring Criterion

BPO Source	Ref	Criterion	Description	1	2	3	4	5
RMA BPO definition (a)	RE1	Receiving environment sensitivity	What is the nature of the discharge, and how sensitive is the likely receiving environment (social, economic, cultural, natural) to adverse effects?	Very high	High	Moderate	Low	None
RMA BPO definition (b)	CEE1	Comparison of effects on the environment	How do the effects of each of option compare with the other options in terms of the Social environment	Significant cannot mitigate	Significant	Adverse	Minor	No more than minor
	CEE2	Comparison of effects on the environment	How do the effects of each of option compare with the other options in terms of the Economic environment	Significant cannot mitigate	Significant	Adverse	Minor	No more than minor
	CEE3	Comparison of effects on the environment	How do the effects of each of option compare with the other options in terms of the Cultural environment	Significant cannot mitigate	Significant	Adverse	Minor	No more than minor
	CEE4	Comparison of effects on the environment	How do the effects of each of option compare with the other options in terms of the Natural environment	Significant cannot mitigate	Significant	Adverse	Minor	No more than minor
RMA BPO definition (b)	F1	Comparative financial implications	How do the cost (capital, operational, whole of life) implications of each of option compare with the other options ?	Very high	High	Moderate	Low to Moderate	Low
RMA BPO definition (c)	TK1	Technical Knowledge	Can the options be successfully implemented e.g. how complex is each option to construct and operate when compared with the other options ?	Highly Complex	Moderate to Highly Complex	Moderately Complex	Low to Moderately Complex	Low Complexity
	TK2	Technical Knowledge	Are the technologies reliable / proven ?	Unproven or Emerging	Proven, Int: (Limited), NZ (Not in use)	Proven, Int (Common), NZ (Limited)	Proven, Int (Common), NZ (Increasing)	Proven, Common Use
	TK3	Technical Knowledge	How resilient is each option to natural hazards and climate change ?	High	Moderate to High	Moderate	Low to Moderate	Low
Condition 23B b. and c	S1	Exceedances of standards, limits or targets	Is it expected that each option will minimise the frequency, magnitude and duration of exceedances of relevant standards, limits or targets?	Very High	High	Medorate	Low	Negligible
	S2	Exceedances of standards, limits or targets	Is the option directed at preventing or minimising any adverse effects of the discharge on the life supporting capacity of the Manawatū River?	Very High	High	Medorate	Low	Negligible
	S3	Exceedances of standards, limits or targets	In particular, is the option directed at preventing or minimising any adverse effects of growth of cyanobacteria and excessive periphyton?	Very High	High	Medorate	Low	Negligible
	S4	Exceedances of standards, limits or targets	In particular, is the option directed at preventing or minimising any adverse effects of changes to the structure and/or composition macroinvertebrate communities?	Significant cannot mitigate	Significant	Adverse	Minor	No more than minor
	S5	Exceedances of standards, limits or targets	In particular, is the option directed at preventing or minimising any adverse effects on the migration and habitat of trout and native fish?	Very High	High	Medorate	Low	Negligible
Condition 23B c.		RMA Part 2 and Section 104, 105 and 107 considerations	Broadly, how does each option align with the principles of Part 2 of the RMA (including enabling people and communities to provide for their social, economic, and cultural well-being and for their health and safety) and the considerations contained in sections 104, 105 and 107 of the RMA	Fails to align	Weak alignment	General alignment	Good alignment	Strong alignment

5.1 BPO Assessment

5.1.1 Explanation of BPO Criteria Scoring

Appendix I of this Report captures the breakdown of scores and reasoning behind the BPO Assessment (Table 12 below). These scores were derived through several interactive workshops attended by the technical experts, Council's Chief Engineering, PSG Chairperson and Project Manager. All options have been assessed through the BPO Criteria. This was done on the basis there is the potential for Council to consider an alternative weighting scenario at a Council Meeting on the 18th of August, which may change the initial removal of options at the weighting stage (refer Section 4.5 above).

Options for further consideration, that have not already been removed from the earlier assessment, are highlighted in green within Table 11 below. Table 11 below shows the overall score allocated to each of the BPO Criteria and an overall rank within the BPO criteria based on the total score. It should be noted that no weighting is being applied to individual BPO criteria. This is because the criteria are developed out of the specific resource consent Condition 23B and there is no indication in the current consent or previous consent decision that any one of the conditions/criteria should be weighted of higher or lesser importance.

Table 11 Options Assessment Scoring against BPO Criteria

OPTION		BPO Criteria					
		Receiving environment sensitivity	Comparison of effects on the environment	Comparative financial implications	Technical Knowledge	Exceedances of standards, limits or targets	RMA Part 2 and Section 104, 105 and 107 considerations
	1: R2 (b) (Level 4)	1.0	3.0	5.0	4.3	2.0	2.5
	2: R2 (b) (75% DWF land): 760 ha. (Level 4)	2.0	3.1	3.0	3.3	3.0	2.8
Shortlisted Options	3: Dual R+L (b) (75% DWF to land): 870 ha. (Level 2, TN=35)	3.0	2.3	4.0	3.3	3.6	3.0
	4: L+R(a): 3760 ha. (Level 1)	3.0	1.3	2.0	1.0	4.4	3.8
	5: L+R(b): 2570 ha. (Level 3, TN=10)	3.0	2.8	1.0	1.0	4.6	3.8
	6: L+R(d-1) 80 m3/s trigger: 2000 ha. (Level 2, TN=35)	3.0	2.4	3.0	2.0	4.0	3.5
	7: L+R(d-2) 62 m3/s trigger: 1640 ha. (Level 2, TN=35)	3.0	2.6	4.0	2.0	4.0	3.5
Shortlisted Options	8: L+R(e-1) 80 m3/s trigger: 3640 ha. (Level 2, TN=35)	3.0	2.6	1.0	1.0	4.0	2.8
	9: L+R(e-2) 62 m3/s trigger: 3010 ha. (Level 2, TN=35)	3.0	2.6	1.0	1.0	4.0	2.8
	10: O+L: 1470 ha. (Level 1)	4.0	2.6	1.0	1.7	4.8	3.5
	11: O no land (Level 1)	5.0	3.5	2.0	3.3	5.0	3.5

5.2 Recommended Options from BPO Assessment

All options have been considered through the BPO Criteria and this is the final phase of the assessment process, before wider considerations may be incorporated into the final BPO recommendation, by the Council and as recommended by Technical specialists. Options with a score of '1' within the BPO Criteria are considered to have high risks associated with non-compliance and/or adverse effects on the environment (refer Table 11). On this basis the options may be fatally flawed or at the least, have considerable risk of not being acceptable to Iwi and/or the consenting authority (Horizons Regional Council).

It is recommended that due to the high potential for not meeting one or more of the BPO Criteria, the following options are not considered for the final BPO solution:

- Option 1: R2 (b) (Level 4)
- Option 4: L+R(a): 3760 ha. (Level 1)
- Option 5: L+R(b): 2570 ha. (Level 3, TN=10)
- Option 8: L+R(e-1) 80 m3/s trigger: 3640 ha. (Level 2, TN=35)
- Option 9: L+R(e-2) 62 m3/s trigger: 3010 ha. (Level 2, TN=35)
- Option 10: O+L: 1470 ha. (Level 1)

6 Recommendation

6.1 Outcomes Overall BPO Assessment

As outlined in Sections 4 and 5, the methodology applied to both the assessment scoring and BPO criteria, recommends that options considered with low levels of alignment to the assessments carried out prior to the BPO assessment should not be considered as potential BPO solutions (Section 4.5). This will result in several options already excluded through the weighting process and Option 11, which is fundamentally opposed by Iwi throughout the Region. Following this, all options have been assessed under the BPO criteria (Tables 11 and 12). It is the BPO assessment that is considered the most important and rigorous assessment to assist Council in identifying a potential BPO.

Options that have been identified as not having any reasonable alignment within an assessment and in consideration of the weighting scenarios applied to these assessments, are recommended to NOT be considered as a potential BPO. Under the BPO Assessment process, the same approach has been applied, in the options identifying with a '1' are identified as having considerable risk to the option being consented, as it is considered to not meet one or more of the individual BPO criteria. Table 12 below shows the range of scores across the weighted assessment scores and the BPO Criteria. In summary, this indicates that the following options may be considered for the potential BPO solution:

- Option 2: R2 (b) (75% DWF land): 760 ha. (Level 4)
- Option 6: L+R(d-1) 80 m3/s trigger: 2000 ha. (Level 2, TN=35)
- Option 7: L+R(d-2) 62 m3/s trigger: 1640 ha. (Level 2, TN=35)

Table 12 Overview of BPO Criteria and Assessment Scores with Recommended potential BPO Solutions

Option	Rank of Octopus	BPO Scores (Mark out of 5)						BPO Score	Technical Recommendation
		Receiving environment sensitivity	Comparison of effects on the environment	Comparative financial implications	Technical Knowledge	Exceedances of standards, limits or targets	RMA Part 2 and Section 104, 105 and 107 considerations		
1: R2 (b) (Level 4)	5	1.0	3.0	5.0	4.3	2.0	2.5	17.8	5
2: R2 (b) (75% DWF land): 760 ha. (Level 4)	2	2.0	3.1	3.0	3.3	3.0	2.8	17.2	2
3: Dual R+L (b) (75% DWF to land): 870 ha. (Level 2, TN=35)	9	3.0	2.3	4.0	3.3	3.6	3.0	19.2	9
4: L+R(a): 3760 ha. (Level 1)	6	3.0	1.3	2.0	1.0	4.4	3.8	15.4	6
5: L+R(b): 2570 ha. (Level 3, TN=10)	8	3.0	2.8	1.0	1.0	4.6	3.8	16.1	8
6: L+R(d-1) 80 m3/s trigger: 2000 ha. (Level 2, TN=35)	4	3.0	2.4	3.0	2.0	4.0	3.5	17.9	4
7: L+R(d-2) 62 m3/s trigger: 1640 ha. (Level 2, TN=35)	3	3.0	2.6	4.0	2.0	4.0	3.5	19.1	3
8: L+R(e-1) 80 m3/s trigger: 3640 ha. (Level 2, TN=35)	10	3.0	2.6	1.0	1.0	4.0	2.8	14.4	10
9: L+R(e-2) 62 m3/s trigger: 3010 ha. (Level 2, TN=35)	11	3.0	2.6	1.0	1.0	4.0	2.8	14.4	11
10: O+L: 1470 ha. (Level 1)	7	4.0	2.6	1.0	1.7	4.8	3.5	17.6	7
11: O no land (Level 1)	1	5.0	3.5	2.0	3.3	5.0	3.5	22.3	1

6.2 Wider Considerations

6.2.1 Iwi

Council has recognized the partnership it has with Rangitāne through the establishment of the Project Steering Group (PSG) in 2017, with representation of Iwi on this governance group for the duration. A MoU is also in place between the Council and Rangitāne, signed midway through this Project. Throughout the project, Rangitāne has worked closely with the Project Team to provide review and input into many technical documents and undertaking of Cultural Values Assessments at both the longlist and shortlist assessment phases. As part of this final phase, a detailed CVA was prepared by Rangitāne and presented to the PSG in July 2021. The key messages of this CVA and presentation was:

- The highest treatment level should be adopted, no matter which receiving environment is being considered. This is the Treatment Level 4, as proposed in Options 1 and 2

- A direct discharge to a water body 100% of the time is not supported, which includes the ocean and Manawatū River. These are options 1 and 11, but this also relates to Options 2 and 10 due to the significant quantity of direct discharge to the waterbody being considered with these options.
- Discharging wastewater to land that is located outside of the Palmerston North area is not supported as this has the potential to impact on neighbouring Iwi, including Ngāti Raukawa.
- The uptake of significant land areas is not supported ie 97%, due to the inability to locate this in the district and the impact this has their Iwi. This is Options 4 and 5.
- The discharge of wastewater near Opiki (Option 3) is not supported due to the location and potential to impact on Iwi, including hapū and marae down stream of Palmerston North.

Rangitāne have confirmed a willingness continue work with Council in partnership, to further develop and refine the BPO option (Option 2 – Treatment Level 4) and discharging to land through an Adaptive Management approach, as proposed in Options 6 and 7. This is an option that can be seen as a refinement of Options 2, 6 and 7 that the Council can continue to work on in partnership with Rangitāne. In addition to this, Rangitāne ask that the land-based discharge should be considered as a 'resource', and any opportunity to utilise the treated wastewater as a resource to enhance currently deteriorated wetland systems throughout the Region should be explored. Sustainability measures, which seek to reduce wastewater at source, should also be progressed as a key priority for the BPO solution.

The hapū representing Ngāti Raukawa also presented their values assessment in August 2021 to the PSG. At this presentation, Ngāti Raukawa stated their support for the leadership provided by Rangitāne as mana whenua for the City. In support of Rangitāne 's Values Assessment, the following key recommendations were made by the representative hapū:

- An ocean discharge is completely unacceptable (Options 10 and 11)
- A discharge of wastewater to land that is outside of Palmerston North is not acceptable (Options 5, 8, 9, 10)
- The highest level of treatment (Treatment Level 4) should be adopted, no matter where the discharge ends up (Options 1 and 2)
- A direct discharge to the River all the time is not supported (Option 1).

All options were considered to have an adverse effect on both Iwi across a wide range of values, as identified in the CVA and MCA prepared by the Iwi. However, both Iwi are prepared to work with Council in a re-configured governance model where Iwi and the Council develop a solution in partnership. The starting point for this is the consideration of the highest treatment level combined with higher land areas to deliver a land-based discharge solution. This may be developed over time, through an adaptive management approach. Adaptive Management has been considered at a high level within the shortlist options and is considered a viable solution to enable Council to deliver on the highest ranked options for Iwi, which are Options 6 and 7.

6.2.2 Stakeholder and Community Feedback

The stakeholder engagement process identified the views of a range of community groups, individuals, targeted sectors, and stakeholders' groups. While there is opposing recommendations for where the discharge should go, between these stakeholder groups (as summarised in Appendix E), there are consistent messages that came from everyone that was involved in both Phase 1 and 2 engagement processes. These include:

- The highest treatment solution must be adopted
- The option must be affordable to ratepayers
- Council must take care of its own wastewater, within its own District
- Sustainability and resource recovery are key to managing the long-term effects of wastewater adverse effects on the receiving environment and the manage the impacts of growth in the long-term.

It is recommended that the above key messages are considered by Council in the determination of the final BPO solution.

6.3 Overall Recommendation

The BPO Project is a complex project with the potential to provide a long-term solution for Palmerston North and potentially the wider region. The methodology and approach adopted to get to this Final recommendation, has been developed by Council's Project Team, with the involvement of Council and peer reviewed by Council's legal counsel. The methodology is considered robust and takes into consideration a wide range of Council's vision and objectives for the Project, Iwi values across the Region, stakeholder input long term strategies and critical planning documents. The recommended BPO by the Project Team, is also considered to meet the requirements of the RMA.

The technical recommendation for Council to consider a potential BPO solution that incorporates the values and recommendation made by Rangitāne o Manawatū and supported by hapū of Ngāti Raukawa. Therefore, Option 10 and 11 is not recommended as a potential solution for the BPO. The final option also considers the consistent feedback provided by stakeholders. In summary, this is a solution that comprises a combination of the following:

- Option 2: R2 (b) (75% DWF land): 760 ha. (Treatment Level 4)
- Option 6: L+R(d-1) 80 m3/s trigger: 2000 ha. (Treatment Level 2, TN=35)
- Option 7: L+R(d-2) 62 m3/s trigger: 1640 ha. (Treatment Level 2, TN=35)

It is recommended that Council adopts the highest treatment level (Treatment Level 4) for discharges to the Manawatū River (Option 2), with a staged approach to increasing the portion of the discharge of treated wastewater applied to land over time, through an Adaptive Management approach.

Appendix A: BPO Shortlist Options

Appendix B: Comparative Cost Assessment

Appendix C: Multi-Criteria Assessment

Appendix D: Cultural Values Assessment & MCA

Appendix E: Stakeholder & Community Engagement Assessment

Appendix F: Project Objectives Assessment

**Appendix G: Eco-City
Strategy Assessment**

Appendix H: RMA Planning Assessment

Appendix I: BPO Assessment Scoring