Hillcrest Reservoir Site Selection – The Recommended Site

Project:	Hillcrest Reservoir – The Recommended Site		
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Prepared by:	Rebecca Ellery and Julie Chhour	**Date**:	14 May 2026
Checked by:	Blair Telfer	**Approved by:**	Kat Jackson
Subject:	Hillcrest Reservoir Site Selection – Recommended site results, sensitivity analysis, conclusions and recommended next steps		

1 Introduction

1.1 Document Purpose

The purpose of this report is to document the results of the Hillcrest Reservoir Multi Criteria Assessment (MCA) process and provide a recommended site for a new Hillcrest Reservoir.

This report should be read in conjunction with:

- Hillcrest Reservoir Site Selection – Methodology (11 February 2026) (attached as **Appendix A**)
- Hillcrest Reservoir Site Selection – MCA Framework and scoring matrix revised (28 April 2026) (Attached as **Appendix B**)

The above documents included the principles and process followed throughout the MCA. These documents were shared with Hamilton City Council (HCC) and feedback received through workshops and review cycles. They covered:

- Project objectives
- Legislative requirements
- Establishment of the Hillcrest Zone boundary
- Reservoir sizing
- Site selection process (longlist to short list)
- Key assumptions
- Long list identification process and findings
- Short list identification process including:
    - Critical Success Factors and weighting (RAG mapping)
- Preferred site identification process including:
    - Scoring criteria and sub criteria
    - Criteria scoring weightings

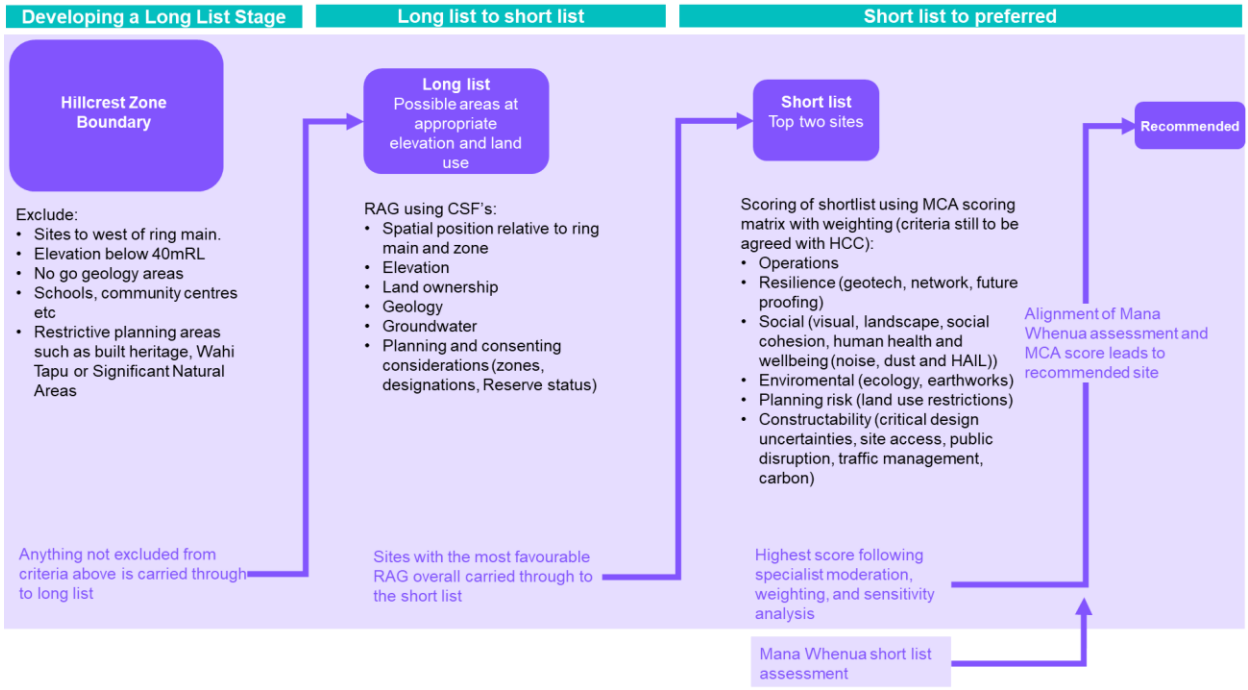
The purpose of this is to document the findings of the processes outlined above. This report will consolidate specialist inputs, including mana whenua, and the findings of the moderation session, preliminary drawings, and document the results of the recommended site for a new Hillcrest Reservoir and propose next steps.

2 Methodology

2.1 MCA Framework

Figure 2.1 below, illustrates the high-level process that was followed.

Figure 2.1: MCA process for Hillcrest Reservoir Site Selection



Source: Mott MacDonald, 2025 (edited April 2026)

This process is detailed in the Hillcrest Reservoir Site Selection – Methodology (11 February 2026).

3 Results

3.1 The Reservoir Requirements

To meet the storage capacity of 12ML including effective volume, dead storage and freeboard, various configurations are possible. The agreed reservoir footprint size and configuration includes:

- Circular, above ground reservoir is more favourable than rectangular or buried alternatives. This is driven by operational health and safety, accessibility and ongoing operational and maintenance constraints.
- 45m internal diameter with a 7.6m internal height was used as a basis for design and for assessment purposes. Modifications to the shape, height and footprint may be required for the preferred site at future design stages.
- A site footprint of 6500m^2 (approximately 80m x 80m) was considered an appropriate size for assessment. This includes space for a 50m diameter footprint, 2m allowance around the reservoir for

external walls and any other external features and 3m wide ring road for ancillary infrastructure including a pump house, control room, and bypass network.

3.2 Identification of the Long List

As identified in the Hillcrest Reservoir Site Selection – Methodology (11 February 2026), a first iteration exclusion assessment was undertaken to determine the long list. Sites were excluded from further consideration if they were deemed unsuitable due to:

3.2.1 Spatial position relative to zone and ring main

Sites located to the west of the ring main which would require additional bulk main infrastructure were excluded.

3.2.2 Elevation

Elevations lower than 40mRL were excluded due to the limitations in hydraulic pressure and increasing pump requirements.

3.2.3 Land ownership

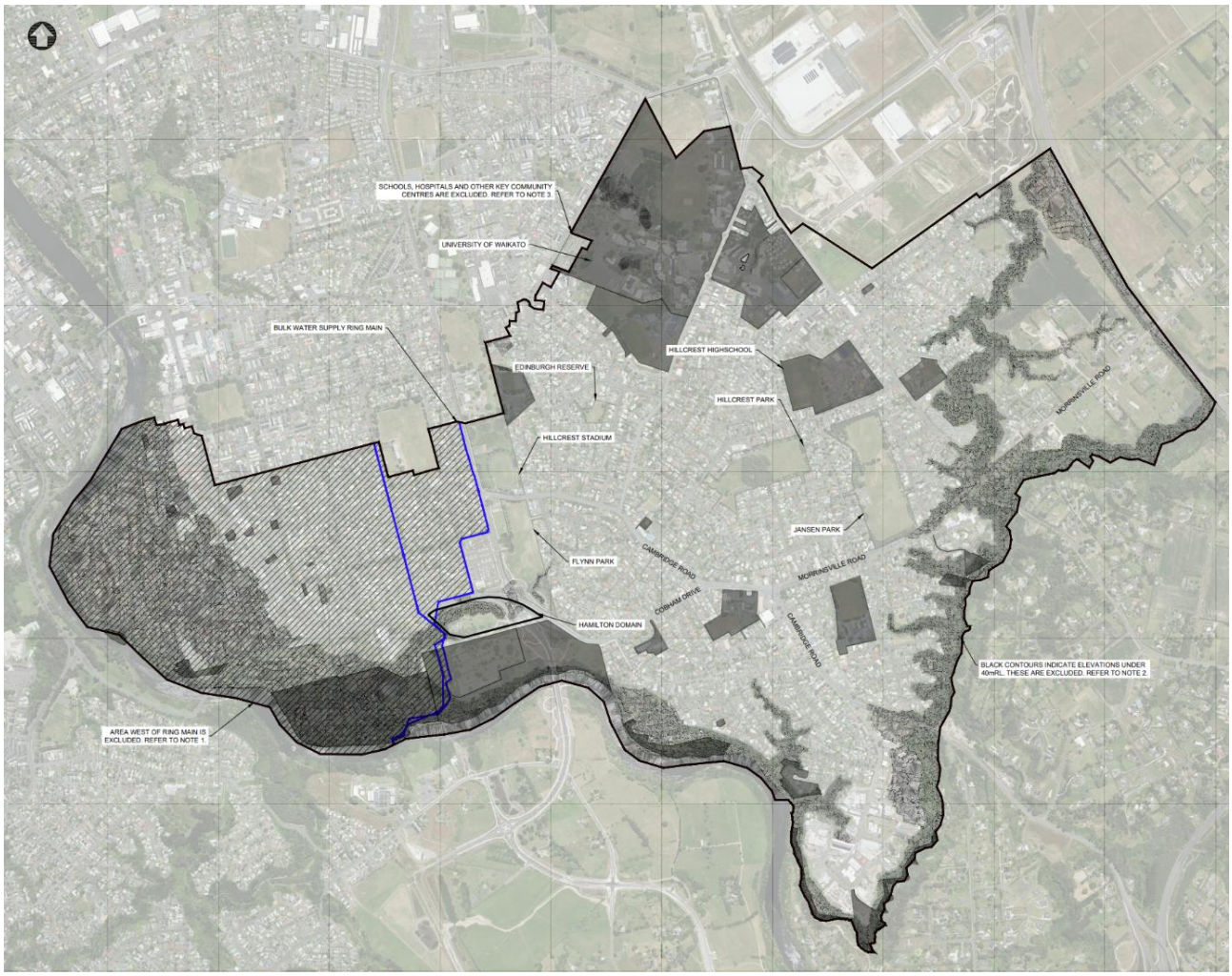
Hospitals, schools, community centres would have a significant impact on community and services. These areas were excluded from any further assessment.

3.2.4 Planning

Areas with built heritage structures or buildings, archaeological and cultural sites, or Significant Natural Areas excluded from further assessment.

The drawing showing the remaining areas for consideration, or the ‘long list’ is included in figure 2.2 below and the Hillcrest Preliminary Design Drawings (16 March 2026), drawing HRWEW-MMD-00-XX-DR-C-0001 P03 **Appendix C.**

Figure 3.1: First iteration of excluded areas shown in black



Source: Mott MacDonald, January 2026

3.3 Identification of the Short List

Following the exclusion exercise, the remaining areas were qualitatively evaluated against the critical success factors using a RAG rating system. As outlined in the methodology report (**Appendix A**), the critical success factors used are included in table 3.1 below.

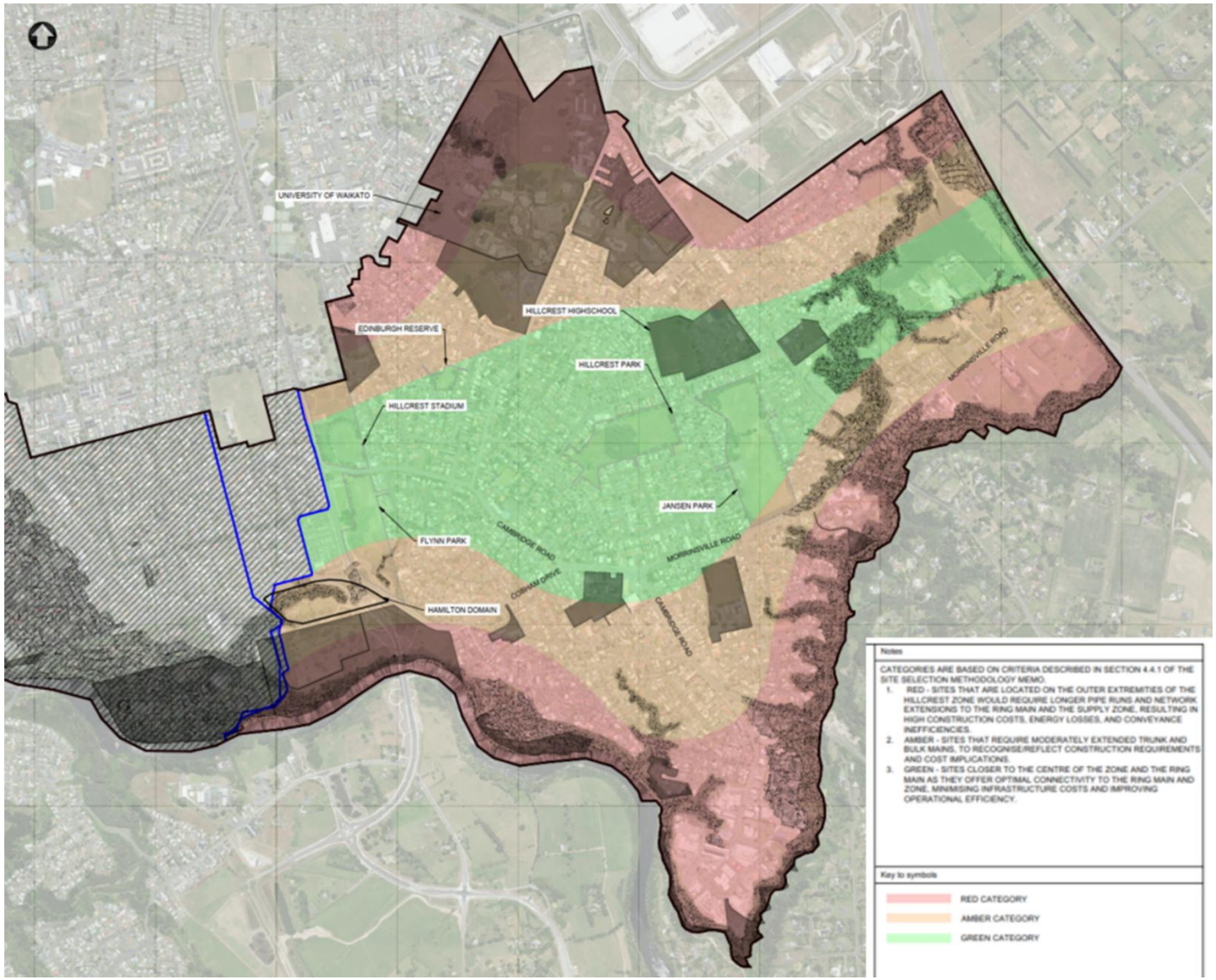
Table 3.1: Critical Success Factors

	Factors	Description
Critical Success Factors	Spatial position relative to ring main and zone	This criterion evaluates how close a potential reservoir site is to the existing ring main supply from the Water Treatment Plant (WTP) and to the centre of the proposed Hillcrest zone.
	Elevation	This is to assess the relative elevation of the site identified and its implication on resilience, operability, and sustainability of the reservoir.
	Land Ownership	Whether the land is publicly or privately owned and the scale of private land required through a Public Works Act 1981 (PWA) process.
	Geology	High level desktop assessment of geotechnical constraints including geology, liquefaction risks, and land instability.
	Groundwater	Desktop assessment of static groundwater levels as identified on HCC GIS maps.
	Consenting/legislative constraints and considerations	Assessment of consenting constraints and challenges for developing the sites such as district and regional plan zones and overlays, Conservation Act 1987, and Reserves Act 1977, cultural and environmental considerations, identified from a high-level desktop study.

The results of the RAG assessment are included in figures 3.2 – 3.6 below and also attached as **Appendix C**.

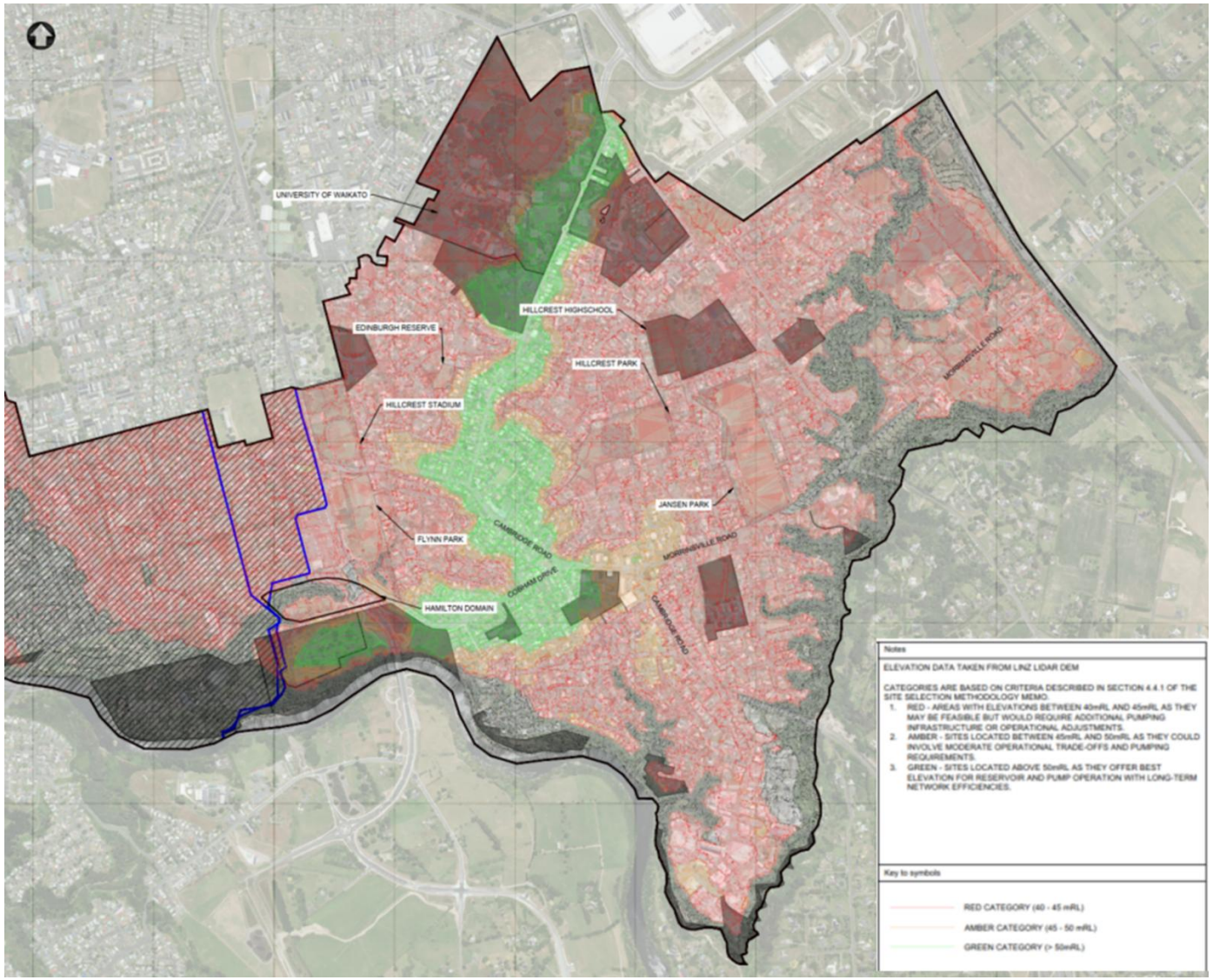
The two recommended sites for further assessment are included in figure 3.7 and also attached as **Appendix C.**

Figure 3.2: Spatial position relative to ring main and zone



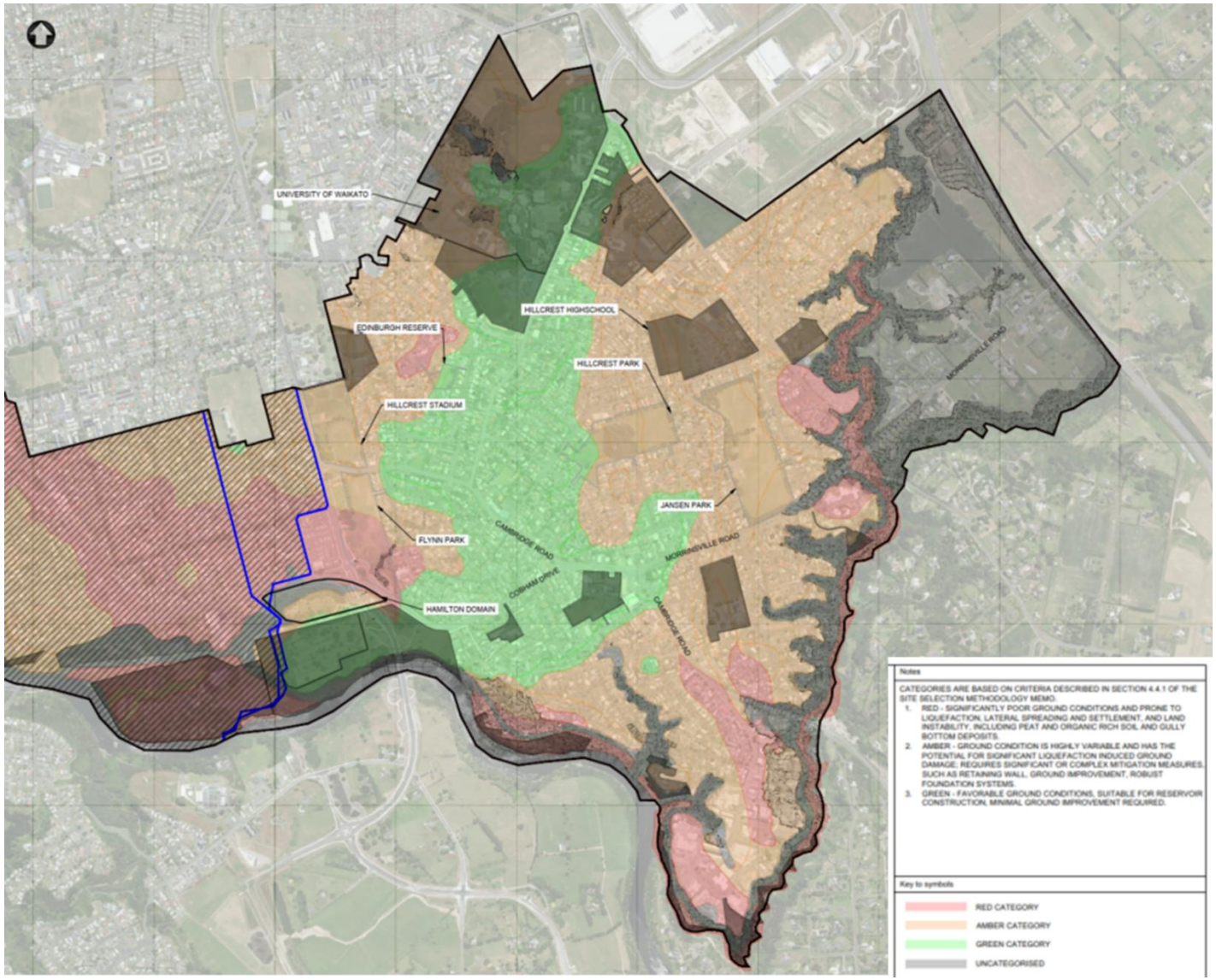
Source: Mott MacDonald, January 2026

Figure 3.3: Elevation



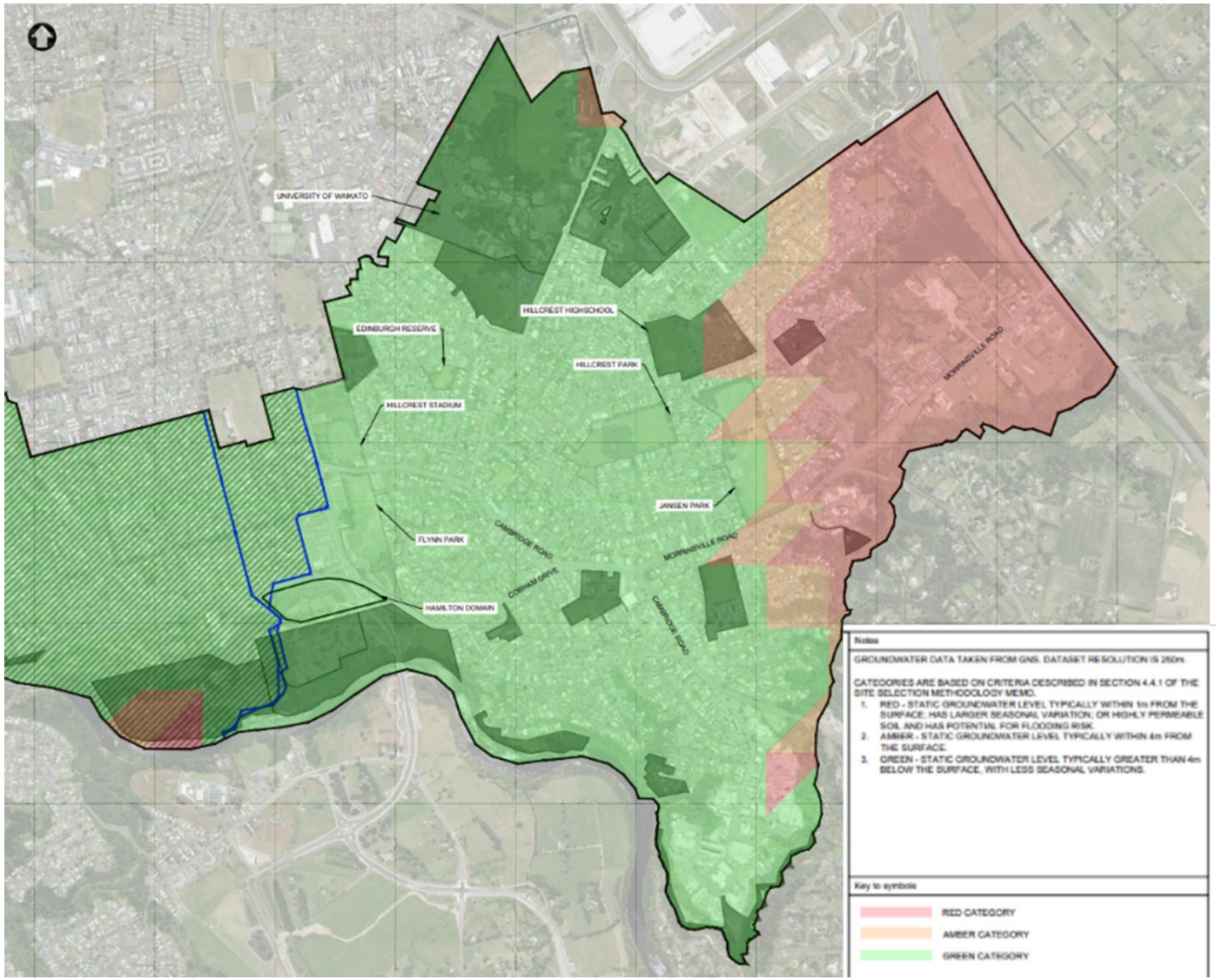
Source: Mott MacDonald, January 2026

Figure 3.4: Ground conditions



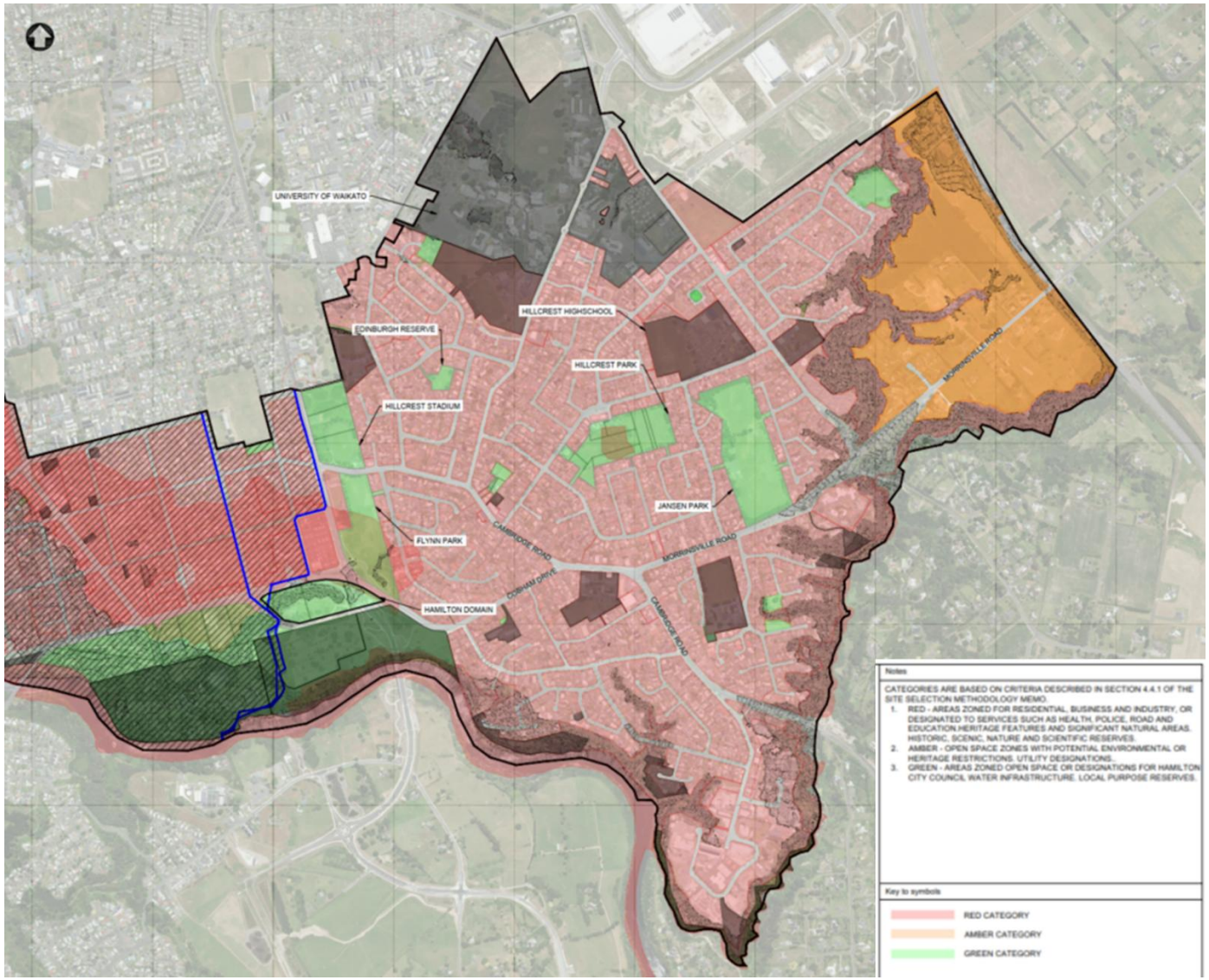
Source: Mott MacDonald, January 2026

Figure 3.5: Groundwater



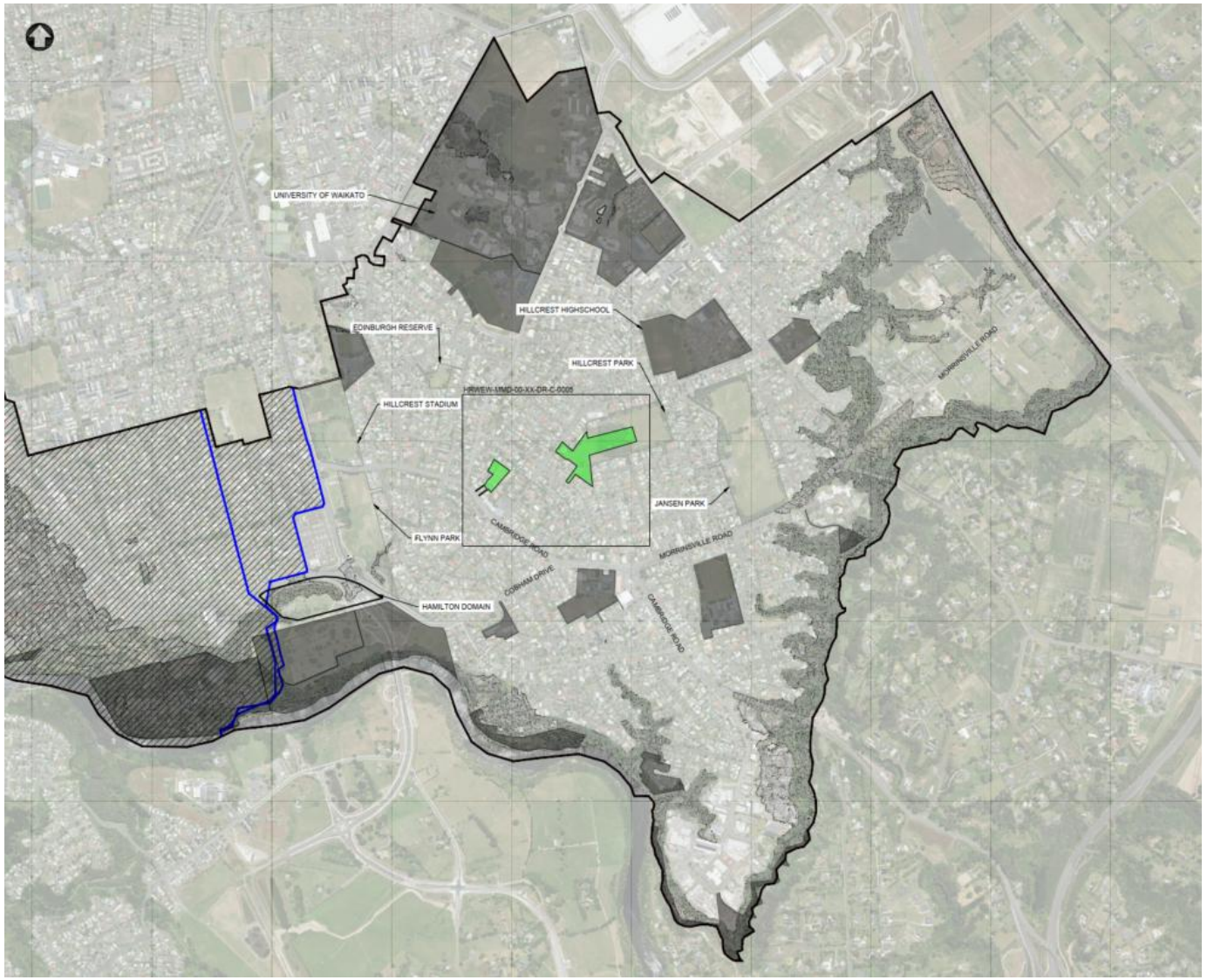
Source: Mott MacDonald, January 2026

Figure 3.6: Land use restrictions



Source: Mott MacDonald, January 2026

Figure 3.7: Recommended short list



Source: Mott MacDonald, January 2026

The two shortlisted sites identified are 111 Cambridge Road and Hillcrest Park.

3.4 111 Cambridge Road

3.4.1 Site description

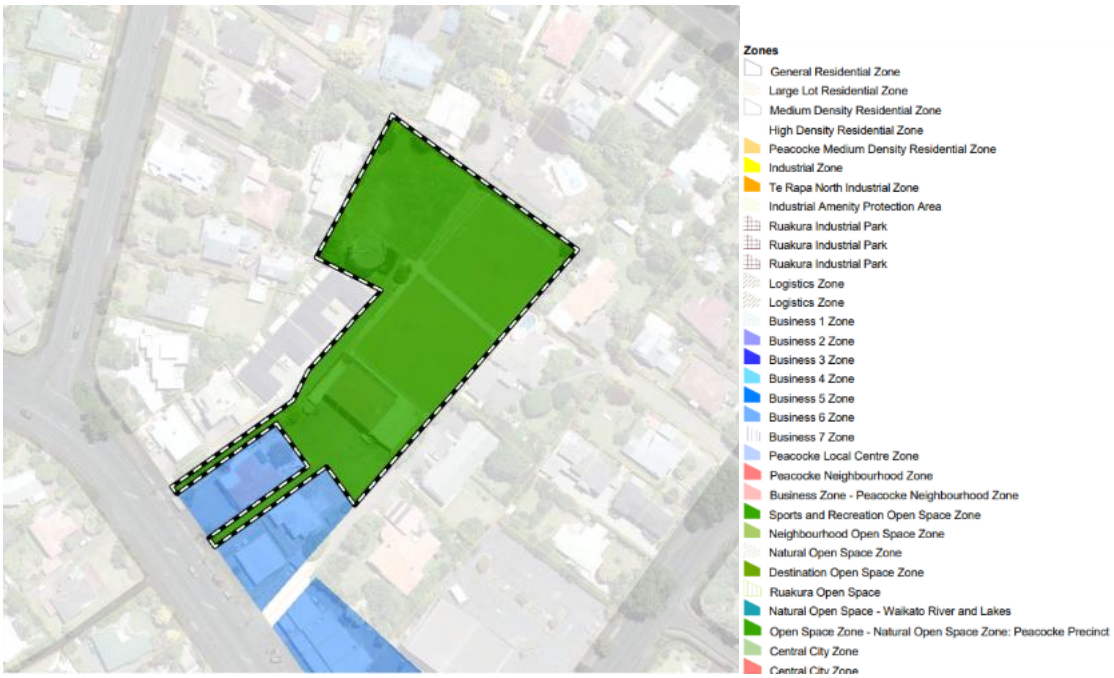
The proposed reservoir site called 111 Cambridge Road is made up of two sites; this includes the site of the existing Hillcrest Reservoir which is not currently operational and the site of the recently demolished Hillcrest Bowling Club. The site is designated for the purposes of 'Water Supply and Storage', and the requiring authority is HCC. Designation number 65 in the Hamilton City Council Operative District Plan (HCCODP). The designated site itself is too small for a major reservoir upgrade; therefore, the neighbouring bowling club site would be required. The site is a rear site in a block bordered by Cambridge Road, Hillcrest Road, Masters Avenue and Mansel Avenue. The subject site is contained in two records of title with a total area of approximately 6,451m2. The subject site is surrounded by residential properties on all boundaries with the exception of some commercial properties along the Cambridge Road frontage (early childhood centre, cafés/eateries) to the southwest of the subject site.

The subject site is zoned Sport and Recreation Open Space Zone under the HCCODP, and the following District Plan Features are applicable to the subject site:

- Infrastructure Capacity Overlay
- Hamilton Airport Obstacle Limitation Surface (Label: Outer Edge Horizontal Obstacle Limitation Surface - Conical Surface.: 207m Moturiki Datum)

The two sites adjoining the south-west boundary of the subject site (at the road frontage) are zoned Business 6 Zone – Neighbourhood Centre and all other sites adjoining the subject site are zoned General Residential. Zoning of the site and surrounding properties is illustrated in Figure 3.8 below.

Figure 3.8: 111 Cambridge Road Site (Option A)



Source: Hamilton City Council District Plan Maps, sourced August 2025

Figure 3.9 to 3.11 below are photos of the bowling club site and surrounding environment.

Figure 3.9: Existing reservoir site looking west across bowling green



Source: Mott MacDonald, March 2026

Figure 3.10: Existing reservoir site looking south



Source: Mott MacDonald, March 2026

Figure 3.11: 111 Cambridge Road access onto Cambridge Road



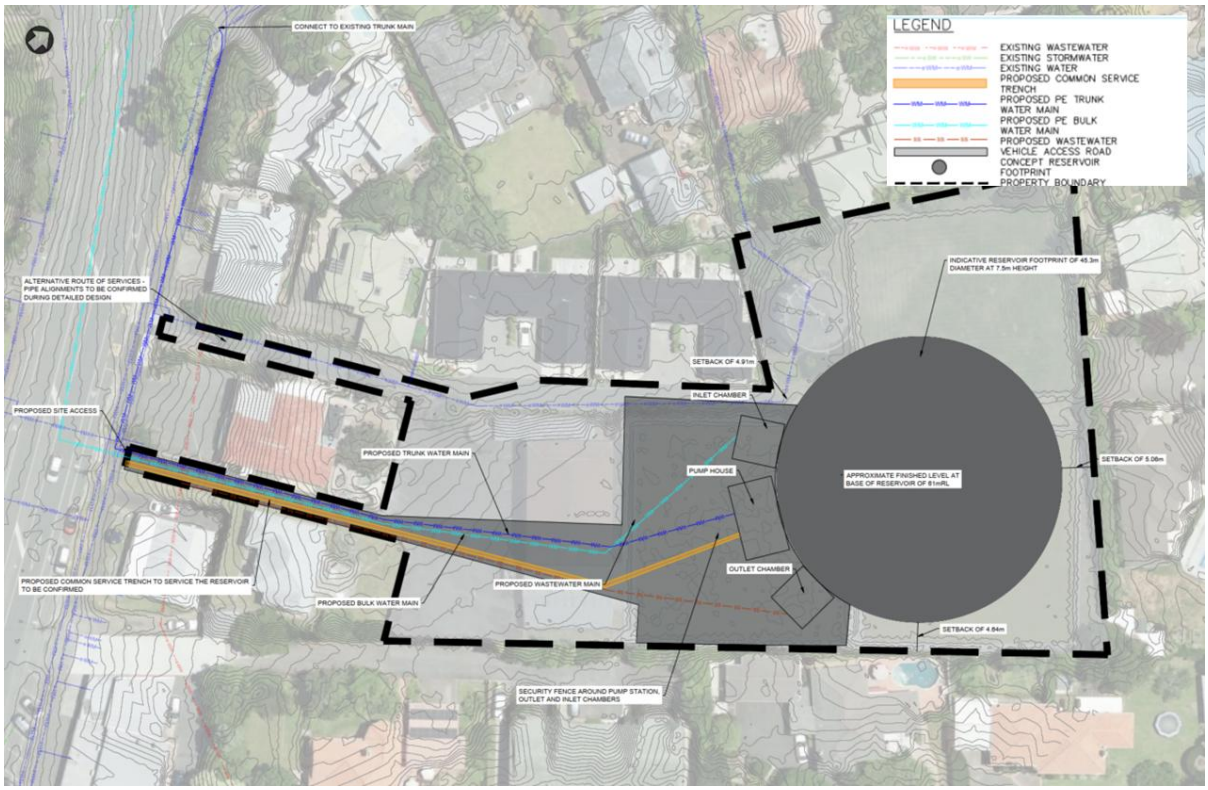
Source: Mott MacDonald, March 2026

3.4.2 Proposed Reservoir Site

To support a 12ML reservoir at this site, a total of 1.0km of pipelines are required to connect to the existing bulk and trunk main tie-in points. This value comprises of 0.8km of pipeline for the bulk main connection and 0.2km for the trunk main connection. Alternative routes are to be confirmed during the detailed design stage, although these are not expected to significantly alter the current estimated length of pipelines. The earthworks for a final proposed level of 61mRL is expected to be negligible. Given the final RL, a pressure head of 26m is required to service the proposed Hillcrest zone. To supply at a rate of 211.3L/s to the zone, a 90kW pump is required.

Figure 3.9 below is the indicative reservoir design and associated pipes and auxiliary infrastructure such as pump houses. Full drawing is attached in **Appendix D.**

Figure 3.12: 111 Cambridge Road site indicative layout



Source: Mott MacDonald (2026)

The indicative bulk and trunk main alignment that connects the reservoir to the existing bulk main is included in the drawing set in **Appendix D**. The proposed alignment to connect the reservoir to the existing bulk main begins at the intersection of Wairere Drive and Cambridge Road and runs along Cambridge Road until it reaches 111 Cambridge Road. The proposed trunk main connection alignment begins at the intersection of Hillcrest Road and Cambridge Road and ends at 111 Cambridge Road.

3.5 Hillcrest Park

3.5.1 Current Situation

Hillcrest Park is an Open Space Zone – Sports and Recreation Zone as defined in the HCCODP. It is surrounded by residential properties and can be accessed off Masters Avenue, Mansel Avenue, Fenwick Cresent, and Beech Cresent in the suburb or Hillcrest. There is a Significant Natural Area (F13 Hillcrest Kahikatea) of indigenous vegetation in the centre of the park. The park houses a playground, sports equipment, cricket pitch and field and park benches.

The park has been identified in the Hamilton Flooding Maps as having low level of flooding risk in a 1 – 100-year event. The flood viewer identifies the hazard level for this location is considered as Low.

The site is largely surrounded by residential properties and includes a kindergarten along its northern boundary.

Figure 3.13: Proposed reservoir location looking east across from playground



Source: Mott MacDonald, March 2026

Figure 3.14: Hillcrest Park playground looking north-west



Source: Mott MacDonald, March 2026

Figure 3.15: Proposed access and services looking toward Mansel Avenue



Source: Mott MacDonald, March 2026

Figure 3.16: View into Hillcrest Park from Mansel Avenue



Source: Mott MacDonald, March 2026

Figure 3.17: Hillcrest Park – tree potentially requiring removal



Source: Mott MacDonald, March 2026

Figure 3.18: Proposed reservoir location

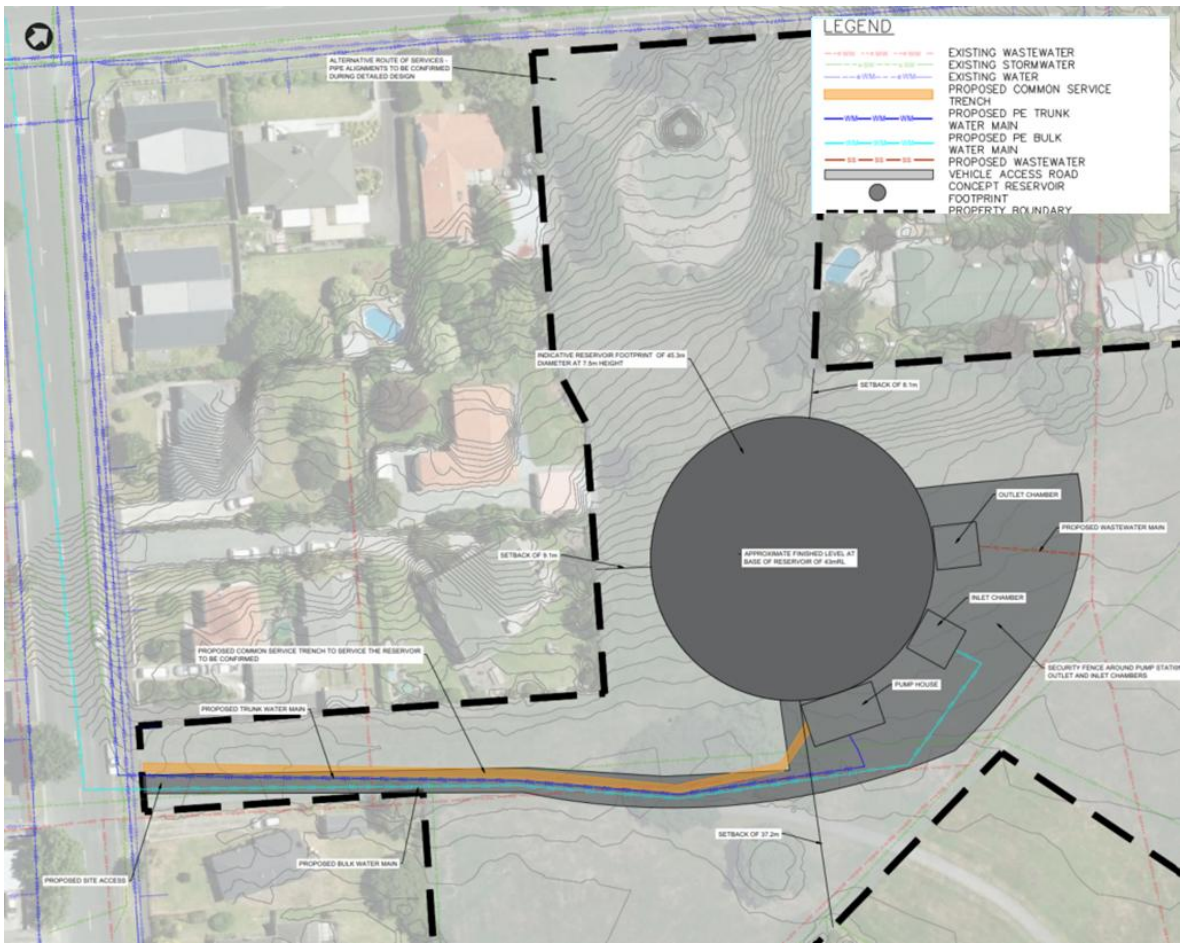


Source: Mott MacDonald, March 2026

3.5.2 Proposed Reservoir Site

Figure 3.10 below is the indicative reservoir design and associated pipes and auxiliary infrastructure such as pump houses. Full drawing is attached in **Appendix D.**

Figure 3.19: Hillcrest Park site indicative layout



Source: Mott MacDonald (2026)

The indicative pipe bulk and trunk main alignment that connects the reservoir to the existing bulk main is included in the drawing set in **Appendix D**. The trunk main connection alignment is identical to the proposed alignment in 111 Cambridge Road from the tie-in point to the intersection of Hillcrest Road/Cambridge Road. From this point onwards, the alignment for the proposed Hillcrest Road site continues along Cambridge Road, Masters Avenue, and Mansel Avenue before entering Hillcrest Park via the southwest corner. The proposed trunk main alignment is identical to the upstream portion of the bulk main connection alignment but terminates at the intersection of Hillcrest Road and Cambridge Road where the trunk main tie-in point is located.

Due to the topography of Hillcrest Park, an estimated 3600m^3 of earthworks will be required for the installation of the proposed 12ML reservoir for a final finished level of 43mRL.

The total length of pipelines required to connect the proposed reservoir to the existing bulk and trunk main tie-in points is approximately 2.1km. This comprises of 1.4km of pipeline for the bulk main connection and 0.7km of pipeline for the trunk main connection.

A pressure head of 44m is required to service the proposed Hillcrest zone. This will require a 132kW pump to supply the zone at a rate of 211.3L/s.

3.6 Determining the Recommended Site

The MCA framework criteria were included in the MCA framework and scoring matrix attached in **Appendix B** and agreed at a workshop held with HCC on 13 February 2026. For ease of reference the framework which includes the assessment criteria, sub criteria and description of that sub criteria is included in table 3.2 below.

Table 3.2: MCA Framework Criteria

Assessment Criteria	Contributing Factors/ Sub-criteria	Description
Operations	Pump and pump station complexity or scale	Quantitative assessment of pump size to meet output head required. Pump size accounts for both power/energy consumption as well as maintenance costs – larger pump results in higher costs.
	Accessibility including access to infrastructure for maintenance (sludge removal etc)	Evaluates how easily operators can access key infrastructure components (e.g., reservoir structure, valves, chambers, pipework, and control systems). Good accessibility reduces operational risks, maintenance time, and whole of life costs. Includes access for maintenance and inspections of reservoirs to clean out sludge.
	Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	Considers the total length of new pipework that will require maintenance and renewals. Shorter or more efficient alignments reduce long-term maintenance effort.
	Facility operation impacts	Assesses ongoing operational effects on the surrounding community, including noise from pumps, vehicle movements associated with maintenance activities, and general site activity. Options causing fewer or less frequent impacts score higher.
Resilience	Network resilience	This considers long term network resilience including system performance under emergency situations such as pump power failure.
	Future proofing	Current design accommodates the 2061 (36 year) projected demand. Availability of space for future proofing/addition of a potential second reservoir at a later stage, where the proposed additional bulk and trunk main alignments can still be used.
	Geotechnical Resilience	A geotechnical desktop study is intended to identify areas of risk for a successful reservoir site (associated pipelines). This study provides a review of existing literatures and studies, borehole logs, and soil mapping data for the proposed sites. This report will summarise the geotechnical conditions of each proposed site (and along the pipeline alignment), including soil types and any potential geohazards and land instability risks associated with the development.
Social (long term)	Landscape Effects	Degree of change to existing landform and vegetation, impact on landscape features (e.g., trees, bush, open space), compatibility with existing land use and character, loss or alteration of valued landscape elements.
	Visual Effects	Visibility from public viewpoints (roads, parks, walkways), visibility from private properties (especially residential), extent of existing screening or mitigation (e.g., vegetation buffers), change in visual amenity or quality of views.
	Social cohesion (operational)	Impact on connectivity/ accessibility for the existing urban areas including access to other communities, shops, scale of effect on existing community facilities and open space, public access to open space.
	Human health and wellbeing	Potential impacts on sensitive land uses nearby, particularly relating to noise, traffic and amenity
Environmental (RMA/ legislative)	Ecology	Impacts on the surrounding environment including the receiving waterways, trees and wildlife that may be impacted by the proposed works both long term and short term.
	Earthworks	The extent of earthworks that impacts the form of the land and the ability to achieve earthworks neutrality.

	Pre/Post development considerations	The impact and scale of the change from how the site is currently being used versus how the site will be post-development.
Planning Risk	Land use restrictions	District Plan, Regional Plan, National Environmental Standards, Reserves Act rules, land uses and restrictions.
Constructability	Impacts during construction staging (Phase Plan)	The complexity of the build due to existing infrastructure, e.g. the temporary works required, additional considerations such as retaining wall construction, demolition of any existing infrastructure, relocation of services, asbestos and contaminated land., impact on existing water supply during construction and commissioning.
	Critical design uncertainties	The uncertainty surrounding the design and the scale and risk of these uncertainties. Design uncertainties raised from items such as limited access for geotechnical investigations or unknown historic infrastructure.
	Main site access	Disruption caused by accessing the site during construction such as vehicle movements to and from site per day.
	Public disruption	Proximity and sensitivity of nearby receptors to construction activities. Construction-related disruption, including vibration, noise and accessibility issues.
	Traffic management requirements	Impacts to traffic and complexity implementing traffic management to construct the reservoir and bulk/trunk mains including the potential vehicle counts affected based on road type/ usage.
	Carbon assessment	Qualitative assessment of carbon emissions to construct the bulk and trunk pipework based on the length of pipes required.

A weighting workshop was held to confirm the weightings of each criteria and sub criteria and to gain approval from HCC on the scoring matrix. The complete scoring sheet is included in **Appendix E.** This sheet also includes the proposed scoring team of specialists for each sub criteria.

Post the weighting workshop, it was confirmed that Mana Whenua would score each site based on their criteria as a separate process outside of the MCA. Their section was removed from the MCA.

Final recommended site is the agreed alignment of Mana Whenua score and the MCA.

Table 3.3: Summary of scoring assessment

		Moderated Raw Scores		**Weighted Scores**	
Assessment Criteria + weightings	**Contributing Factors/ Sub-criteria + weighting**	**111 Cambridge Road**	**Hillcrest Park**	**111 Cambridge Road**	**Hillcrest Park**
Operations 33%	Pump and pump station complexity or scale – 45%	6	4	2.7	1.8
	Accessibility including access to infrastructure for maintenance (sludge removal etc) – 10%	5	5	0.5	0.5
	Maintenance including meters and diameters of new bulk and trunk main pipework to maintain – 30%	5	2	1.5	0.6
	Facility operation impacts – 15%	4	6	0.6	0.9
	Sub Total – 100%	**20**	**17**	**5.3**	**3.8**
Resilience 23%	Network resilience – 20%	6	1	1.2	0.2
	Future proofing – 50%	4	6	2	3
	Geotechnical Resilience – 30%	7	3	2.1	0.9
	Sub Total – 100%	**17**	**10**	**5.3**	**4.1**
	Landscape Effects – 20%	5	3	1	0.6

Social (long term) 13%	Visual Effects – 40%	3	3	1.2	1.2
	Social cohesion (operational) – 20%	7	3	1.4	0.6
	Human health and wellbeing – 20%	6	4	1.2	0.8
	Sub Total – 100%	**21**	**13**	**4.8**	**3.2**
Environmental (RMA/ legislative) 13%	Ecology – 50%	6	4	3	2
	Earthworks – 25%	7	2	1.8	0.5
	Pre/Post development considerations – 25%	6	2	1.5	0.5
	Sub Total – 100%	**19**	**8**	**6.3**	**3**
Planning Risk 8%	Land use restrictions – 100%	5	3	5	3
	Sub Total – 100%	**5**	**3**	**5**	**3**
Constructability 8%	Impacts during construction staging (Phase Plan) – 10%	4	6	0.4	0.6
	Critical design uncertainties – 20%	5	6	1	1.2
	Main site access – 20%	4	6	0.8	1.2
	Public disruption – 15%	3	4	0.5	0.6
	Traffic management requirements – 20%	4	3	0.8	0.6
	Carbon assessment (length of trunk and bulk main lengths) – 15%	5	2	0.8	0.3
	Sub Total – 100%	**25**	**27**	**4.2**	**4.5**
	Total Score	**107**	**78**	**5.2**	**3.7**

Source: Mott MacDonald, 2026

Based on weighted scores, 111 Cambridge Road achieved the highest score of 5.2 and Hillcrest Park scored the lower score of 3.7, indicating it is the least favourable option under the agreed MCA frameworks.

As mentioned above, Mana Whenua scores are not included in this scoring and the recommendation is an alignment of both scores, MCA and Mana Whenua. Mana Whenua scores are discussed in section 4.8.

Justification for the raw scores are provided in the discussion section below.

4 Discussion

A summary of the scoring rationale for each criterion is provided below. Please refer to **Appendix E** for the complete scoring sheet.

4.1 Operations

Table 4.1: Operations Scoring Summary

	111 Cambridge Road (Option A)	Hillcrest Park (Option B)
Pump and pump station complexity or scale	6	4
Accessibility including access to infrastructure for maintenance (sludge removal etc)	5	5
Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	5	2
Facility operation impacts	4	6

4.1.1 Pump and pump station complexity or scale

The base level of the reservoir at 111 Cambridge Road is 61mRL. At this elevation, an additional pressure head of 26m is required to service the proposed Hillcrest Zone. A 90kW pump is required to supply the zone giving a high score at this site.

The base level of the reservoir at Hillcrest Park would be 43mRL. At this elevation, an additional pressure head of 44m is required to service the proposed Hillcrest Zone. A 132kW pump is required to supply the zone giving it a moderate score at this site.

4.1.2 Accessibility

Option A has a narrow access tract which could hinder large vehicle movement during construction and any future significant renewals activities. This site is constrained due to proximity to residential and commercial property boundaries, thus receiving a moderate score.

Option B services are proposed along a shared access path route which would require closure during construction and would restrict access for any maintenance or renewals works in future. Permissions from HCC Parks team and traffic management to direct park users away from the access track would be required. The minor slope of the site could also pose accessibility issues during operation and maintenance if the reservoir requires some burying, thus receiving a moderate score.

4.1.3 Maintenance of bulk and trunk main pipework

1.0km of new bulk and trunk main construction required at 111 Cambridge Road site receiving a moderate score.

2.2km of new bulk and trunk main construction required for the proposed Hillcrest Park site receiving a low score.

4.1.4 Facility Operation

Due to Option A's proximity to private properties, potential impacts such as operational and maintenance light and noise are likely to cause some disturbance to neighbours. Maintenance vehicles would likely access the site using shared accessway/s with surrounding properties. Due to the close proximity of neighbours, Option A has an average score for expected facility operation impacts.

Due to the distance from neighbours and the potential layout of Option B, operation and maintenance aren't expected to significantly impact neighbouring properties. Access to the reservoir and to the proposed services are not shared with any surrounding properties. However, Hillcrest Park has high public use, so maintenance would be visible to park visitors and access potentially restricted at times. Option B has a high score for expected facility operation impacts.

4.2 Resilience

Table 4.2: Resilience Scoring Summary

	111 Cambridge Road (Option A)	Hillcrest Park (Option B)
Network resilience	6	1
Future proofing	4	6
Geotechnical Resilience	7	3

4.2.1 Network Resilience

At Option A, the number of properties with an unacceptable level of service (less than 10m) is 585. The number of properties with an acceptable level of service (greater than 10m) is 5097. This site therefore receives a high score.

At Option B, the number of properties with an unacceptable level of service (less than 10m) is 5435. The number of properties with an acceptable level of service (greater than 10m) is 247. This site therefore receives a low score.

4.2.2 Future Proofing

Option A has limited space for expansion receiving an average score.

Hillcrest Park is a large site with space for future expansion, but this would decrease the usable park space. This option received a high score.

4.2.3 Geotechnical Resilience

Option A is located at or near the crest of a rolling hill with gentle slopes and no identifiable large-scale instability features evident from site layout or long-section profiles. This landform setting received a high score.

Option B is located on lower-lying to mid-slope terrain with greater earthworks requirements and increased geomorphic uncertainty. While no obvious geohazards are indicated on the drawings, the landform warrants more detailed assessment and received a low score. The Hillcrest Reservoir – site selection desktop assessment is attached as **Appendix G**.

4.3 Social Impact (long term)

	111 Cambridge Road (Option A)	Hillcrest Park (Option B)
Landscape Effects	5	3
Visual Effects	3	3
Social Cohesion	7	3
Human health and Wellbeing	6	4

4.3.1 Landscape Effects

Option A is an elevated, relatively flat site with minimal vegetation, meaning earthworks can largely retain existing ground levels without retaining walls. While the construction footprint is constrained by adjacent residential properties, the landform and prior use make the site generally suitable with manageable amenity effects. There are opportunities for mitigation planting, but these are restricted in this area. 111 Cambridge Road received an overall moderate score for landscape effects.

Option B is a flat, open reserve with high recreational and landscape amenity value, where a reservoir would result in the loss of open grassed space and potentially require removal of existing mature trees. Although earthworks may be limited and some ecological or planting enhancements are possible, effective visual integration would likely further reduce usable open space, resulting in a reduction of usability of the park. Hillcrest Park received an overall low score for landscape effects.

4.3.2 Visual Effects

Option A would introduce a visually prominent reservoir with moderate to potentially high negative visual and shading effects for the closest neighbours at 15 and 17 Masters Avenue due to proximity, limited setback, and constrained screening opportunities. For other surrounding properties, greater separation, existing vegetation, and the presence of the existing tank provide context and mitigation potential, resulting in an overall low visual effects score.

A reservoir at Option B would be highly visible due to the open nature of the park and surrounding residential outlooks, with several properties along Mansel Avenue, Fenwick Crescent, and Masters Avenue experiencing moderate to high negative visual effects, particularly those in close proximity. While planting or earth bunds may offer mitigation over time, initial visual effects are expected given the flat topography and limited immediate screening, resulting in an overall low visual effects score.

4.3.3 Social Cohesion

Option A is a former bowling club site with no current public use or through-access, historically and presently functioning as a private or utility space. Development of a reservoir is therefore expected to have negligible social or community impact, with no loss of recreational open space or disruption to pedestrian movement or social interaction, therefore receiving a high score for social cohesion.

Option B would introduce a large, fenced infrastructure element into a well-used public reserve, disrupting pedestrian movement, severing connections between park areas (including the playground), and resulting in permanent loss of open recreational space. Construction and long-term operation is expected to reduce accessibility, perceived safety, and the park's role as a community and social asset, therefore receiving a low score for social cohesion.

4.3.4 Human health and Wellbeing

Option A has previously been used for water infrastructure, has limited public interaction, and most surrounding dwellings face away or are screened by fencing and vegetation. While the reservoir would be

close to some residential receivers, visual, noise, and amenity effects are generally mitigatable and consistent with the site's existing utility function, resulting in low overall community and wellbeing impacts.

Option B places a reservoir within a well-used public park, directly affecting recreational space and the wellbeing of park users, with several nearby homes having primary views over the site. The introduction of a reservoir would disrupt the park's recreational purpose, resulting in loss of community space, reduced amenity for residents and users, and higher adverse impacts on wellbeing.

4.4 Environmental

	111 Cambridge Road (Option A)	Hillcrest Park (Option B)
Ecology	6	4
Earthworks	7	2
Pre/post development considerations	6	2

4.4.1 Ecology

Option A has very low ecological sensitivity due to its existing use as bowling greens, with no notable trees or identified habitats present. Construction and operation effects are expected to be negligible. While on-site enhancement opportunities are limited, ecological mitigation or enhancement could be readily achieved off-site if required. This site was given a high score for ecological impact.

Option B has potential ecological risk and uncertainty, with mature trees potentially affected, proximity to a Significant Natural Area (SNA), and possible habitat for protected fauna such as long-tailed bats and lizards. While there may be opportunities for additive ecological benefits through planting or predator control, construction is likely to result in tree loss, habitat disturbance, and the need for further ecological assessment. This site was given an average score for ecological impact.

4.4.2 Earthworks

Option A is located on relatively flat terrain, requiring low to negligible earthworks and negligible cut-to-waste volumes (well under 1000 m^3), receiving a high score.

Option B is located on sloping terrain that would require significant earthworks, with estimated cut-to-waste volumes of approximately 3600 m^3 for reservoir installation. As a result, this site received a low score.

4.4.3 Pre/post development considerations

Option A involves redevelopment of a vacant, non-public site previously used for bowling and water storage, with no existing recreational or community function. While the reservoir would introduce a dominant infrastructure form for nearby properties, public use and access would remain unchanged, and landscape mitigation is possible in some locations, resulting in a high score.

Option B would introduce large-scale infrastructure into a well-used public park, resulting in a significant reduction of accessible open space and a dominant built form within the reserve. Although there is greater opportunity for planting or artistic mitigation in a public setting, the reservoir would substantially alter the character, use, and public enjoyment of the park, resulting in a low score.

4.5 Planning Risk

	111 Cambridge Road (Option A)	Hillcrest Park (Option B)
Land use restrictions	5	3

4.5.1 Land use restrictions

Option A largely aligns with its existing water-storage designation, has no significant land-use constraints, and no identified flooding risk. While designation boundary changes and contaminated land management may be required due to historic sports turf use, these effects are construction-related and readily manageable through standard investigation and mitigation measures. As a result, 111 Cambridge Road received a moderate score.

Option B is subject to strong statutory and planning constraints, being an active recreation reserve with a nearby Significant Natural Area (SNA) and areas of flood risk. Development would require reserve reclassification or revocation and a new designation, processes that are less certain and likely to attract public challenge, resulting in consenting complexity and risk. This site received a low score for land use restrictions.

4.6 Constructability

	111 Cambridge Road (Option A)	Hillcrest Park (Option B)
Impacts during construction staging (Phase Plan)	4	6
Critical design uncertainties/adaptability	5	6
Main site access	4	6
Public Disruption	3	4
Traffic management requirements	4	3
GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	5	2

4.6.1 Impacts during construction staging (Phase Plan)

Option A presents moderate to high construction complexity due to constrained access, proximity to residential properties, limited laydown space, and reliance on a right-of-way for large loads. Works would need to be carefully staged and sequenced, with some temporary measures required despite limited service relocations and no anticipated retaining structures. This site therefore received an average score.

Option B benefits from a large, open site that allows greater flexibility for construction access, material storage, and machinery movement, reducing overall construction complexity. While some constraints exist, such as tree removal, potential service avoidance or relocation, and upgrading access tracks, the space available provides a straightforward construction staging environment, therefore receiving a high score.

4.6.2 Critical design uncertainties/adaptability

Option A has low relative design uncertainty due to the presence of existing water infrastructure/facilities. This site received an overall moderate score.

Option B has some design uncertainty due to the absence of existing water infrastructure on site.

4.6.3 Main site access

Option A has constrained site access off a busy collector road, with a narrow driveway and limited alternative access routes, likely requiring extensive traffic management for heavy vehicles. Proximity to neighbouring houses and tight geometry increase disruption to immediate residents and add complexity to access planning. This site received an overall average score.

Option B benefits from more flexible access arrangements, with multiple entry options from quieter local roads and greater space for vehicle movement within the park. It should be noted that construction traffic would still disrupt nearby residents and park users (including pedestrians and cyclists). This site received an overall high score for main site access.

4.6.4 Public disruption

Option A is located in close proximity to 15 adjacent residential properties, nearby businesses, and an immediately adjoining kindergarten. Construction activities are likely to generate noticeable noise, dust, access disruption, and potential parking loss, with effects amplified by the shared, constrained accessway and the site's dense residential context. This site received a low score for public disruption.

The construction of a reservoir at Hillcrest Park would generate noise and dust effects for nearby residents and the adjacent kindergarten, with disruption to park users due to access closures and restricted movement through the reserve. However, there are separation distances to most dwellings and there are no surrounding businesses affected. Construction effects are relatively dispersed, but experienced by a broad user group. This site received an average score for public disruption.

4.6.5 Traffic management requirements

Option A would require moderately complex traffic management due to constrained site access onto a busy collector road and construction of trunk and bulk mains through multiple intersections. Effects are expected to be relatively localised but prolonged, with TMPs required for large vehicle movements and careful management of residential access. This site received an overall average score.

Option B offers vehicle access from lower-traffic volume local roads; however, traffic management effects are expected to be widespread due to long lengths of trunk and bulk mains, truck movements from considerable earthworks, and the need to manage pedestrian and cycle access through and around the park. Overall TMP complexity is driven by scale and public access management rather than road congestion. This site received an overall low score.

4.6.6 GHG and Carbon Emissions

Greenhouse gas and carbon emissions is directly related to the length of new trunk and bulk main. Both sites were scored according to the expected length of pipeline to be constructed. Option A received a moderate score as it requires 1.0km of pipeline to be constructed. Option B received a low score as it requires 2.2km of pipeline to be constructed.

4.7 Sensitivity Analysis

4.7.1 Overview

At the scoring moderation session on the 20th of April 2026, it was agreed that a sensitivity analysis be undertaken even though the scores of the MCA provided a clear favourable site. A sensitivity analysis was conducted to test the robustness of the process and to assess how changes to criteria weightings could influence the final outcome of the preferred design option.

4.7.2 Results

Figures 4.1 to 4.6 below present the six sensitivity analysis graphs corresponding to each of the six main criteria.

The graphs are plotted against the incremental changes in weighting for the specific criterion and the corresponding overall weighted scores for each site.

For example, in the environmental sensitivity analysis, the weighting for the environmental criterion was progressively increased by 10%, 20%, and 30% while the remaining criteria were proportionally adjusted based on the base weightings agreed during the workshop. The resulting overall weighted score (factoring in all criteria) are plotted against the incrementally increased weighting for the environmental criterion.

Figure 4.1: Operations criterion sensitivity analysis.

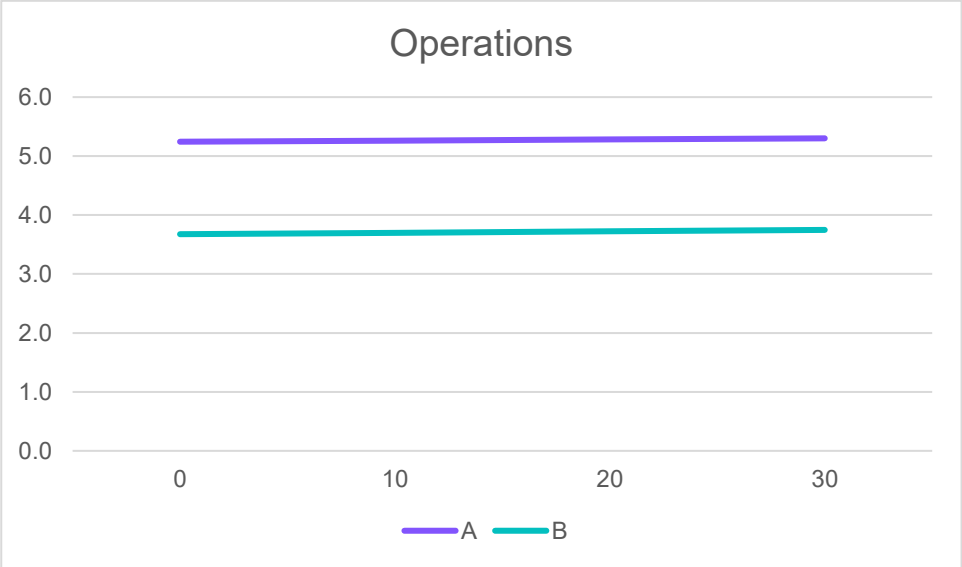


Figure 4.2: Resilience criterion sensitivity analysis.

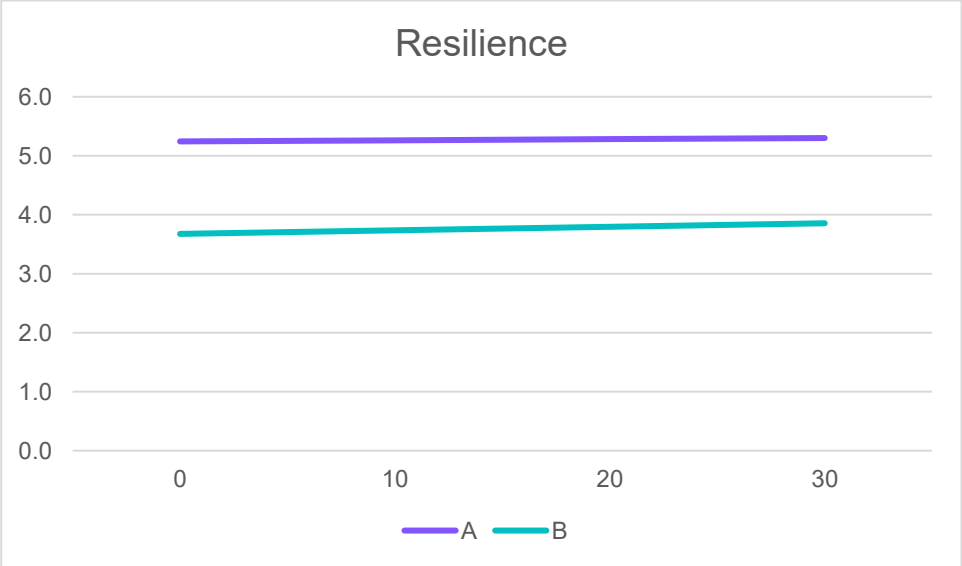


Figure 4.3: Social impact criterion sensitivity analysis.

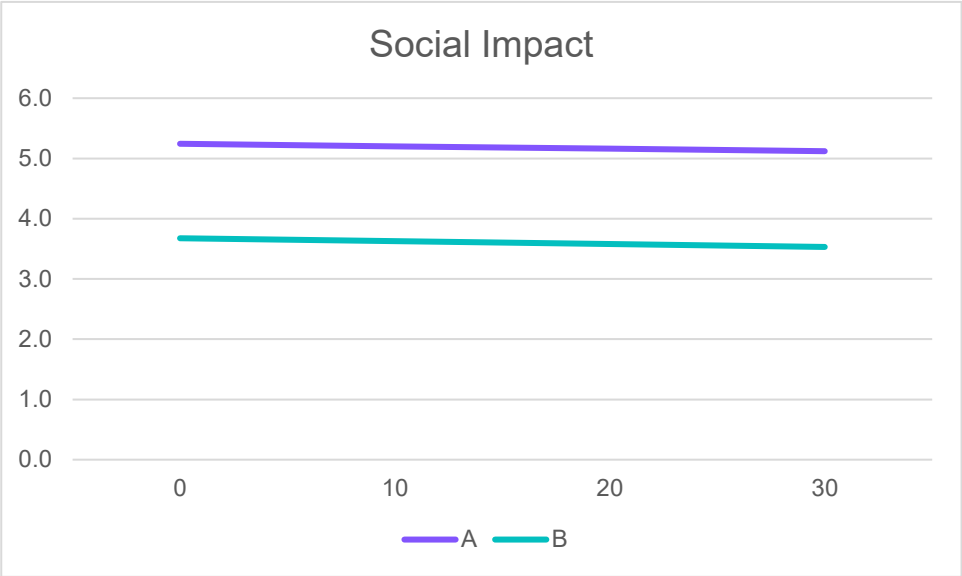


Figure 4.4: Environmental criterion sensitivity analysis.

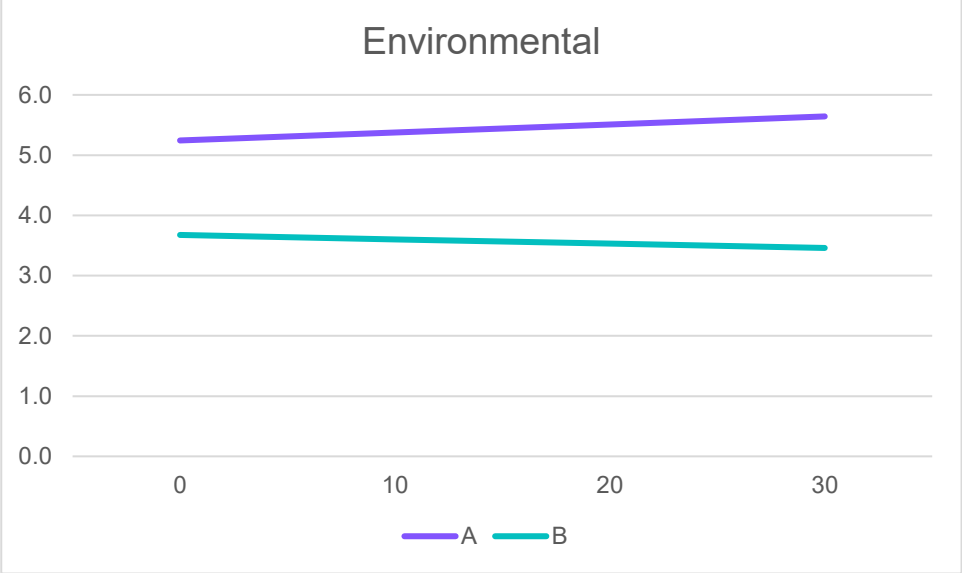


Figure 4.5: Planning risk criterion sensitivity analysis.

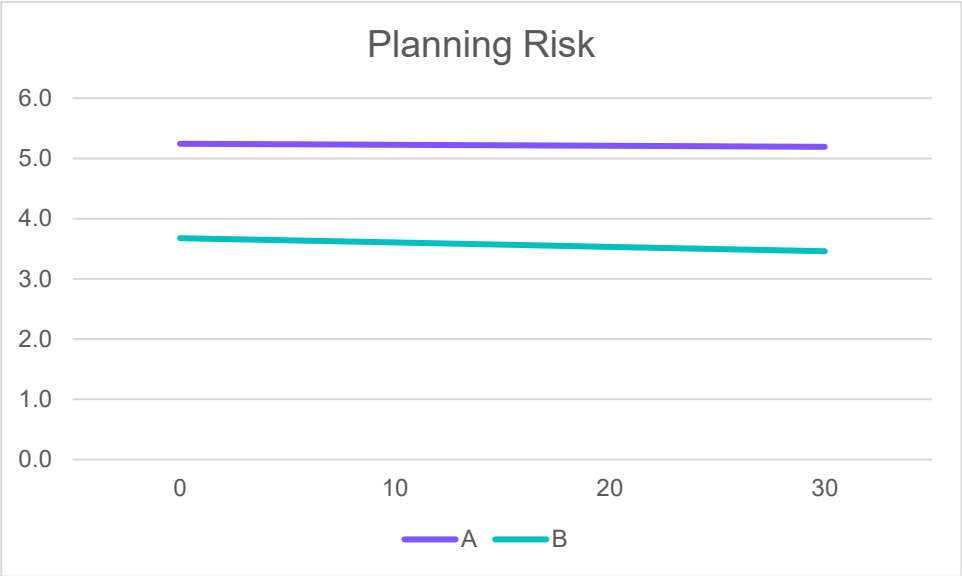
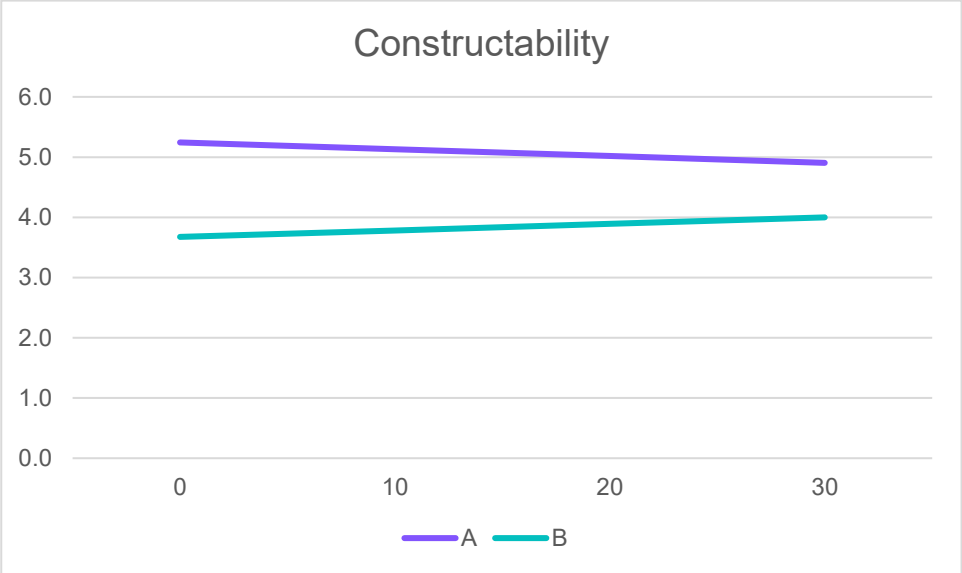


Figure 4.6: Constructability criterion sensitivity analysis.



4.7.3 Key Takeaways

Following the sensitivity analysis, a few observations can be made.

- Option A consistently scores higher than Option B irrespective of what criterion is changed and what weighting is applied.
- When the environmental criterion weighting is increased, Option A's favourability increases significantly while Option B's score drops significantly against the baseline.
- Inversely, when the constructability criterion weighting is increased, Option A's score drops significantly while Option B's score increases significantly against the baseline.

4.8 Mana Whenua

Part 2 of the Resource Management Act 1991 (RMA) sets out specific considerations in relation to how mana whenua values and interests must be considered in decision making processes. Mana whenua have been engaged throughout the MCA process.

As raised in section 3.6, mana whenua scoring has been undertaken using their own values-based scoring process. Mana whenua met with the HCC project team on the 7th of May 2026 to undertake an options assessment. Minutes from this meeting is included in **Appendix F**.

The results of this process as identified in section 11.1 of the minutes, are that all representatives present identified Option A, 111 Cambridge Road as their preferred option. The key reasons included:

Option A is more modified and has stronger technical resilience benefits, but has localised impacts on nearby neighbours.

Option B has broader potential impacts on public open space, park users, landscape, ecology and cultural values.

As concluded in 13.1 of the minutes, it was agreed to proceed with Option A as the preferred site.

5 Conclusion and Recommendations

5.1 Conclusions

The need for a new Hillcrest water supply zone and a reservoir has been identified as part of Hamilton City Council's long-term plan, to enable future growth, economic development and improve network resilience.

The existing Cambridge Road Water Reservoir designation (A65) at 111 Cambridge Road, Hillcrest, Hamilton is not large enough to accommodate a larger reservoir required to service the water supply needs of Hamilton.

Mott MacDonald has been engaged to undertake an alternatives assessment to support site selection and planning for this new Hillcrest Reservoir, which will supply the Hillcrest Zone as identified in the Hamilton Water Supply Network Master Plan to 2024 and beyond and dated October 2023.

In phase 1 of the project, a long list of areas was identified as potential spatial areas located within the Hillcrest Zone Boundary. To support the identification of the list, a first iteration of assessments was undertaken to exclude/ eliminate areas with fatal flaws that render them unsuitable for reservoir construction and operation.

In phase 2 of the project, a short list of sites was identified through the development of a number of critical success factors which were assessed as either red, amber or green resulting in a short list of two sites, 111 Cambridge Road (Option A) and Hillcrest Park (Option B).

In phase 3 of the project, a MCA framework was developed and agreed with HCC comprising six criteria including:

- Operations
- Resilience
- Social Impacts
- Environmental Impacts
- Planning Risk
- Constructability

These criteria were divided into sub criteria and scoring matrices developed and were provided a score out of 7. Scoring of each site was undertaken independently by subject matter experts across both HCC teams and specialist consultants. Weightings were allocated to each criteria and sub criteria to produce a favourable option.

The summary of the MCA findings includes the following scores:

- Option A – 111 Cambridge Road – **5.2**
- Option B – Hillcrest Park – **3.7**

Sensitivity analysis was undertaken to test the influence of weightings on the final outcome. The sensitivity analysis concluded that option A consistently scores higher than Option B irrespective of what criterion is changed and what weighting is applied.

Mana whenua also undertook their own values-based scoring process which identified Option A as the preferred site.

To summarise, through both undertaking a robust MCA process and a mana whenua values-based assessment, option A, 111 Cambridge Road is the recommended site.

5.2 Recommendations and Next Steps

The MCA process outlined above provides a structured and transparent framework to inform decision-making. It is noted that the MCA is one of several tools available to decision-makers and should be considered alongside further technical, environmental, cultural, and statutory considerations in determining the most appropriate site to progress for designation.

Based on the MCA outcomes, the site at 111 Cambridge Road is identified as the recommended site for further progression through the Notice of Requirement (NoR) process.

Prior to advancing the NoR, it is recommended that:

- **Key assumptions underpinning the assessment are reviewed and validated**, including those relating to design parameters, environmental constraints, land availability, and operational requirements.
- **Design risks and uncertainties are further interrogated**, with a focus on confirming constructability, geotechnical conditions, access arrangements, and integration with existing infrastructure.
- **Targeted technical investigations are undertaken as required** to reduce residual uncertainty and support the robustness of the designation (e.g. geotechnical investigations and preliminary planning assessment).
- **Stakeholder and landowner engagement is progressed**, where relevant, to inform refinement of the proposed site and identify any potential constraints early.

Appendices

Appendix A – Hillcrest Reservoir Site Selection Methodology

Appendix B – Hillcrest Reservoir Site Selection Scoring Matrix

Appendix C – Hillcrest Reservoir & Watermain Long List to Short List Preliminary Drawing Set

HRWEW-MMD-00-XX-DR-C-0000 – Cover Sheet & Drawing Register 1
HRWEW-MMD-00-XX-DR-C-0001 – Zone Boundary & Exclusions 2
HRWEW-MMD-00-XX-DR-C-0002 – Spatial Position Assessment 3
HRWEW-MMD-00-XX-DR-C-0003 – Elevation Assessment 4
HRWEW-MMD-00-XX-DR-C-0004 – Geology Assessment 5
HRWEW-MMD-00-XX-DR-C-0005 – Groundwater Assessment 6
HRWEW-MMD-00-XX-DR-C-0006 – Consenting Assessment 7
HRWEW-MMD-00-XX-DR-C-0007 – Site Selection 8
HRWEW-MMD-00-XX-DR-C-0008 – Detailed Site Overview 9

Appendix D – Hillcrest Reservoir & Watermain Short List Preliminary Drawing Set

HRWEW-MMD-00-XX-DR-C-0101 – Option A Outline Plan And Section 1
HRWEW-MMD-00-XX-DR-C-0102 – Option B Outline Plan and Section 2
HRWEW-MMD-00-XX-DR-C-0110 – Option A Outline Site Layout 3
HRWEW-MMD-00-XX-DR-C-0111 – Option B Outline Site Layout 4
HRWEW-MMD-00-XX-DR-C-0120 – Option A Bulk and Trunk Main Alignment 5
HRWEW-MMD-00-XX-DR-C-0121 – Option B Bulk and Trunk Main Alignment 6

Appendix E – Specialist Scoring Sheets and Moderation Workshop Results

Appendix F – Mana Whenua Options Assessment Meeting Minutes

Appendix G – Hillcrest Reservoir Site Selection Geotechnical Desktop Assessment

Appendix A – Hillcrest Reservoir Site Selection Methodology

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Hillcrest Reservoir Site Selection Methodology

Project:	Hillcrest Zone Implementation Bulk Infrastructure - Early Works		
Our reference:	705100882 - 002		
Prepared by:	Nayanthara Senaratne/Rebecca Ellery	Date: 11 February 2026	
Approved by:	Kat Jackson	**Checked by:**	Blair Telfer
Subject:	Hillcrest Reservoir Site Selection Methodology		

1 Introduction and Purpose

The need for a new Hillcrest water supply zone and a reservoir has been identified as part of Hamilton City Council's (HCC) long-term plan, to enable future growth, economic development and improve network resilience.

The existing Cambridge Road Water Reservoir designation (A65) at 111 Cambridge Road, Hillcrest, Hamilton is not large enough to accommodate a larger reservoir required to service the water supply needs of Hamilton.

Mott MacDonald has been engaged to undertake an alternatives assessment to support site selection and planning for this new Hillcrest Reservoir, which will supply the Hillcrest Zone as identified in the Hamilton Water Supply Network Master Plan to 2024 and beyond and dated October 2023 (Master Plan).

This memo outlines the proposed evaluation process and key assumptions for selecting a preferred Hillcrest Reservoir site and seeks HCC's agreement on the proposed approach. Noting a separate alternatives assessment memo will be developed to discuss the assessment results.

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

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Mott MacDonald Restricted

2 Project objectives

The main objectives of establishing a new Hillcrest reservoir, as provided by HCC in October 2025 are listed below:

1. Confirmation of site selection.
2. Construction of a new reservoir to create adequate storage within this zone and alleviate some of the storage deficiencies in Hamilton.
3. Construction of a pump station and output main to extract water from the proposed Hillcrest reservoir and provide levels of service via dedicated pumping to the proposed Hillcrest (pressure) Zone. This will provide better flow and pressure management to the Hillcrest area.
4. Securing all necessary approvals to cover the new reservoir and new pumpstation to futureproof the ongoing operation, maintenance and security of water supply in the Hillcrest area.
5. Construction of a new bulk main to service the new reservoir and future extensions.
6. Deliver safe and compliant drinking water to Hamiltonians.
7. Implementation of the Hillcrest reservoir pressure zone boundary.
8. Creation of multiple District Metered Areas (DMA's) within the new Hillcrest (pressure) zone. This will simplify the operation of each zone and help to quantify the amount of water used more accurately, establishing a framework for water-loss identification and subsequent reduction.

3 Legislative Requirements

To enable the development of a larger reservoir, the current designation A65 will require an alteration under section 181 of the Resource Management Act (RMA) or a new designation through a notice of requirement process. Alternatively, a designation or resource consent may be required at an alternative location.

3.1 Section 168 of the RMA – Notice of Requirement

Section 168 of the RMA sets out the requirements for a Notice of Requirement (NoR) to a territorial authority and is therefore applicable if the new publicly owned Council Controlled Organisation (CCO) IAWAI – Flowing Waters lodges the NoR[1]. It states:

> *(1) A Minister of the Crown who, or a local authority which has financial responsibility for a public work, may at any time give notice to a territorial authority of its requirement for a designation –*
>
> > *(a) for a public work; or*
> >
> > *(b) in respect of any land, water, subsoil, or airspace where a restriction is necessary for the safe or efficient functioning or operation of a public work*
>
> *(2) A requiring authority for the purposes approved under section 167 may at any time give notice in the prescribed form to a territorial authority of its requirement for a designation—*

[1] If HCC lodge the NoR, section 168A of the RMA applies.

(a) for a project or work; or

(b) in respect of any land, water, subsoil, or airspace where a restriction is reasonably necessary for the safe or efficient functioning or operation of such a project or work.

(3) In addition, a local authority may at any time give notice in the prescribed form to a territorial authority of its requirement for a designation for a work that relates to the construction of eligible infrastructure for which the local authority is a responsible infrastructure authority.

(3A) A notice given under subsections (1) to (3) must include an assessment of any effects that the project or work will have on the environment.

(3B) The assessment of the effects of the project or work on the environment must—

(a) have particular regard to any relevant provisions of—

(i) a national policy statement:

(ii) a New Zealand coastal policy statement:

(iii) a regional policy statement or proposed regional policy statement:

(iv) a plan or proposed plan:

(b) if the requiring authority does not have an interest in the land sufficient for undertaking the work,—

(i) give adequate consideration to any alternative sites, routes, or methods of undertaking the work; and

(ii) explain how the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought:

(c) if the requiring authority has an interest in the land sufficient for undertaking the work, and the work is likely to result in any significant adverse effect on the environment, describe possible alternative locations or methods for undertaking the activity.

(3C) The information required to be provided in the assessment need only be at a level of detail that is proportionate to the nature and significance of any effects of the project or work

From 1 July 2026, the new publicly owned Council Controlled Organisation (CCO) will be in place to deliver water services across Hamilton City and the Waikato District. This CCO (IAWAI – Flowing Waters) will be responsible for the construction and operation of this infrastructure. An assumption has been made that IAWAI will be approved as a requiring authority under section 167 of the RMA prior to the lodgement of the NoR for the proposed works.

Once approved as a requiring authority, IAWAI will lodge a NoR under section 168 of the RMA for the proposed works. Section 168 of the RMA requires that the requiring authority give adequate consideration to any alternative sites, routes, or methods of undertaking the work if it does not have an interest in the land sufficient for undertaking the work. If the requiring authority does have an interest in the land sufficient for undertaking the work, and the work is likely to result in any significant adverse effect on the environment, the requiring authority must describe possible alternative locations or methods for undertaking the activity.

HCC currently owns the site at 111 Cambridge Road, adjacent to the existing reservoir designation, and therefore has an interest in the land sufficient for undertaking the work on this site. However, IAWAI may not have an interest in the site sufficient for undertaking the work at the time the NoR is lodged. Although, as outlined in section 168, the level of alternatives assessment required is dependent on whether the requiring authority has an interest in the site sufficient for undertaking the work, given that a site has not yet been

selected and given the scale and potential adverse effects on the environment, a comprehensive assessment of alternatives is recommended.

3.2 Section 181 of the RMA – Alteration of designation

Section 181 of the RMA sets of the process for altering an existing designation. It states:

> *(1) A requiring authority that is responsible for a designation may at any time give notice to the territorial authority of its requirement to alter the designation.*
>
> *(2) Subject to subsection (3), sections 168 to 179 and 198AA to 198AD shall, with all necessary modifications, apply to a requirement referred to in subsection (1) as if it were a requirement for a new designation.*
>
> *(3) A territorial authority may at any time alter a designation in its district plan or a requirement in its proposed district plan if—*
>
> *(a) the alteration—*
>
> *(i) involves no more than a minor change to the effects on the environment associated with the use or proposed use of land or any water concerned; or*
>
> *(ii) involves only minor changes or adjustments to the boundaries of the designation or requirement; and*
>
> *(b) written notice of the proposed alteration has been given to every owner or occupier of the land directly affected and those owners or occupiers agree with the alteration; and*
>
> *(c) both the territorial authority and the requiring authority agree with the alteration—*
>
> *and sections 168 to 179 and 198AA to 198AD shall not apply to any such alteration.*
>
> *(4) This section shall apply, with all necessary modifications, to a requirement by a territorial authority to alter its own designation or requirement within its own district.*

A designation is the preferred method of obtaining approval under the RMA for the new Hillcrest Reservoir. Designations generally provide for longer-term and more flexible protection than a resource consent. A designation protects the land from alteration by anyone else, provides a basis for subsequent acquisition of land needed for the works, protects land uses incompatible with the purpose of the designation and provides long term land protection and certainty for large capital works and infrastructure projects.

This will involve the lodgment of a NoR for an alteration to the existing designation or a new designation, depending on which site is selected for the new reservoir.

Conducting a robust assessment of alternatives early in the planning process, engaging with communities and mana whenua and documenting the rationale for selecting a preferred option, including why alternatives were rejected is best practice.

Furthermore, as mentioned above, although HCC has interest in the land at 111 Cambridge Road sufficient for undertaking the work, given the scale and potential adverse effects on the environment, adequate consideration is required to be given to any alternative sites, routes or methods of undertaking the work. The first section of the memo is to outline the applicable **methods** and any associated assumptions and limitations to provide clarity and confirm the methods and ensure robust documentation. The second section follows, outlining the alternative site selection process which is undertaken in two stages:

1. **Identification of a long list and short list of sites**

This will involve the exclusion of unsuitable areas within the Hillcrest Zone, development of a long list of potential sites/areas, definition of critical success factors, and a qualitative assessment of a long list of options to narrow down to a short list.

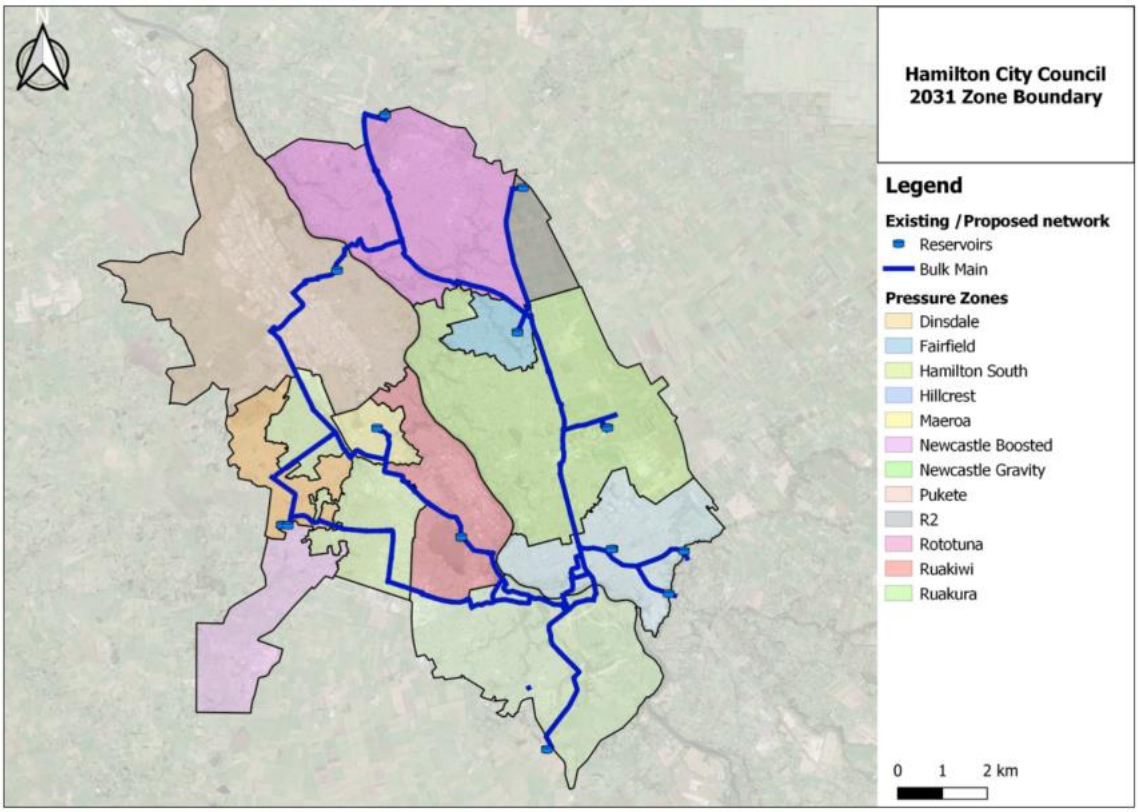
2. **Preferred option selection**

This will involve a further quantitative assessment and evaluation of shortlisted sites to identify and justify a preferred site for the Hillcrest reservoir.

4 Methodology

The site selection process is funnelled into a practical catchment size, rather than focusing on the whole of Hamilton City, through focusing the search in the Hillcrest Zone boundary as defined in the Master Plan. The Hillcrest Zone boundary is shown in the light blue at the southern end of the map in Figure 4.1.

Figure 4.1: Hillcrest Zone Boundary



Source: Hamilton Water Supply Network Master Plan, 2023

4.1 How the Hillcrest Zone boundary was established

This section explains the rationale behind the current design of the Hillcrest zone, as adopted in the Master Plan. It outlines the engineering principles, network operation & performance planning decisions, and practical constraints that informed the zoning strategy, with particular focus on how these decisions support operational efficiency, supply resilience, and long-term infrastructure viability.

The zoning strategy adopted in the Master Plan was to improve operational efficiency and supply resilience. Zoning around reservoirs was recommended to decouple the Water Treatment Plant (WTP) from daily demand fluctuations, allowing it to operate at a steady output aligned with average daily demand. This approach reduces operational strain on the high lift pump stations, which only needs to lift average demand volumes to reservoirs thereby promoting energy conservation. It enhances supply security by ensuring each zone maintains 24 hours of storage for resilience during outages or planned maintenance.

Initially, in the first version of the Master Plan[2] the Hillcrest zone was planned to be larger, with Hamilton's eastern zones—Hillcrest, Ruakura, and Rototuna—designed to be roughly equal in size. The Fairfield zone was an exception due to its existing reservoir, which constrained the zone size to match available storage. In contrast, the other eastern zones had flexibility in sizing as their reservoirs were yet to be constructed.

Between 2017 and 2019, District Metered Areas (DMAs) were implemented as part of a water loss strategy, before supply zones were created. These DMAs were designed for ease of implementation and efficient leak detection, while minimising the number of closed valves and meters required. The DMAs were planned/programmed to be implemented before the supply zones could be created, to help with water losses before supply zones were implemented. Their boundaries later informed the supply zone boundaries. When the Hillcrest Reservoir was deferred to 2045 in Master Plan 2, the feasibility of a larger Hillcrest Zone was reconsidered. To accelerate the benefits of zoning, such as improved supply security and reduced demand pressure on the treatment plant, a decision was made to expand the Ruakura Zone instead, due to the land available for reservoir construction, and elevation advantages that reduced pumping requirements.

The boundary between the Hillcrest Zone and Ruakura Zone was aligned with existing DMA boundaries to maintain consistency and simplify implementation. This decision was based on practical considerations and existing infrastructure.

4.1.1 Assumptions and limitations associated with this process

Several assumptions underpinned the process of establishing the boundaries of the Hillcrest Zone, including:

- Reservoir Siting at Ruakura: It was assessed that sufficient space exists at the Ruakura site to accommodate a future reservoir sized to meet projected population growth.
- Demand and Growth Forecasts: Zoning decisions were based on robust demand modelling and anticipated growth patterns. While future shifts due to urban development, climate change, or policy changes are possible, the adopted strategy remains flexible and resilient to such changes.
- Peak Day Demand Estimates: Infrastructure sizing was based on conservative peak day estimate of 109 MLD, compared to observed peaks closer to 90 MLD. This approach ensures capacity headroom, supporting resilience and futureproofing, rather than risking undersized infrastructure. This may be reviewed in future Master Plan updates.
- Pre-CCO Boundary Limitations: Initial zoning decisions, including the Hillcrest boundary, were made under the assumption that planning would remain within Hamilton City boundaries, which limited reservoir siting options. While the establishment of the CCO has since removed this constraint, enabling broader strategic planning, the current Hillcrest Zone boundary remains appropriate. This is due to the presence of significant natural features — the Mangaharakeke and Mangaonua Streams — that provides a logical and effective boundary between zones.

[2] The Master Plan has been through four iterations (Master Plan 1 – 4). Master Plan 1 focused on the development of a strategy addressing key issues faced by HCC to provide water services. Master Plan 2 provided details on water supply zones. Master Plan 3 refined the earlier findings based on population projections and model outputs with a focus on demand sensitivity and Master Plan 4 refined the findings of the periovious master plan based on latest population projections, while also conducting demand sensitivity analysis at a zonal level to understand the impact of plan change 12.

4.2 How was the reservoir sizing established in the Master Plan?

This section outlines the process used to determine the appropriate size for the proposed Hillcrest Reservoir. The sizing methodology was guided by established engineering standards and operational requirements, with careful consideration given to long-term resilience, growth projections, and network efficiency. The approach reflects a sound planning framework, designed to ensure that the reservoir will reliably support the Hillcrest Zone under both current and future conditions.

Reservoir sizing followed a consistent methodology as outlined below:

- General storage and zoning philosophy is to use the Waikato River as a hard boundary and keep the existing storage utilised on the appropriate side of the river.
- The general sizing guidelines that were used to determine effective storage requirements were to allow for 24 hours of peak day storage, multiplied by an uncertainty factor of 1.15 to account for growth uncertainty. The 24-hour storage volume was calculated based on the effective storage, excluding reservoir dead zones.
- The proposed operation needs to provide the ability for operations to have control of the reservoir turnover, so that 50% turnover occurs once per day while maintaining a volume equivalent to the maximum fire class required in the zone and 4 hours peak day storage, in line with the WTP requirements.

4.2.1 Assumptions

It was assumed that the Hillcrest Reservoir would serve only the Hillcrest zone, with Out-of-District areas requiring separate reservoirs. As mentioned above, locating the reservoir within the zone it supplies (in this case, Hillcrest on one hand and Southern District – Out of District on the other hand) avoids the need for long delivery pipelines, which could introduce operational risks such as breakage or service disruption. This reinforces the integrity of the current zoning and sizing strategy.

The sizing of the Hillcrest Reservoir was based on population projections to the year 2061, which represents the latest available planning horizon prior to the “City Full” scenario. This timeframe provides a robust basis for infrastructure planning, balancing long-term foresight with practical implementation.

While the expected operational life of a reservoir is approximately 100 years, it is neither feasible nor efficient to construct full capacity infrastructure from the outset. Instead, the proposed reservoir is intended to be delivered in stages. The initial stage will meet the needs of the 2061 horizon, with future expansion or complementary infrastructure to be considered as demand evolves. This staged approach allows for flexibility in response to actual growth patterns, technological advancements, and network optimisation.

4.3 Were there any other options looked at?

The following considerations that helped shape and confirm the suitability of the current approach were investigated:

- Interim servicing from Hamilton South, crossing the Waikato River, was explored as a temporary solution until 2045 but was not viable long-term, as the Hamilton South Reservoir is located on the other side of the Waikato River.
- Gravity servicing for parts of Hillcrest was also investigated. Due to elevation constraints, residential land use, and reservoir height limitations, only a small area near the river could be serviced by gravity. This option was not pursued further.

5 Site Selection

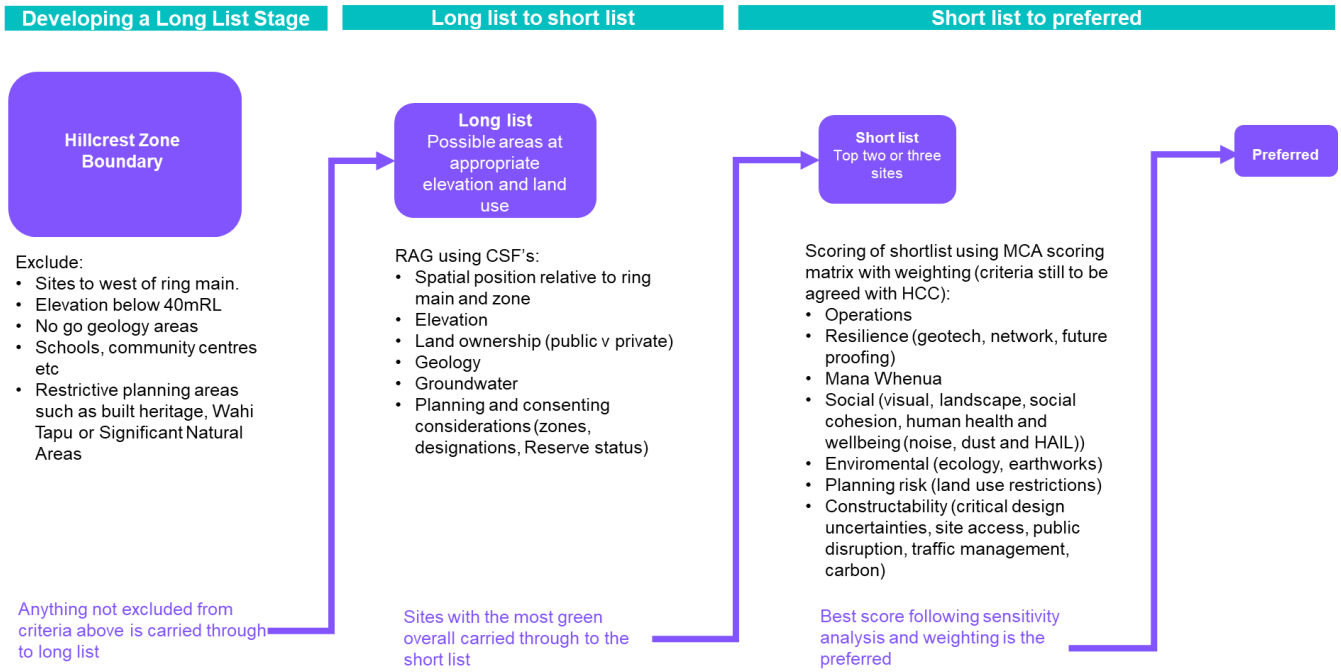
This section outlines the key assumptions and the proposed multi-stage approach to evaluate and identify a preferred reservoir site. The proposed evaluation process includes:

1. Incorporating key lessons learnt from similar HCC projects.
2. Establishing a set of assumptions for the purpose of the site selection process.
3. An initial screening to eliminate areas with fatal flaws where reservoir construction is deemed unsuitable.
4. Evaluating the remaining areas against a set of Critical Success Factors (CSFs) using a Red-Amber-Green (RAG) rating system to short list two to three top ranking sites.
5. A more detailed preferred option assessment of the resulting shortlisted sites using a Multi Criteria Analysis (MCA) scoring matrix and weightings.

The preferred site will be selected in consultation with HCC with the specific MCA framework included in this memo/ and confirmed in the associated workshop.

The process for site selection as outlined in this memo is included in the first three columns in Figure 5.1 below.

Figure 5.1: Site selection process for discussion



5.1 Lessons Learnt from Similar HCC Projects

This project has incorporated lessons learnt from previous reservoir planning and site selection projects, including the Maeroa Reservoir project.

By applying these learnings, the Hillcrest Reservoir site selection process aims to be more efficient and aligned with long-term network planning objectives.

5.2 Key Assumptions

A set of key assumptions were established, to guide the site selection process and inform the scope of this assessment. These are intended to support preliminary decision-making/evaluation and will be subject to validation and refinement during subsequent detailed design stages. These assumptions are outline below.

1. **Hillcrest Zone boundary**

No further adjustments were made to the Hillcrest Zone boundary defined in the Master Plan for the purpose of this assessment.

2. **Reservoir site search area**

The search area for identifying potential long list sites was limited to within the boundaries of the Hillcrest Zone identified in the Master Plan.

3. **Hard boundaries**

The proposed Hillcrest zone is located to the east of the Waikato River and extends to the southeastern and western limits of the Hamilton City boundary. Therefore, the Waikato River, Hamilton City boundary (to the southeast and west of the zone) and SH1 Waikato Expressway were treated as outer limits of the search area.

4. **Pumped network**

The Master Plan explored the option of servicing part of the Hillcrest Zone by gravity. However, due to the limited land elevation, it was found that only a small portion of the proposed zone could be supplied by gravity, and therefore, this was not investigated further. Only pumped network options were considered for the long list site selection.

5. **Reservoir capacity requirements**

The Master Plan has proposed an effective storage volume of 12.1ML for the Hillcrest reservoir. This has been calculated based on the 2061 projected 24-hour peak day storage demand multiplied by an uncertainty factor of 1.15 to account for growth uncertainty. For the purpose of this assessment, an additional 1.15 factor will be applied to allow for the dead storage and freeboard requirements within the reservoir. This results in a total required reservoir capacity of approximately 14ML.

The current future planning expects a decrease in the per person water demand, as household metering is implemented and people become more aware of water usage. This is backed up by international and NZ trends when metering is established. While the modelling has not been completed to determine the exact size required, around 20% reduction is expected and will be considered in detailed design stages.

6. **Reservoir footprint size and configuration**

To meet the required storage capacity of approximately 14ML (including effective volume, dead storage, and freeboard), various configurations are possible both in-terms of shape and height to width.

During the workshop held on 14th November 2026 with HCC, the HCC operations team noted that an above ground circular reservoir is more favorable than rectangular or buried alternatives. This is driven by operational health and safety, accessibility and ongoing operational and maintenance constraints. Additionally, groundwater conditions introduces further risks for below-ground construction.

A circular above ground reservoir with a 50m internal diameter and 7.5m internal height has been used to give an indication of the total area required. Modifications to the shape, height and footprint may be required for some sites.

Table 5.1: Diameter, footprint and height options for 14ML reservoir

Diameter (m)	Reservoir footprint (m2)	Height (m)
30	707	19.8
40	1257	11.1
50	**1963**	**7.5**
60	2827	5.0
70	3848	3.6
80	5027	2.8

Source: Mott MacDonald, 2025

7. **Above ground reservoir options**

Only above-ground reservoir options will be considered. Below ground reservoir options have been excluded from this assessment due to expected significantly high construction costs associated with excavation requirements, and complex temporary works.

8. **Site footprint requirements**

A site footprint of 6500m^2 (approx. 80m x 80m) was considered for the site selection assessment and is subject to refinement in future design stages. This includes space for a 50m diameter reservoir footprint, 2m allowance around the reservoir for external walls and any other external features, 3m wide ring road around the reservoir, along with space for ancillary infrastructure such as a pump house, control room, bypass network and other components. As per the discussion above smaller sites down to 5,000m^2 will also be considered on the basis that ring roads are not always required, reservoirs can be different shapes and heights and the reservoir size may reduce by approximately 20% due to universal water metering (as discussed in section 5).

5.3 Identification of a ‘long list’ of sites

The long list of sites refer to potential spatial areas located within the Hilcrest zone boundary rather than a specific list of land parcels or addresses.

To support the identification of the long list of sites, a first iteration of assessments were undertaken to eliminate/exclude areas with fatal flaws that render them unsuitable for reservoir construction. The proposed exclusions and the justification for each are outlined below.

During the Workshop held on 14th November 2025, all parties agreed with the proposed exclusions. HCC requested that residential property zones are not listed as “exclusions” from the assessment and are considered in the RAG process.

5.3.1 First Iteration of Assessment (Exclusions)

Spatial position relative to zone and ring main

Sites located to the west of the ring main, although technically within the defined search area, are deemed unsuitable due to inefficiencies in future supply alignments, particularly considering the future Tamahere and Matangi/Morrinsville reservoir alignments. Locating the Hillcrest reservoir to the west of the ring main would require additional bulk main infrastructure, increasing cost and complexity. Therefore, this area was excluded from further consideration.

Elevation

The site search area was limited to locations with elevations greater than 40mRL. Areas located below 40mRL were considered unsuitable due to limitations in hydraulic pressure and increased pumping requirements and energy use, making them less suitable for reservoir placement. These areas were therefore excluded from further consideration.

Land Ownership

Repurposing areas occupied by hospitals, schools, community centres or other facilities would have a significant impact on the community and services. Therefore, these sites are not suitable for reservoir construction and were excluded from further assessment.

Planning

Areas with built heritage (structures, buildings and associated sites), archaeological and cultural (Wahi Tapu) sites, or Significant Natural Areas (or similar) as identified in the operative district plan and any relevant proposed plan changes, sites with QEII covenants were excluded from further assessment at this stage.

Fault line

Hamilton is generally regarded as low-risk for earthquakes, but recent research has uncovered a few potentially active faults right within the city. These include the Kukutaruhe Fault and others near places like Rototuna and Hillcrest, identified through seismic and resistivity surveys along the Waikato River (Moon & de Lange, 2017). Whilst large magnitude earthquakes are not expected, the soft ground in the Hamilton Basin could amplify shaking, if any event did occur (Spinardi et al., 2017). There are also larger regional faults nearby, like the Kerepehi Fault (Persaud et al., 2016) and the Te Puninga Fault, which has the potential to produce magnitude 6.7–6.9 earthquakes every 3,000 to 11,500 years (Villamor et al., 2023) and could impact Hamilton area despite its distance.

Whilst fault investigations and implications would be necessary for the design of a reservoir in the Hillcrest area of Hamilton, especially given the presence of potentially active faults identified in recent studies, it is not a differentiator in the case of site selection. The impact of any seismic fault activity would be of the same magnitude and consequences on any site in the Hillcrest zone. It was therefore excluded from further site selection assessment.

For future design stage recommendations:

In the design stage of a reservoir project in the Hillcrest area, where recent fault mapping has identified the Te Tatua o Wairere Fault Zone as a potential concern, below are some suggestions:

- Engage with local authorities and planning tools specific to Waikato - Waikato Regional Hazards Portal; and
- Apply seismic and infrastructure standards that would be expected for a reservoir in that part of the city. Considering but not limited to NZS 1170.5:2004 – Current standard for seismic actions, the

Ministry for the Environment's guideline Planning for Development of Land on or Close to Active Faults[3].

5.4 Identification of Short-Listed Sites

5.4.1 The RAG Assessment Process

To support the selection of the short-listed sites, a set of Critical Success Factors (CSFs) were defined and agreed with HCC during the workshop held on the 14th November 2025. The CSFs are key attributes that inform the selection of the possible reservoir site. Each of these criteria were assessed as either red, amber or green to establish the short list of preferred sites. These CSFs are:

Table 5.2: Long list to short list Critical Success Factors

	Factors	Description
Critical Success Factors	Spatial position relative to ring main and zone	This criterion evaluates how close a potential reservoir site is to the existing ring main supply from the Water Treatment Plant (WTP) and to the centre of the proposed Hillcrest zone.
	Elevation	This is to assess the relative elevation of the site identified and its implication on resilience, operability, and sustainability of the reservoir.
	Land Ownership	Whether the land is publicly or privately owned and the scale of private land required through a Public Works Act 1981 (PWA) process.
	Geology	High level desktop assessment of geotechnical constraints including geology, liquefaction risks, and land instability.
	Groundwater	Desktop assessment of static groundwater levels as identified on HCC GIS maps.
	Consenting/legislative constraints and considerations	Assessment of consenting constraints and challenges for developing the sites such as district and regional plan zones and overlays, Conservation Act 1987, and Reserves Act 1977, cultural and environmental considerations, identified from a high-level desktop study.

Following the exclusion exercise identified in Section 5.3, the remaining areas were then qualitatively evaluated against the CSFs above using a Red, Amber, Green (RAG) rating system. The definitions for each rating will be tailored to each CSF but will generally follow the following structure.

- **Red** – Areas that are highly unfavourable, have significant constraints and require substantial mitigation.
- **Amber** – Areas that are moderately favourable, have moderate constraints, may require further investigation and some mitigation measures.
- **Green** – Areas that are highly favourable, have minimal constraints and requires minimal mitigation measures.

[3] Planning for Development of Land on or Close to Active Faults

The CSFs described in Table 5.2 and the associated RAG rating definitions are detailed below.

It should be noted there was no weighting applicable at this stage; all CSFs were considered of equal weight at this stage. Weighting if/as applicable will be applied at the preferred site selection stage (refer to Section 5.5). All parties agreed with this approach during the workshop held on the 14th November 2025.

Spatial position relative to ring main and zone

The ring main is the existing pipeline that supplies water from the WTP to the proposed Hilcrest Zone area. This criterion evaluates how close a potential reservoir site is to the existing ring main and to the centre of the proposed Hillcrest zone.

- Red - Sites that are located on the outer extremities of the Hillcrest Zone would require longer pipe runs and network extensions to the ring main and the supply zone, resulting in high construction costs, energy losses, and conveyance inefficiencies.
- Amber - Sites that require moderately extended trunk and bulk mains, to recognise/reflect construction requirements and cost implications.
- Green - Sites closer to the centre of the zone and the ring main as they offer optimal connectivity to the ring main and zone, minimising infrastructure costs and improving operational efficiency.

Elevation

- Red - Areas with elevations between 40mRL and 45mRL as they may be feasible but would require additional pumping infrastructure or operational adjustments.
- Amber - Sites located between 45mRL and 50mRL as they could involve moderate operational trade-offs and pumping requirements.
- Green - Sites located above 50mRL as they offer best elevation for reservoir and pump operation with long-term network efficiencies.

Land ownership

This criterion assesses the ownership status of each potential reservoir site areas and its implications for feasibility, acquisition, and community impact.

- Red - Privately owned land that is more difficult to acquire, has potentially significant legal and planning constraints, community disruption, commercial/industrial properties would be an example of this as would higher CV rateable valued properties.
- Amber - Privately owned land that have less cost implications, disruptions, and fewer legal and planning constraints.
- Green - Publicly owned land; land already designated for infrastructure use; council-owned properties will be considered most favourable for development.

Geology

This criterion uses the soil classification from the Soil Map of Hamilton City[4] and their relative engineering properties with respect to the proposed development. Refer to map attached as Appendix A for soil definitions.

- Red - Significantly poor ground conditions and prone to liquefaction, lateral spreading and settlement, and land instability, including peat and organic rich soil and gully bottom deposits.

[4] Soil Map of Hamilton City - Hamilton Libraries Heritage Collection Online

- Amber - ground condition is highly variable and has the potential for significant liquefaction induced ground damage; requires significant or complex mitigation measures, such as retaining wall, ground improvement, robust foundation systems.
- Green - Favorable ground conditions, suitable for reservoir construction, minimal ground improvement required.

Table 5.3: Local soil descriptions and liquefaction susceptibility

Geological ID	Soil Description	Liquefaction Susceptibility	Associated landforms
Kn	Kainui silt loam		low rolling hills
Rk	Rotokauri clay loam		low rolling hills
T	Te Rapa peaty loam		the plain
H	Horotiu sandy loam		the plain
H - Hb	Horotiu sandy loam / Horotiu sandy clay loam		the plain
Kk	KiriKiriroa complex		terrace scarps and gully sides
W	Waikato loamy sand, sand and sandy loam		lower river terraces
Hs	Horotiu sand		the plain
Hsg	Horotiu sand with gravels		the plain
Tk	Te Kowhai silt loam and clay loam		the plain
Hs-Hsg	Horotiu sand / Horotiu sand with gravels		the plain
Ha	Horotiu mottled sandy loam		the plain
Mh	Tamahere gravelly sand (on Horotiu soils)		the plain
Hb	Horotiu sandy clay loam		the plain
V	Tamahana soils		gully bottonms

Source: Produced from Soil map of Hamilton City, 1979

Groundwater

The RAG criteria are derived from information held on HCC GIS maps:

- Red - static groundwater level typically within 1m from the surface; has larger seasonal variation; or highly permeable soil and has potential for flooding risk.
- Amber - static groundwater level typically within 4m from the surface.
- Green - static groundwater level typically greater than 4m below the surface, with less seasonal variations.

Planning and Consenting Considerations

These criteria assess any possible consenting constraints associated with the sites including the Hamilton City Operative District Plan (District Plan) zone and any applicable plan changes, Waikato Regional Plan, National Environmental Standards, and Reserves Act. Example[5] RAG levels include:

- Red – High use open space zones, residential zones, any Reserve classified land (except local purpose reserve), Natural Open Space Zones, Community Facilities Zone.
- Amber – All other zones including, Open Space Zone – Sports and Recreation, Destination Open Space, Industrial Zone, Local Purpose Reserve classification.
- Green – Water Infrastructure Designation.

[5] This is what the likely RAG levels will look like, however when assessment is underway additional criteria could be added to each level.

Critical Risks

No additional critical risks were identified during the workshop held on 14th November 2025. All parties were in agreeance with the CSFs identified for the RAG assessment.

Other Considerations

Additional factors such as cost implications, health and safety and flooding risk are considered within the above CSFs. While these are important, they are not treated as standalone criteria, as elements of each are captured within the defined CSFs.

For example, flooding risk is inherently addressed through the elevation criteria. Sites below 40mRL are excluded, which effectively removes areas with higher flood susceptibility. Similarly, cost-related impacts are reflected in factors like proximity to the ring main, elevation, geology, and land ownership.

Determining the Short List

Based on the CSF and RAG assessment, two sites were shortlisted and submitted to HCC for review. The two shortlisted sites were determined by the highest number of green and then amber scores. The RAG assessment maps and the shortlisted sites were submitted for HCC review.

5.5 Preferred Option Selection

5.5.1 Proposed Criteria and Sub-criteria

A Multi-Criteria Assessment (MCA) framework, similar to the Maeroa project, along with incorporating key feedback/lessons learnt, are proposed for Hillcrest Reservoir preferred site selection.

This stage of the assessment will consider additional granular categories which will be agreed with HCC during a workshop on the 13th of February 2026. The initial proposed criteria include a greater focus on the operation of reservoir, resilience, Mana Whenua considerations, social impacts, environmental effects, planning and constructability considerations.

Please refer to Table 5-4 for the proposed criteria, sub criteria and weightings, as well as the corresponding project objectives addressed by each sub-criteria.

The specific matrix along with the subcategory and weighting will be confirmed with HCC during the workshop prior to application.

Table 5.4: Proposed Scoring Criteria and Weightings for Preferred Option Selection

Main Criteria	Main Criteria Weighting	Sub criteria	Sub criteria weighting	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7	Objective 8
Operations	30%	Power consumption	45%	X		X					
		Accessibility	10%	X		X					
		Meters of pipework to maintain	30%	X		X					
		Facility Operation Impacts - noise/traffic	15%	X		X					
		Sub Total	**100%**								
Resilience	20%	Network resilience (short term)	20%	X	X	X	X	X		X	X
		Future proofing	50%	X	X	X	X	X		X	X
		Geotech resilience	30%	X	X	X	X	X		X	X
		Sub Total	**100%**								
Mana Whenua	TBC	Mana whenua	TBC	X							
		Sub Total	**TBC**								
Social	15%	Short-term construction impacts	0%	X					X		
		Landscape effects	30%	X					X		
		Visual Effects	30%	X					X		
		Social Cohesion	20%	X					X		
		Human health and Wellbeing	20%	X					X		
		Land requirement	0%	X					X		
		Sub Total	**100%**								
Environmental	15%	Ecology	50%	X							
		Earthworks	25%	X							
		Pre/post development considerations	25%	X							
		Sub Total	**100%**								
Planning Risk	10%	Land use restrictions	100%	X		X					
		Sub Total	**100%**								
Constructability	10%	Construction Staging impact	15%	X			X				
		Critical design uncertainties	20%	X			X				
		Main site access	20%	X			X				
		Public Disruption	15%	X			X				
		Traffic management requirements	15%	X			X				
		GHG and Carbon Emissions	15%	X			X				
		Sub Total	**100%**								
Total Score	**100%**	**Total Score**	**Weighted Score**								

Discussion point:

Are there any comments regarding the main and sub-criteria presented above?

Weighting to be confirmed during the workshop.

The Phase 2 MCA framework consists of seven main criteria, which are further divided into sub-criteria to enable the evaluation of the shortlisted options. Prior to commencing the evaluation process, these main and sub-criteria will be developed and agreed with HCC during a workshop. Table 5.5 describes the proposed main criteria and sub-criteria used to evaluate the differentiating factors of shortlisted design options.

Table 5.5: MCA framework criteria

Assessment Criteria	Contributing Factors/Sub-criteria	Description
Operations	Power consumption	Assesses the expected operational energy demand of the shortlisted reservoir sites, based on elevation, qualitative assessment of pumping requirements, qualitative assessment of lengths of new pipe required. Lower ongoing energy use reflects a more efficient and sustainable operational profile.
	Accessibility	Evaluates how easily operators can access key infrastructure components (e.g., reservoir structure, valves, chambers, pipework, and control systems). Good accessibility reduces operational risks, maintenance time, and whole-of-life costs.
	Meters of pipework to maintain	Considers the total length of new pipework that will require maintenance and renewals. Shorter or more efficient alignments reduce long-term maintenance effort.
	Facility operation impacts – noise/traffic	Assesses ongoing operational effects on the surrounding community, including noise from pumps, vehicle movements associated with maintenance activities, and general site activity. Options causing fewer or less frequent impacts score higher.
Resilience	Network resilience	This considers long term network resilience including system performance under emergency situations such as power failure.
	Future proofing	Current design accommodates the 2061 (36year) projected demand. Availability of space for future proofing/addition of second reservoir for the 100yr projected demand at a later stage, where the proposed additional bulk and trunk main alignments can still be used.
	Geotechnical Resilience	A geotechnical desktop study is intended to identify areas of risk for a successful reservoir site (associated pipelines). This study provides a review of existing literatures and studies, borehole logs, and soil mapping data for the proposed sites. This report will summarise the geotechnical conditions of each proposed site (and along the pipeline alignment), including soil types, groundwater levels, and any potential geohazards and land instability risks associated with the development.
Mana Whenua	TBC	TBC
Social	Landscape Effects	Degree of change to existing landform and vegetation, Impact on landscape features (e.g., trees, bush, open space), Compatibility with existing land use and character, Loss or alteration of valued landscape elements
	Visual Effects	Visibility from public viewpoints (roads, parks, walkways), Visibility from private properties (especially residential), Extent of existing screening or mitigation (e.g., vegetation buffers), Change in visual amenity or quality of views
	Social cohesion (operational)	Impact on connectivity/ accessibility for the existing urban areas including access to other communities, shops, scale of effect on existing community facilities and open space, public access to open space.
	Human health and wellbeing	Will the option potentially affect any sensitive land uses nearby particularly relating to air quality and contaminated land throughout construction.
Environmental	Ecology	Impacts on the surrounding environment including the receiving waterways, trees and wildlife that may be impacted by the proposed works both long term and short term
	Earthworks	The extent of earthworks that impacts the long-term effect the form of the land and the ability to achieve earthworks neutrality.

	Pre/Post development considerations	The impact and scale of the change from how the site is currently being used versus how the site will be post-development
Planning Risk	Land use restrictions	District Plan. Regional Plan, NES, Reserves Act rules, land uses and restrictions.
Constructability	Impacts during construction staging (Phase Plan)	Considers the complexity of the build due to existing infrastructure, e.g.: the temporary works required, additional considerations such as retaining wall construction, demolition of any existing infrastructure, relocation of services, asbestos and contaminated land., impact on existing water supply during construction and commissioning.
	Critical design uncertainties	The uncertainty surrounding the design and the scale and risk of these uncertainties. Design uncertainties raised from items such as limited access for geotechnical investigations or unknown historic infrastructure.
	Main site access	Constraints to access the site during construction.
	Public disruption	Proximity and sensitivity of nearby receptors to construction activities Construction-related disruption, including vibration, noise and accessibility issues.
	Traffic management requirements	Impacts to traffic and complexity implementing traffic management to construct the reservoir and bulk/trunk mains.
	Carbon assessment	Assessment of carbon emissions to construct the new reservoir and supporting infrastructure such as the bulk and trunk mains. This will be a very high-level assessment based on key known features.

5.5.2 Key Evaluation Assumptions and Exclusions

The following exclusions and assumptions will be considered for the preferred option assessment.

- This evaluation will not include a cost assessment of the shortlisted options, and the sites will not be evaluated based on costs. Elements of cost implications are considered throughout other criteria.
- No field investigations will be undertaken as part of geotechnical resilience assessment and only a desktop assessment will be undertaken for this evaluation.
- For the purpose of this assessment, it is assumed that the bulk and trunk mains for all short-listed options would be constructed using open-cut excavation methods.

5.5.3 Scoring Strategy and Matrices

Each assessment criterion will be provided a score ranging from -3 to +3 with a higher positive score indicating a more favourable result. An MCA scoring process often includes a neutral score (in this case 0), with scores of -3 to -1 indicating negative impacts and +1 to +3 indicating benefits. The general description of the scores are shown in the table below. However, more specific descriptions and banding of scoring matrices for each sub-criteria will be considered once the criteria are confirmed and agreed with all parties.

Table 5.5: Scoring Descriptions

Significant / high negative	Moderate negative	Low negative	Neutral	Low positive	Moderate positive	Significant / high positive
-3	-2	-1	0	+1	+2	+3
Significant long term and/or extensive impacts that are unlikely to be mitigated	Longer term or more extensive impacts. Multiple short-term impacts with some mitigation risk	Short-term impacts that can be tolerated. Longer term impacts that can be mitigated	Neutral to negligible impact	Short term benefits, possibly localised	Long term, widespread benefit or multiple shorter-term benefits	Significant long-term benefits

Discussion point:

Are there any comments regarding the scoring range -3 to +3.?

Maeroa project used a range from 1-7 to allow for more differentiation in scoring as "positive" scores were not applicable for most criteria.

5.5.4 Evaluation and Sensitivity Analysis

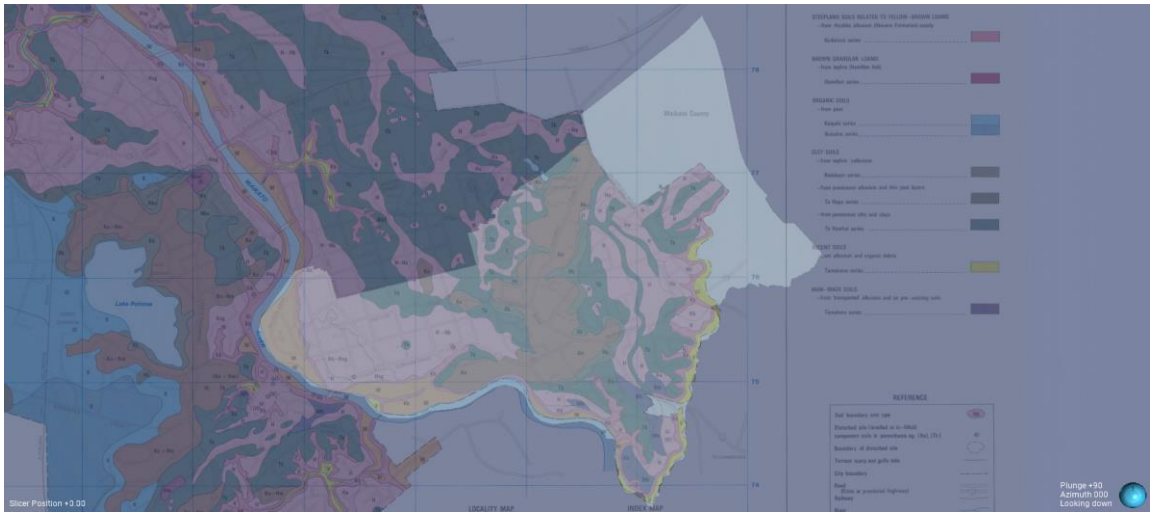
The evaluation and scoring of sites will commence once;

- The shortlisted sites are confirmed with all parties including HCC.
- The MCA scoring main criteria and sub-criteria are confirmed with all parties including HCC.
- The scoring matrix and criteria weightings are confirmed with all parties including HCC.

Once the evaluation is complete, a sensitivity analysis will be conducted to test the robustness of the process and to assess how changes to main and sub-criteria weightings could influence the final outcome of the preferred design option.

Appendix A – Geotechnical Maps

Indicative – not final



Source: Obtained from Soil map of Hamilton City 1979

Soil Map of Hamilton City - Hamilton Libraries Heritage Collection Online

Appendix B – Hillcrest Reservoir Site Selection Scoring Matrix

MOTT MACDONALD

Hillcrest Reservoir Site Selection Scoring Matrix

Project:	Hillcrest Reservoir – short list to preferred site selection scoring matrix		
Our reference:	705100882 - 004		
Prepared by:	Rebecca Ellery	**Date**:	28 April 2026
Checked by:	Blair Telfer	**Approved by:**	Kat Jackson
Subject:	Hillcrest Reservoir Site Selection – MCA framework and scoring matrix revised		

1.1.1 Document Purpose

As outlined in the Hillcrest Zone Implementation Bulk Infrastructure – Early Works memorandum prepared by Mott MacDonald and dated 11 February 2026 and discussed at the workshop held on 13 February 2026, the evaluation and scoring of the short list of sites will commence once:

- The shortlisted sites are confirmed with all parties, including HCC;
- The MCA scoring main criteria and sub-criteria are confirmed with all parties; and
- The scoring matrix and criteria weightings are confirmed with all parties.

The purpose of this memo is to get agreement from HCC on:

- Criteria and sub-criteria;
- Sub-criteria descriptors;
- Sub-criteria scoring matrix;
- Criteria and sub-criteria allocated weightings; and
- Who will do initial scoring for each sub-criteria.

Once these have been approved, this document can be shared with those providing scoring to guide the scoring process to ensure a robust and transparent process.

The proposed next steps to finalising the preferred site option are as follows:

Step 1 – Confirm and agree on scoring criteria, sub-criteria and weighting between all parties.

Step 2 – Draft scoring by the assigned technical leads/ personnel identified in Table 1.2.

Step 3 – Moderation session to discuss and revise draft scores as required.

Step 4 – Finalise scoring and, if no clear preferred site is identified, plan the next steps for further assessment.

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Table 1.1 MCA Framework Criteria

Assessment Criteria	Contributing Factors/ Sub-criteria	Description
Operations	Pump and pump station complexity or scale	Quantitative assessment of pump size to meet output head required. Pump size accounts for both power/energy consumption as well as maintenance costs – larger pump results in higher costs.
	Accessibility including access to infrastructure for maintenance (sludge removal etc)	Evaluates how easily operators can access key infrastructure components (e.g., reservoir structure, valves, chambers, pipework, and control systems). Good accessibility reduces operational risks, maintenance time, and whole-of-life costs. Includes access for maintenance and inspections of reservoirs to clean out sludge.
	Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	Considers the total length of new pipework that will require maintenance and renewals. Shorter or more efficient alignments reduce long-term maintenance effort.
	Facility operation impacts	Assesses ongoing operational effects on the surrounding community, including noise from pumps, vehicle movements associated with maintenance activities, and general site activity. Options causing fewer or less frequent impacts score higher.
Resilience	Network resilience	This considers long term network resilience including system performance under emergency situations such as pump power failure.
	Future proofing	Current design accommodates the 2061 (36 year) projected demand. Availability of space for future proofing/addition of a potential second reservoir at a later stage, where the proposed additional bulk and trunk main alignments can still be used.
	Geotechnical Resilience	A geotechnical desktop study is intended to identify areas of risk for a successful reservoir site (associated pipelines). This study provides a review of existing literatures and studies, borehole logs, and soil mapping data for the proposed sites. This report will summarise the geotechnical conditions of each proposed site (and along the pipeline alignment), including soil types and any potential geohazards and land instability risks associated with the development.
Social (long term)	Landscape Effects	Degree of change to existing landform and vegetation, impact on landscape features (e.g., trees, bush, open space), compatibility with existing land use and character, loss or alteration of valued landscape elements.
	Visual Effects	Visibility from public viewpoints (roads, parks, walkways), visibility from private properties (especially residential), extent of existing screening or mitigation (e.g., vegetation buffers), change in visual amenity or quality of views.
	Social cohesion (operational)	Impact on connectivity/ accessibility for the existing urban areas including access to other communities, shops, scale of effect on existing community facilities and open space, public access to open space.
	Human health and wellbeing	Potential impacts on sensitive land uses nearby, particularly relating to noise, traffic and amenity
Environmental (RMA/ legislative)	Ecology	Impacts on the surrounding environment including the receiving waterways, trees and wildlife that may be impacted by the proposed works both long term and short term.
	Earthworks	The extent of earthworks that impacts the form of the land and the ability to achieve earthworks neutrality.
	Pre/Post development considerations	The impact and scale of the change from how the site is currently being used versus how the site will be post-development.

Planning Risk	Land use restrictions	District Plan, Regional Plan, National Environmental Standards, Reserves Act rules, land uses and restrictions.
Constructability	Impacts during construction staging (Phase Plan)	The complexity of the build due to existing infrastructure, e.g. the temporary works required, additional considerations such as retaining wall construction, demolition of any existing infrastructure, relocation of services, asbestos and contaminated land., impact on existing water supply during construction and commissioning.
	Critical design uncertainties	The uncertainty surrounding the design and the scale and risk of these uncertainties. Design uncertainties raised from items such as limited access for geotechnical investigations or unknown historic infrastructure.
	Main site access	Disruption caused by accessing the site during construction such as vehicle movements to and from site per day.
	Public disruption	Proximity and sensitivity of nearby receptors to construction activities. Construction-related disruption, including vibration, noise and accessibility issues.
	Traffic management requirements	Impacts to traffic and complexity implementing traffic management to construct the reservoir and bulk/trunk mains including the potential vehicle counts affected based on road type/ usage.
	Carbon assessment	Qualitative assessment of carbon emissions to construct the bulk and trunk pipework based on the length of pipes required.

1.1.2 Scoring Strategy and Matrices

Each assessment criterion will be provided a score ranging from 1 to 7 with a higher positive score indicating a more favourable result. An MCA scoring process often includes a neutral score of 4, with scores 1 – 3 indicating negative impacts and 5 – 7 indicating benefits. However, as established in other projects of a similar nature, net positive effects were not applicable in many cases and scores above neutral were not appropriate and therefore the range of scores become restricted, resulting in very little differentiation. Each criteria for this assessment has a bespoke scoring matrix for 1 - 7. This process enables transparent scoring and justification. Some of the categories have a positive effects scoring band where appropriate and some do not.

Mana Whenua scoring will follow a similarly robust process, in parallel, but outside of this MCA process. Both results shall be used to inform and align recommended site decision making.

Table 1.2 Scoring Matrix Descriptions

Assessment Criteria		Contributing Factors/Sub-criteria	Scoring Matrix	Assigned Scoring Team
Operations **33%**	45%	Pump and pump station complexity or scale	Score 6 - 7 Pump size less than 100 kW Score 3 - 5 Pump size between 100 kW to 200 kW Score 1 - 2 Pump size greater than 200 kW	Mott Macdonald - Engineering
	10%	Accessibility, including access to infrastructure for maintenance (sludge removal etc.)	Score 6 - 7 Limited accessibility constraints. Score 3 - 5 Moderate accessibility constraints. Score 1 - 2 High to significant accessibility constraints.	HCC – Operations HCC – Owner
	30%	Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	Score 6 - 7 Less than 1km pipeline construction length. Score 3 - 5 Between 1km and 2km of pipeline construction length. Score 1 - 2 Greater than 2km.	Mott Macdonald - Engineering
	15%	Facility operation impacts	Score 6 - 7 No or low operational impact. Located away from residential properties. Score 3 - 5 Moderate to high operational impact, but manageable with mitigation. Score 1 - 2 High to significant operational impact resulting in public opposition.	Mott Macdonald – Planning HCC – Operations HCC – Maintenance HCC – Planning HCC – Project Manager HCC – Owner
Resilience **23%**	20%	Network resilience (short term)	Score 6 - 7 Negligible to low disruption to existing network. Loss of storage negligible during construction and transition period. Score 3 - 5 Short term/ localised impacts. Loss of water storage for the entire duration of construction period. Mitigation possible but planning required to provide the required storage during construction. Score 1 - 2 Significant and/or long-term impact to existing network. Mitigation options are limited.	Mott Macdonald - Engineering
	50%	Future proofing	Score 6 - 7 Sufficient space available for a second reservoir or expansion to meet demands beyond 2061 projections. Requires acquisition of more public/green spaces. Scores 3 - 5 Site constrained by space and zoning. Requires acquisition of more residential/private properties. Score 1 - 2 No viable space or planning provision for future expansion.	Mott Macdonald – Engineering HCC – Operations HCC – Maintenance HCC – Planning HCC – Project Manager HCC – Owner
	30%	Geotechnical Resilience	Score 6 - 7 Atop/crest of rolling hill with gentle slope gradient, very shallow instability features – no large-scale historical slips or evidence of other shallow rotational features during site walkover or from historical aerial photos. Score 3 - 5 Low-lying landform, with minor undulations and hummocky ground, requires detailed assessments.	Mott Macdonald - Engineering

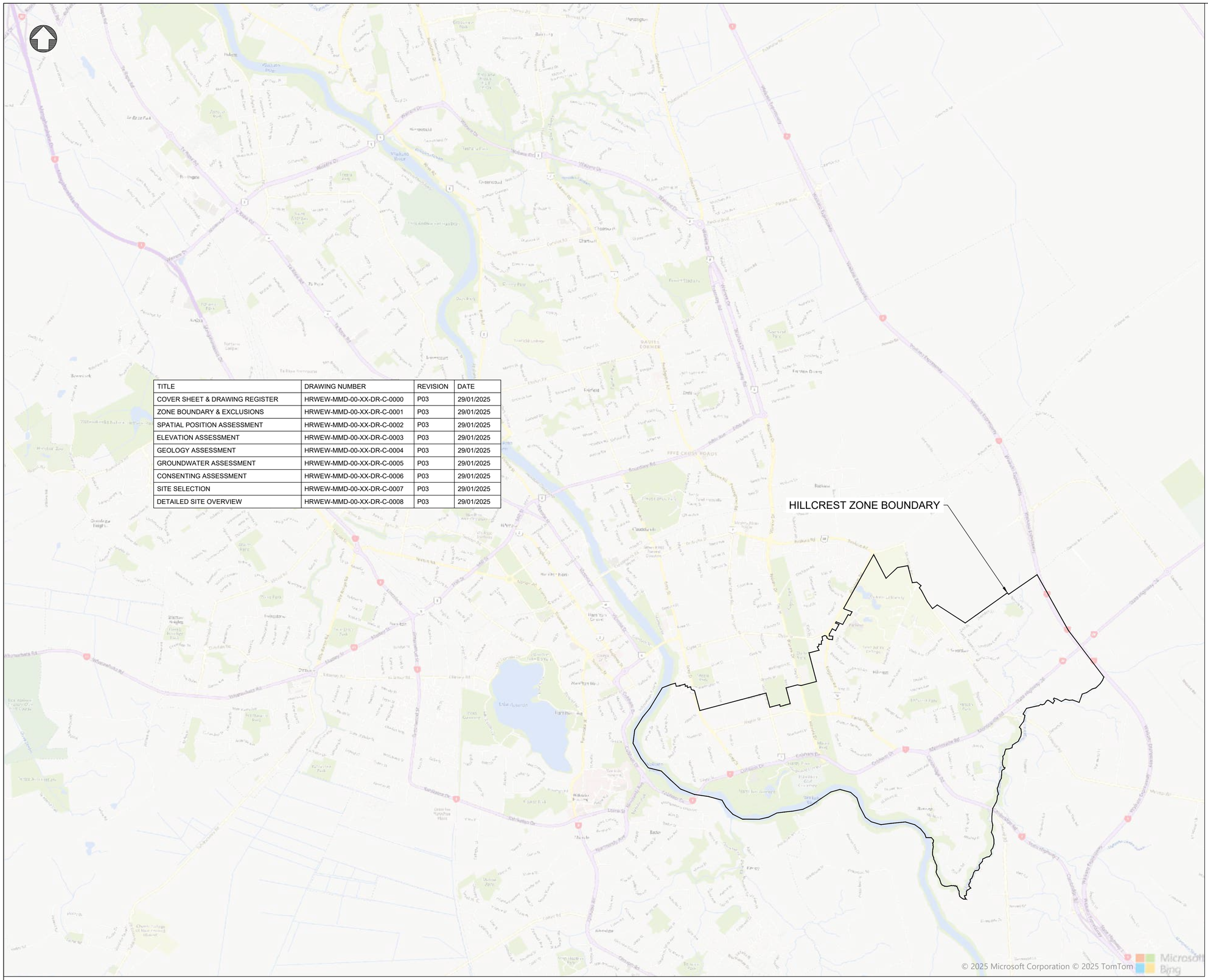
			Score 1 - 2 Identified or obvious geohazard, including but not limited to gully head and scarp, erosional features and surface tension cracks, requires engineering intervention such as ground improvement.	
Social **14%**	20%	Landscape Effects	Score 6 - 7 Low impact on landform and vegetation with opportunities for mitigation (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on landform and vegetation with possible opportunities for mitigation. Score 1 - 2 Very high to significant impact on landform and vegetation and limited opportunities for mitigation.	Boffa Miskel
	40%	Visual Effects	Score 6 - 7 Low impact on visual amenity with opportunities for screening (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on visual amenity with possible opportunities for screening. Score 1 - 2 Very high to significant impact on visual amenity and limited opportunities for screening.	Boffa Miskel
	20%	Social cohesion (operational)	Score 6 - 7 No to low impact on social cohesion including connectivity and access to open space. Score 3 - 5 Moderate to high impact on social cohesion including connectivity and access to open space. Score 1 - 2 Significant impact on social cohesion including connectivity and access to open space.	Mott Macdonald – Planning HCC – Planning
	20%	Human health and wellbeing	Score 6 - 7 Nil to low impact on health and well-being. Score 3 - 5 Moderate to high impact on health and wellbeing. Score 1 - 2 Significant impact on health and wellbeing.	Mott MacDonald – Planning HCC – Planning
Environmental **14%**	50%	Ecology	Score 6 - 7 No trees cleared or any at risk species removal avoided or relocated (6) and opportunities for ecological enhancement and net positive effects (7). Score 3 - 5 Indigenous or at-risk species present with moderate to minor potential habitat or tree clearance resulting in moderate ecological effects. Score 1 - 2 Indigenous or at-risk species present with significant to large potential habitat or tree clearance resulting in significant ecological effects.	Mott MacDonald – Planning HCC – Planning
	25%	Earthworks	Score 7 - No terrain or topography issues, requiring negligible earthworks or no cut to waste volumes. Less than 1000m3. Score 5 - 6 - Some terrain or topography issues requiring some earthworks Some cut to waste volumes 1000m3 to 2000m3. Score 3 - 4 - Moderate terrain or topography issues, requiring moderate earthworks. moderate cut to waste volumes. 2000m^3 to 3000m^3. Score 1 - 2 - Significant terrain or topography issues, requiring significant earthworks, retaining structures resulting in high cut to waste volumes. Over 3000m^3.	Mott MacDonald - Engineering
	25%	Pre/Post development considerations	Score 6 - 7 - Negligible to low pre/post development changes to site. Score 3 - 5 - Low to moderate pre/post development changes to site. Score 1 - 2 - Moderate to significant pre/post development changes to site.	Mott MacDonald – Planning HCC – Planning
Planning Risk **8%**	100%	Land use restrictions	Score 6 - 7 - Negligible to low land use restrictions impacting consentability. Score 3 - 5 - Moderate land use restrictions impacting consentability. Score 1 - 2 - Significant to major land use restrictions impacting consentability.	Mott MacDonald – Planning HCC – Planning

Constructability (short term) **8%**	10%	Impacts during construction staging (Phase Plan)	Score 6 - 7 - Construction staging straightforward, site offers higher flexibility around construction staging. Score 3 - 5 - Low to moderate complexity in construction staging. Score 1 - 2 - Moderate to very high complexity in construction staging due to existing infrastructure, level of temporary works required etc.	Mott MacDonald – Engineering HCC – Operations HCC – Maintenance HCC – Planning HCC – Project Manager HCC – Owner
	20%	Critical design uncertainties	Score 6 - 7 - No to low design uncertainties. Score 3 - 5 - Low to moderate design uncertainties, site less constrained to carry out further investigations. Score 1 - 2 - High design uncertainties, site constrained to carry out initial investigations.	Mott MacDonald – Engineering HCC – Operations HCC – Maintenance HCC – Planning HCC – Project Manager HCC – Owner
	20%	Main site access	Score 6 - 7 - Site easily accessible with minimal disruption, located away from busy intersections or residential zones. Score 3 - 5 - Site access causes a moderate level of disruption due to surrounding land use/residential area. Score 1 - 2 - Site access caused high to significant level of disruption, located in dense residential area or near busy intersections.	Mott MacDonald - Engineering HCC – Operations HCC – Maintenance HCC – Planning HCC – Project Manager HCC – Owner
	15%	Public disruption	Score 6 - 7 - Low short-term impact. Site well-separated from residential properties and businesses and other sensitive receptors. Score 3 - 5 - Moderate short-term impact. Some disruption due to proximity of residential properties and businesses and other sensitive receptors. Score 1 - 2 – High to significant short-term impact due to dense residential surroundings and/or type of construction activity being more complex.	Mott MacDonald – Planning HCC – Planning
	20%	Traffic management requirements	Score 6 - 7 - Traffic management requirements are simple and/or localised. Score 3 - 5 - Traffic management requirements are moderately complex and of moderate scale. Score 1 - 2 - Traffic management requirements are highly complex and widespread.	Mott MacDonald - Engineering Mott MacDonald – Planning HCC – Planning HCC – Owner

	15%	GHG and carbon emissions based on length of new trunk and bulk main lengths.	Score 6 - 7 - Less than 1km pipeline construction length. Score 3 - 5 - Between 1km and 2km of pipeline construction length. Score 1 - 2 – Greater than 2km.	Mott MacDonald - Engineering

Appendix C – Hillcrest Reservoir & Watermain Long List to Short List Preliminary Drawing Set

TITLE	DRAWING NUMBER	REVISION	DATE
COVER SHEET & DRAWING REGISTER	HRWEW-MMD-00-XX-DR-C-0000	P03	29/01/2025
ZONE BOUNDARY & EXCLUSIONS	HRWEW-MMD-00-XX-DR-C-0001	P03	29/01/2025
SPATIAL POSITION ASSESSMENT	HRWEW-MMD-00-XX-DR-C-0002	P03	29/01/2025
ELEVATION ASSESSMENT	HRWEW-MMD-00-XX-DR-C-0003	P03	29/01/2025
GEOLOGY ASSESSMENT	HRWEW-MMD-00-XX-DR-C-0004	P03	29/01/2025
GROUNDWATER ASSESSMENT	HRWEW-MMD-00-XX-DR-C-0005	P03	29/01/2025
CONSENTING ASSESSMENT	HRWEW-MMD-00-XX-DR-C-0006	P03	29/01/2025
SITE SELECTION	HRWEW-MMD-00-XX-DR-C-0007	P03	29/01/2025
DETAILED SITE OVERVIEW	HRWEW-MMD-00-XX-DR-C-0008	P03	29/01/2025



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Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P03	29/01/2026	SM	CLIENT COMMENTS ADDRESSED	BT	KJ
P02	16/01/2026	SM	CLIENT COMMENTS ADDRESSED	BT	RE
P01	16/12/2025	SM	RAG ASSESSMENT FOR CLIENT REVIEW	BT	KJ

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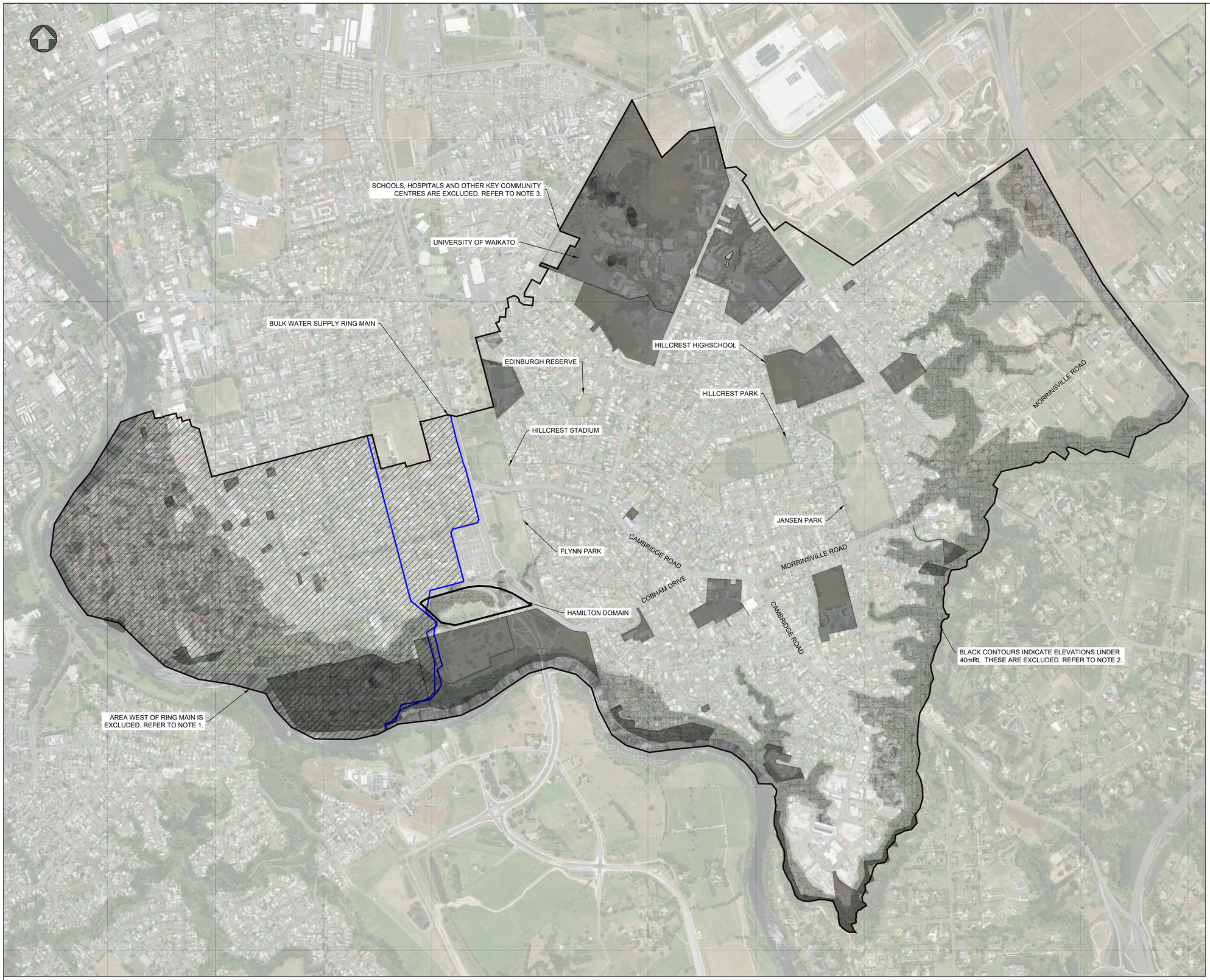
Title
HILLCREST RESERVOIR & WATERMAIN
LONG LIST TO SHORT LIST
COVER SHEET & DRAWING REGISTER

Designed	S.MATEPARAE	SM	Eng check	B.TELFER	BT
Drawn	S.MATEPARAE	SM	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

MMD Project Number	Scale at A1	Security
705100882	1:20000	STD

Suitability Description	Suit. Code
NOT FOR CONSTRUCTION	S1

Drawing Number	Revision
HRWEW-MMD-00-XX-DR-C-0000	P03



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Notes

EXCLUSIONS ARE BASED ON CRITERIA DESCRIBED IN SECTION 4.3.1 OF THE SITE SELECTION METHODOLOGY MEMO.

1. SITES LOCATED TO THE WEST OF THE RING MAIN ARE DEEMED UNSUITABLE DUE TO INEFFICIENCIES IN FUTURE SUPPLY ALIGNMENTS AND ARE EXCLUDED FROM FURTHER CONSIDERATION.
2. AREAS LOCATED BELOW 40MRL ARE CONSIDERED UNSUITABLE DUE TO LIMITATIONS IN HYDRAULIC PRESSURE. THESE AREAS ARE THEREFORE EXCLUDED FROM FURTHER CONSIDERATION.
3. REPURPOSING AREAS OCCUPIED BY HOSPITALS, SCHOOLS, COMMUNITY CENTRES OR OTHER FACILITIES ARE EXCLUDED FROM FURTHER ASSESSMENT.
4. AREAS WITH BUILT HERITAGE , ARCHAEOLOGICAL AND CULTURAL SITES, OR SIGNIFICANT NATURAL AREAS (OR SIMILAR) AS IDENTIFIED IN THE OPERATIVE DISTRICT PLAN AND ANY RELEVANT PROPOSED PLAN CHANGES, SITES WITH QEII COVENANTS WILL BE EXCLUDED FROM FURTHER ASSESSMENT.

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P03	29/01/2026	SM	CLIENT COMMENTS ADDRESSED	BT	KJ
P02	16/01/2026	SM	CLIENT COMMENTS ADDRESSED	BT	RE
P01	16/12/2025	SM	RAG ASSESSMENT FOR CLIENT REVIEW	BT	KJ

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Te kaunihera o Kirikiriroa

Title

HILLCREST RESERVOIR & WATERMAIN
LONG LIST TO SHORT LIST
ZONE BOUNDARY & EXCLUSIONS
SHEET 1 OF 8

Designed	S.MATEPARAE	SM	Eng check	B.TELFER	BT
Drawn	S.MATEPARAE	SM	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NT	Approved	K.JACKSON	KJ

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Notes

CATEGORIES ARE BASED ON CRITERIA DESCRIBED IN SECTION 4.4.1 OF THE SITE SELECTION METHODOLOGY MEMO.

1. RED - SITES THAT ARE LOCATED ON THE OUTER EXTREMITIES OF THE HILLCREST ZONE WOULD REQUIRE LONGER PIPE RUNS AND NETWORK EXTENSIONS TO THE RING MAIN AND THE SUPPLY ZONE, RESULTING IN HIGH CONSTRUCTION COSTS, ENERGY LOSSES, AND CONVEYANCE INEFFICIENCIES.
2. AMBER - SITES THAT REQUIRE MODERATELY EXTENDED TRUNK AND BULK MAINS, TO RECOGNISE/REFLECT CONSTRUCTION REQUIREMENTS AND COST IMPLICATIONS.
3. GREEN - SITES CLOSER TO THE CENTRE OF THE ZONE AND THE RING MAIN AS THEY OFFER OPTIMAL CONNECTIVITY TO THE RING MAIN AND ZONE, MINIMISING INFRASTRUCTURE COSTS AND IMPROVING OPERATIONAL EFFICIENCY.

Key to symbols

- RED CATEGORY
- AMBER CATEGORY
- GREEN CATEGORY

Reference drawings

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P01	16/12/2025	SM	RAG ASSESSMENT FOR CLIENT REVIEW	BT	KJ

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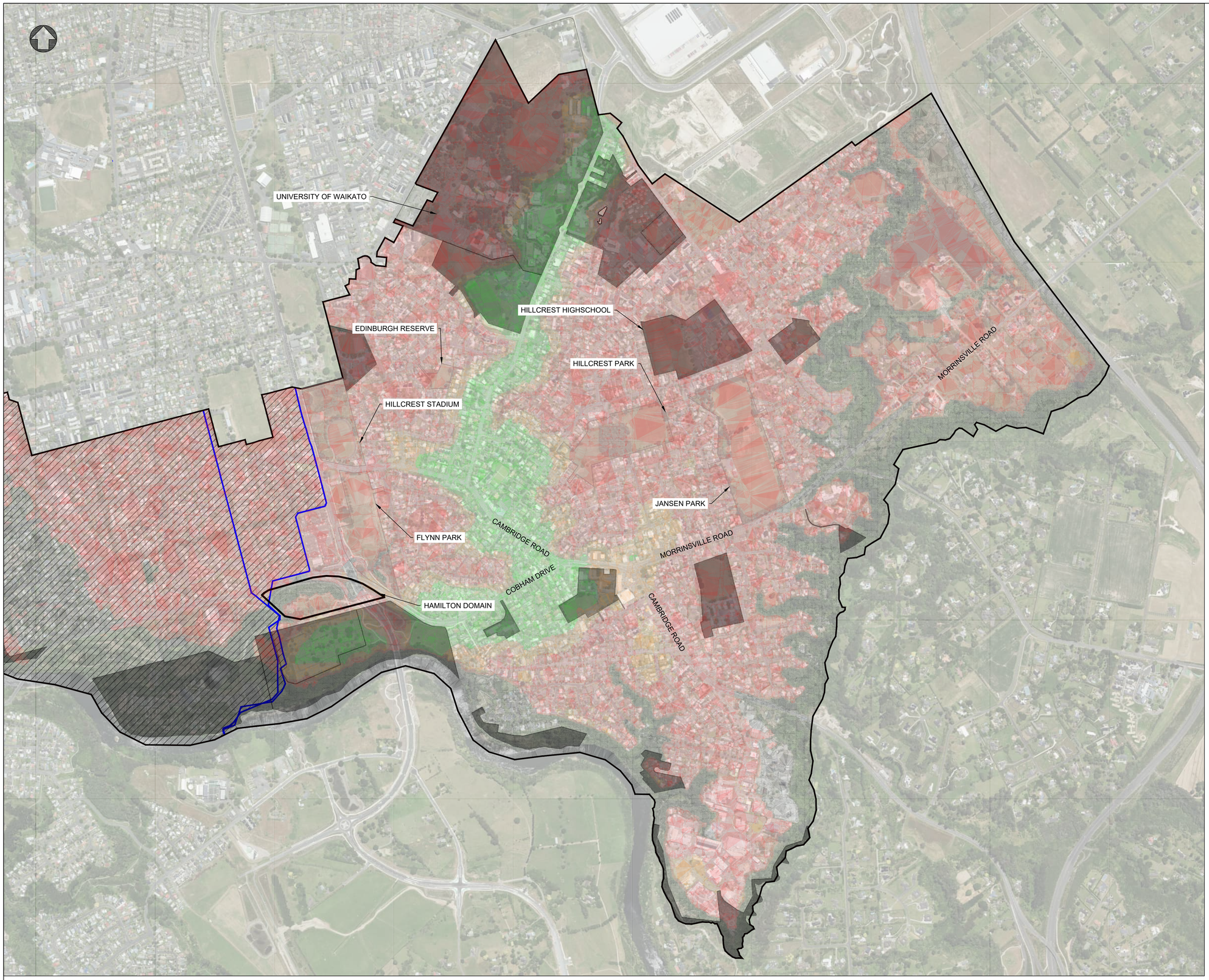
HILLCREST RESERVOIR & WATERMAIN LONG LIST TO SHORT LIST SPATIAL POSITION ASSESSMENT SHEET 2 OF 8

Designed	S.MATEPARAE	SM	Eng check	B.TELFER	BT
Drawn	S.MATEPARAE	SM	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

MMD Project Number	Scale at A1	Security
705100882	1:7500	STD

Suitability Description	Suit. Code
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Drawing Number	Revision
HRWEW-MMD-00-XX-DR-C-0002	P02



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Notes

ELEVATION DATA TAKEN FROM LINZ LIDAR DEM

CATEGORIES ARE BASED ON CRITERIA DESCRIBED IN SECTION 4.4.1 OF THE SITE SELECTION METHODOLOGY MEMO.

1. RED - AREAS WITH ELEVATIONS BETWEEN 40mRL AND 45mRL AS THEY MAY BE FEASIBLE BUT WOULD REQUIRE ADDITIONAL PUMPING INFRASTRUCTURE OR OPERATIONAL ADJUSTMENTS.
2. AMBER - SITES LOCATED BETWEEN 45mRL AND 50mRL AS THEY COULD INVOLVE MODERATE OPERATIONAL TRADE-OFFS AND PUMPING REQUIREMENTS.
3. GREEN - SITES LOCATED ABOVE 50mRL AS THEY OFFER BEST ELEVATION FOR RESERVOIR AND PUMP OPERATION WITH LONG-TERM NETWORK EFFICIENCIES.

Key to symbols

RED CATEGORY (40 - 45 mRL)
AMBER CATEGORY (45 - 50 mRL)
GREEN CATEGORY (> 50mRL)

Reference drawings

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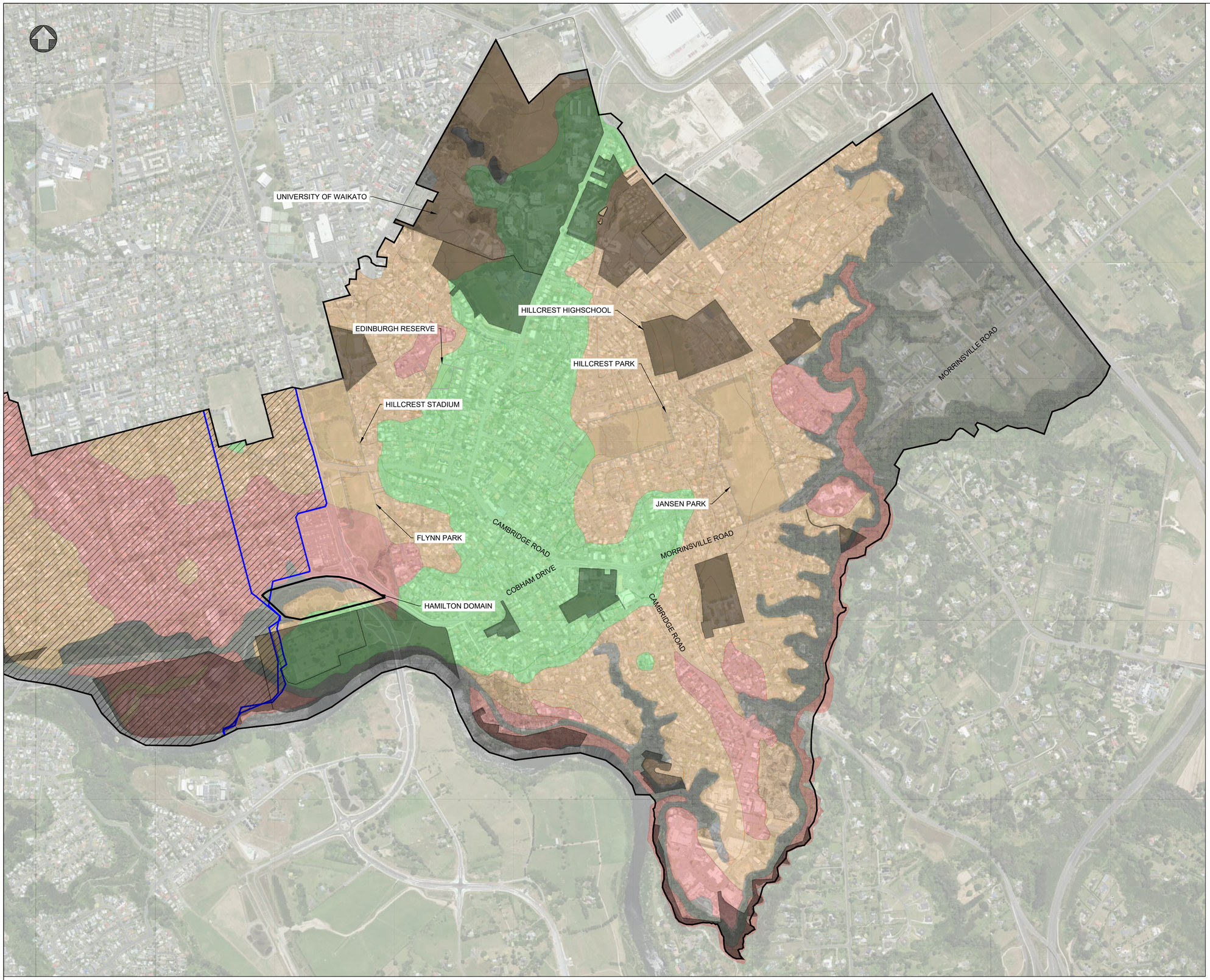
HILLCREST RESERVOIR & WATERMAIN
LONG LIST TO SHORT LIST
ELEVATION ASSESSMENT
SHEET 3 OF 8

Designed	S.MATEPARAE	SM	Eng check	B.TELFER	BT
Drawn	S.MATEPARAE	SM	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

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Drawing Number	Revision
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Notes

CATEGORIES ARE BASED ON CRITERIA DESCRIBED IN SECTION 4.4.1 OF THE SITE SELECTION METHODOLOGY MEMO.

1. RED - SIGNIFICANTLY POOR GROUND CONDITIONS AND PRONE TO LIQUEFACTION, LATERAL SPREADING AND SETTLEMENT, AND LAND INSTABILITY, INCLUDING PEAT AND ORGANIC RICH SOIL AND GULLY BOTTOM DEPOSITS.
2. AMBER - GROUND CONDITION IS HIGHLY VARIABLE AND HAS THE POTENTIAL FOR SIGNIFICANT LIQUEFACTION INDUCED GROUND DAMAGE; REQUIRES SIGNIFICANT OR COMPLEX MITIGATION MEASURES, SUCH AS RETAINING WALL, GROUND IMPROVEMENT, ROBUST FOUNDATION SYSTEMS.
3. GREEN - FAVORABLE GROUND CONDITIONS, SUITABLE FOR RESERVOIR CONSTRUCTION, MINIMAL GROUND IMPROVEMENT REQUIRED.

Key to symbols

- RED CATEGORY
- AMBER CATEGORY
- GREEN CATEGORY
- UNCATEGORISED

Reference drawings

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P01	16/12/2025	SM	RAG ASSESSMENT FOR CLIENT REVIEW	BT	KJ

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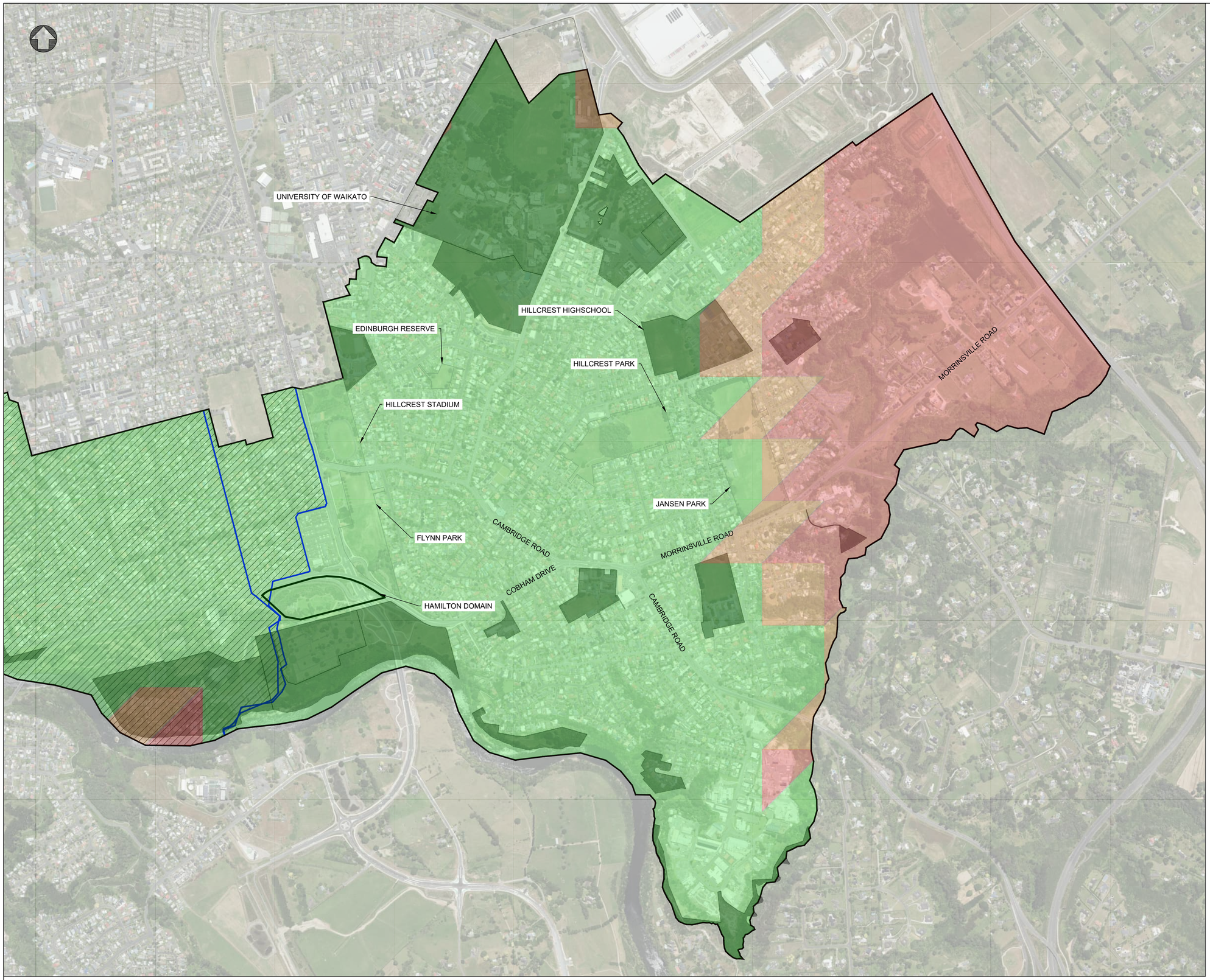
HILLCREST RESERVOIR & WATERMAIN
LONG LIST TO SHORT LIST
GEOLOGY ASSESSMENT
SHEET 4 OF 8

Designed	S.MATEPARAE	SM	Eng check	B.TELFER	BT
Drawn	S.MATEPARAE	SM	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

MMD Project Number	Scale at A1	Security
705100882	1:7500	STD

Suitability Description	Suit. Code
NOT FOR CONSTRUCTION	S1

Drawing Number	Revision
HRWEW-MMD-00-XX-DR-C-0004	P03



PLAN
1:7500

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Notes

GROUNDWATER DATA TAKEN FROM GNS. DATASET RESOLUTION IS 250m.

CATEGORIES ARE BASED ON CRITERIA DESCRIBED IN SECTION 4.4.1 OF THE SITE SELECTION METHODOLOGY MEMO.

1. RED - STATIC GROUNDWATER LEVEL TYPICALLY WITHIN 1m FROM THE SURFACE; HAS LARGER SEASONAL VARIATION; OR HIGHLY PERMEABLE SOIL AND HAS POTENTIAL FOR FLOODING RISK.
2. AMBER - STATIC GROUNDWATER LEVEL TYPICALLY WITHIN 4m FROM THE SURFACE.
3. GREEN - STATIC GROUNDWATER LEVEL TYPICALLY GREATER THAN 4m BELOW THE SURFACE, WITH LESS SEASONAL VARIATIONS.

Key to symbols

- RED CATEGORY
- AMBER CATEGORY
- GREEN CATEGORY

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P03	29/01/2026	SM	CLIENT COMMENTS ADDRESSED	BT	KJ
P02	16/01/2026	SM	CLIENT COMMENTS ADDRESSED	BT	RE
P01	16/12/2025	SM	RAG ASSESSMENT FOR CLIENT REVIEW	BT	KJ

Status Stamp

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Title

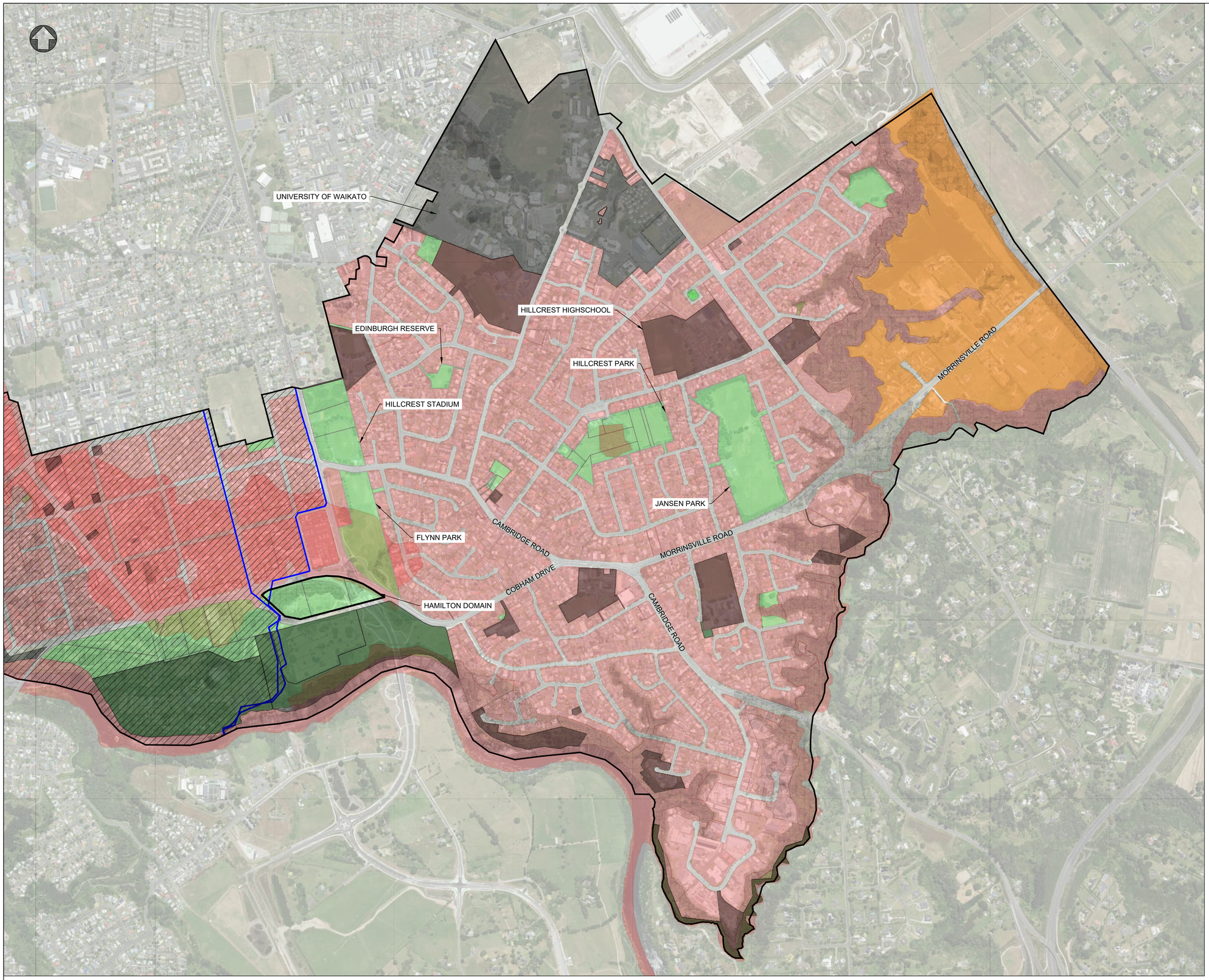
HILLCREST RESERVOIR & WATERMAIN
LONG LIST TO SHORT LIST
GROUNDWATER ASSESSMENT
SHEET 5 OF 8

Designed	S.MATEPARAE	SM	Eng check	B.TELFER	BT
Drawn	S.MATEPARAE	SM	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

MMD Project Number	Scale at A1	Security
705100882	1:7500	STD

Suitability Description	Suit. Code
NOT FOR CONSTRUCTION	S1

Drawing Number	Revision
HRWEW-MMD-00-XX-DR-C-0005	P03



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Notes

CATEGORIES ARE BASED ON CRITERIA DESCRIBED IN SECTION 4.4.1 OF THE SITE SELECTION METHODOLOGY MEMO.

1. RED - AREAS ZONED FOR RESIDENTIAL, BUSINESS AND INDUSTRY, OR DESIGNATED TO SERVICES SUCH AS HEALTH, POLICE, ROAD AND EDUCATION.HERITAGE FEATURES AND SIGNIFICANT NATURAL AREAS. HISTORIC, SCENIC, NATURE AND SCIENTIFIC RESERVES.
2. AMBER - OPEN SPACE ZONES WITH POTENTIAL ENVIRONMENTAL OR HERITAGE RESTRICTIONS. UTILITY DESIGNATIONS..
3. GREEN - AREAS ZONED OPEN SPACE OR DESIGNATIONS FOR HAMILTON CITY COUNCIL WATER INFRASTRUCTURE. LOCAL PURPOSE RESERVES.

Key to symbols

- RED CATEGORY
- AMBER CATEGORY
- GREEN CATEGORY

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P03	29/01/2026	SM	CLIENT COMMENTS ADDRESSED	BT	KJ
P02	16/01/2026	SM	CLIENT COMMENTS ADDRESSED	BT	RE
P01	16/12/2025	SM	RAG ASSESSMENT FOR CLIENT REVIEW	BT	KJ

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Title

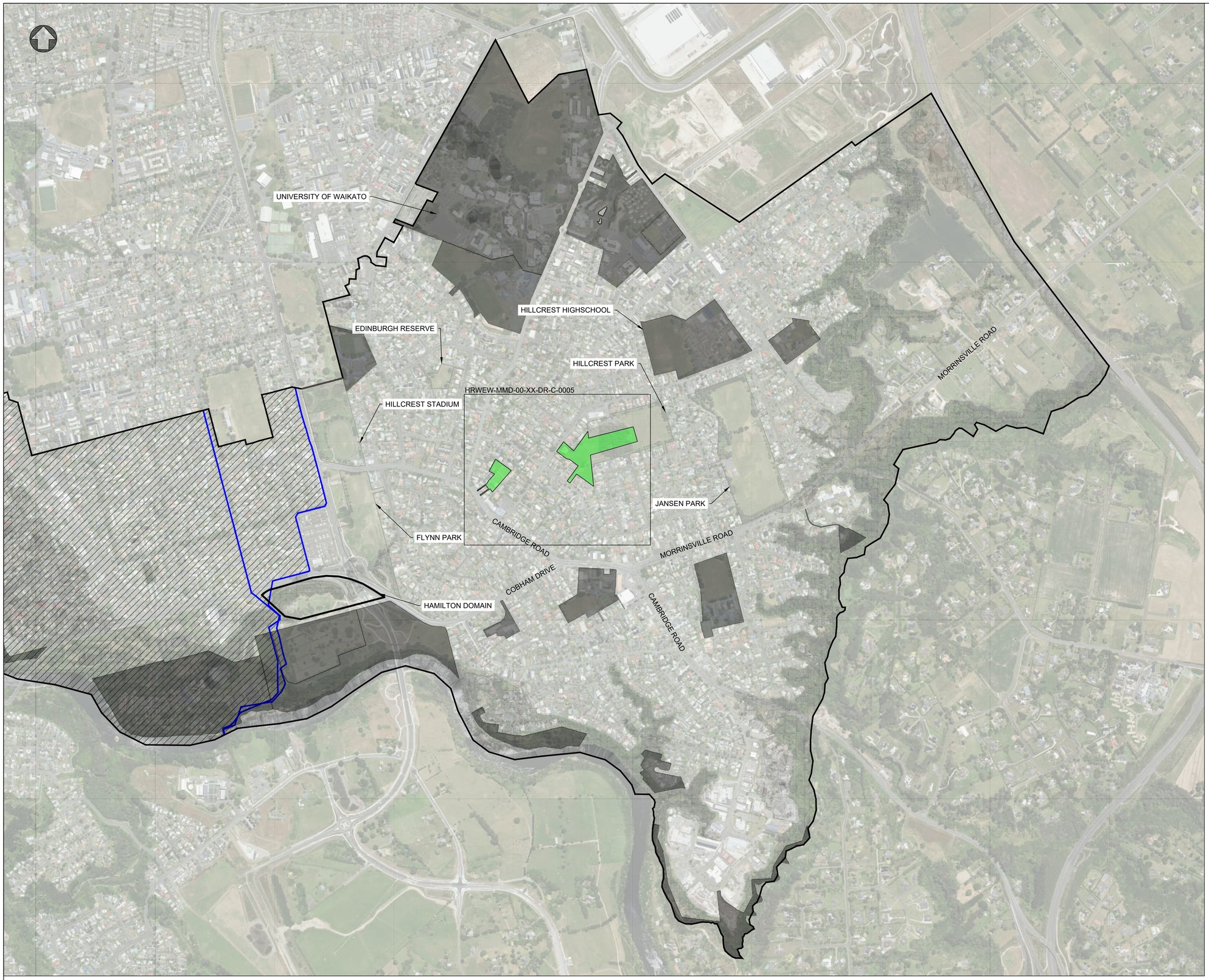
HILLCREST RESERVOIR & WATERMAIN
LONG LIST TO SHORT LIST
CONSENTING ASSESSMENT
SHEET 6 OF 8

Designed	S.MATEPARAE	SM	Eng check	B.TELFER	BT
Drawn	S.MATEPARAE	SM	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

MMD Project Number	Scale at A1	Security
705100882	1:7500	STD

Suitability Description	Suit. Code
NOT FOR CONSTRUCTION	S1

Drawing Number	Revision
HRWEW-MMD-00-XX-DR-C-0006	P03



PLAN
1:7500

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Notes

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P03	29/01/2026	SM	CLIENT COMMENTS ADDRESSED	BT	KJ
P02	16/01/2026	SM	CLIENT COMMENTS ADDRESSED	BT	RE
P01	16/12/2025	SM	RAG ASSESSMENT FOR CLIENT REVIEW	BT	KJ

Status Stamp

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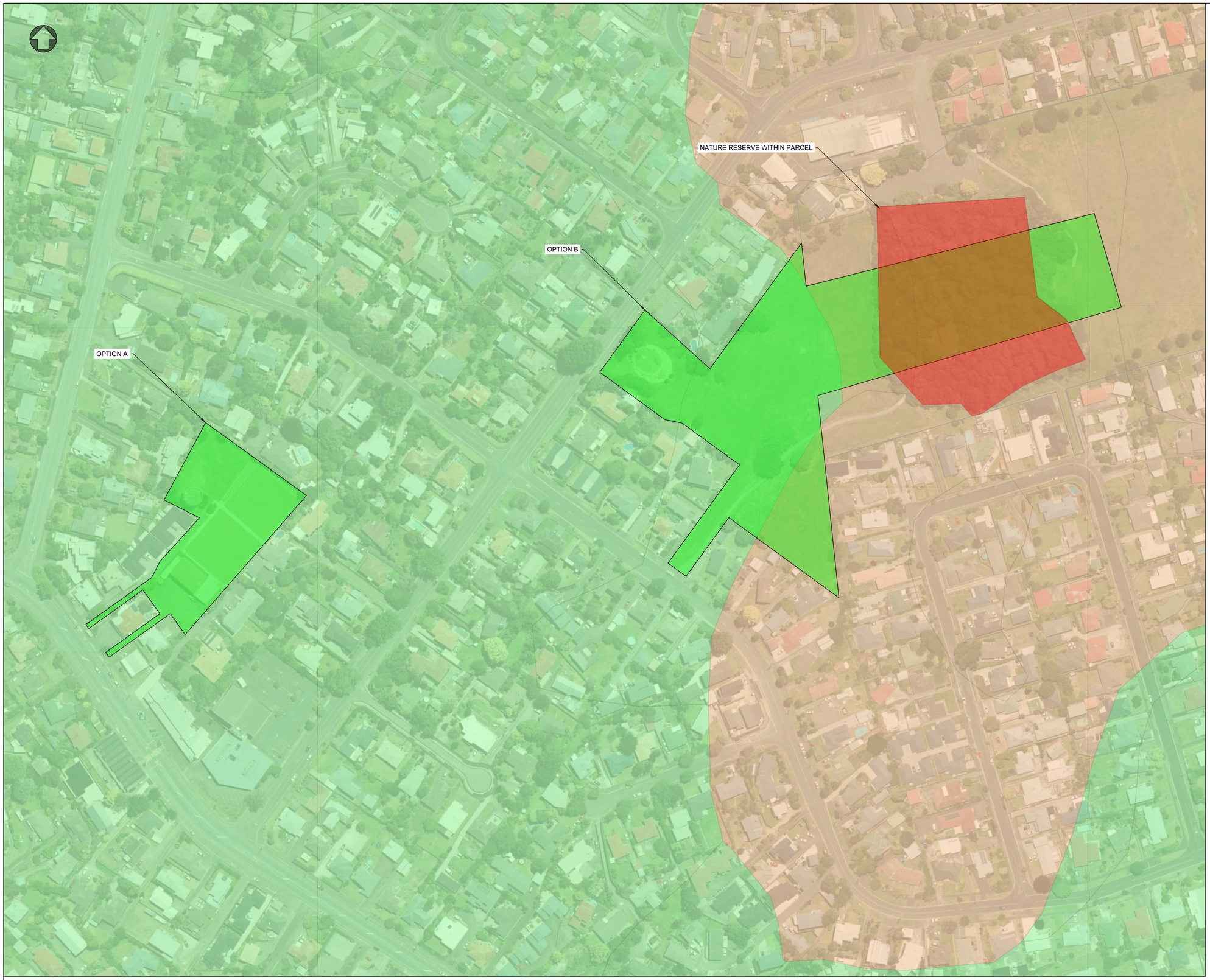
HILLCREST RESERVOIR & WATERMAIN
LONG LIST TO SHORT LIST
SITE SELECTION
SHEET 7 OF 7

Designed	S.MATEPARAE	SM	Eng check	B.TELFER	BT
Drawn	S.MATEPARAE	SM	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

MMD Project Number	Scale at A1	Security
705100882	AS SHOWN	STD

Suitability Description	Suit. Code
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Drawing Number	Revision
HRWEW-MMD-00-XX-DR-C-0007	P03



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Notes

REFER TO NOTES ON SHEETS C-0001 TO C-0006 FOR RAG CRITERIA DEFINITIONS

	OPTION A	OPTION B
SPATIAL	GREEN	GREEN
ELEVATION	GREEN	AMBER & RED
GEOLOGY	GREEN	GREEN & AMBER
GROUNDWATER	GREEN	GREEN
CONSENTING	GREEN	GREEN

Key to symbols

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P03	29/01/2026	SM	CLIENT COMMENTS ADDRESSED	BT	KJ
P02	16/01/2026	SM	CLIENT COMMENTS ADDRESSED	BT	RE
P01	16/12/2025	SM	RAG ASSESSMENT FOR CLIENT REVIEW	BT	KJ

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Title

HILLCREST RESERVOIR & WATERMAIN
LONG LIST TO SHORT LIST
DETAILED SITE OVERVIEW
SHEET 8 OF 8

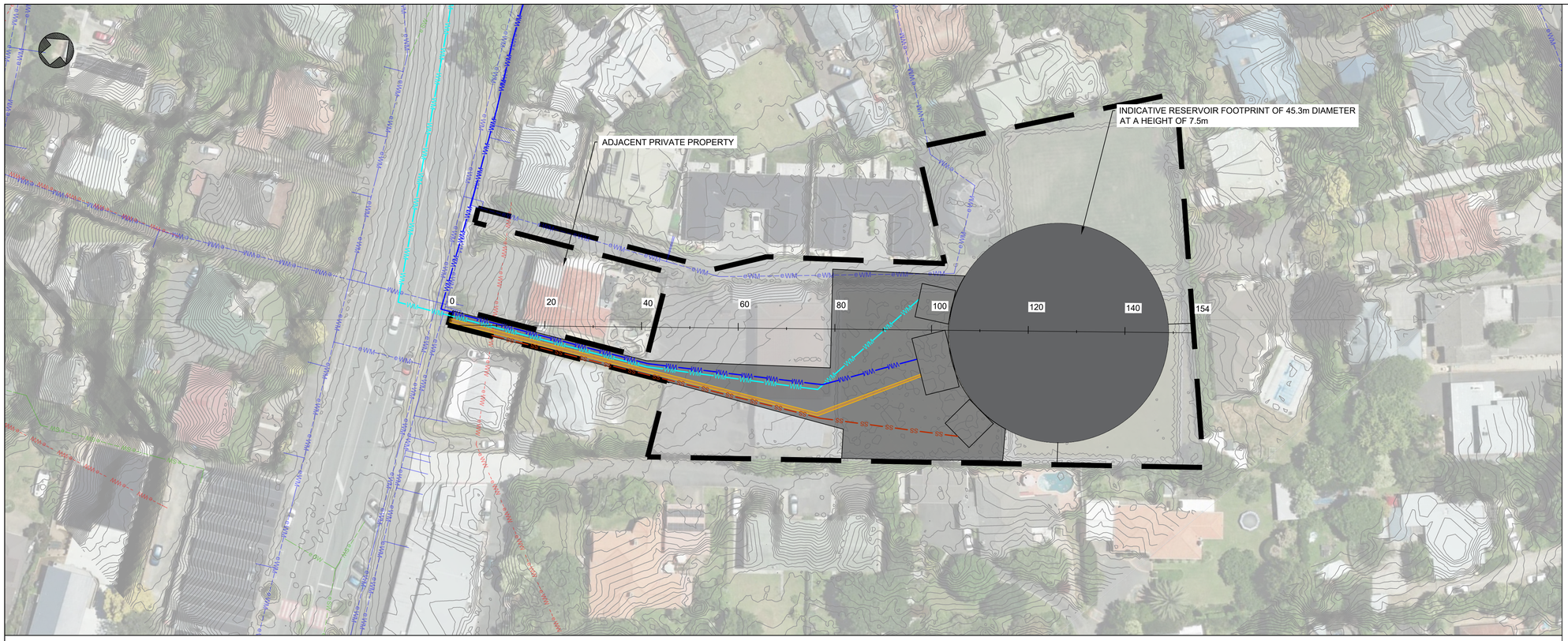
Designed	S.MATEPARAE	SM	Eng check	B.TELFER	BT
Drawn	S.MATEPARAE	SM	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

MMD Project Number	Scale at A1	Security
705100882	NTS	STD

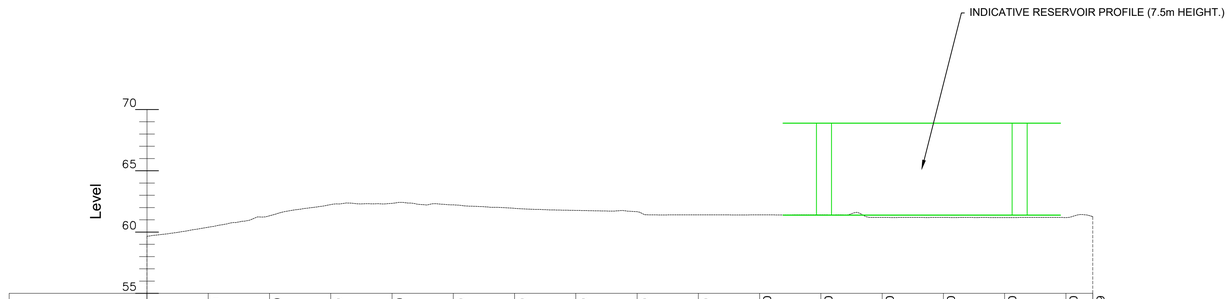
Suitability Description	Suit. Code
NOT FOR CONSTRUCTION	S1

Drawing Number	Revision
HRWEW-MMD-00-XX-DR-C-0008	P03

Appendix D – Hillcrest Reservoir & Watermain Short List Preliminary Drawing Set



PLAN
1:500



Chainage (m)	0.00	10.00	20.00	30.00	40.00	50.00	60.00	70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00	150.00	154.39
Existing Ground Levels	59.66	60.39	61.33	62.24	62.34	62.22	61.94	61.77	61.66	61.40	61.40	61.40	61.19	61.19	61.18	61.19	61.26

SECTION
H - 1:1000
V - 1:500

Notes

Key to symbols

LEGEND

- EXISTING WASTEWATER
- EXISTING STORMWATER
- EXISTING WATER
- PROPOSED COMMON SERVICE TRENCH
- PROPOSED PE TRUNK WATER MAIN
- PROPOSED PE BULK WATER MAIN
- PROPOSED WASTEWATER
- VEHICLE ACCESS ROAD
- CONCEPT RESERVOIR FOOTPRINT
- PROPERTY BOUNDARY

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P02	16/03/2026	JL	CONCEPT FOR CLIENT REVIEW	NS/DT	KJ
P01	23/02/2026	SM	CONCEPT FOR CLIENT REVIEW	BT	KJ

Status Stamp

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Client

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Te kaunihera o Kirikiriroa

Title

HILLCREST RESERVOIR & WATERMAIN
OPTION A - 111 CAMBRIDGE ROAD (BOWLING CLUB)
OUTLINE PLAN AND SECTION

Designed	J.LONG	JL	Eng check	D.TAYLOR	DT
Drawn	J.LONG	JL	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

MMD Project Number	Scale at A1	Security
705100882	NTS	STD

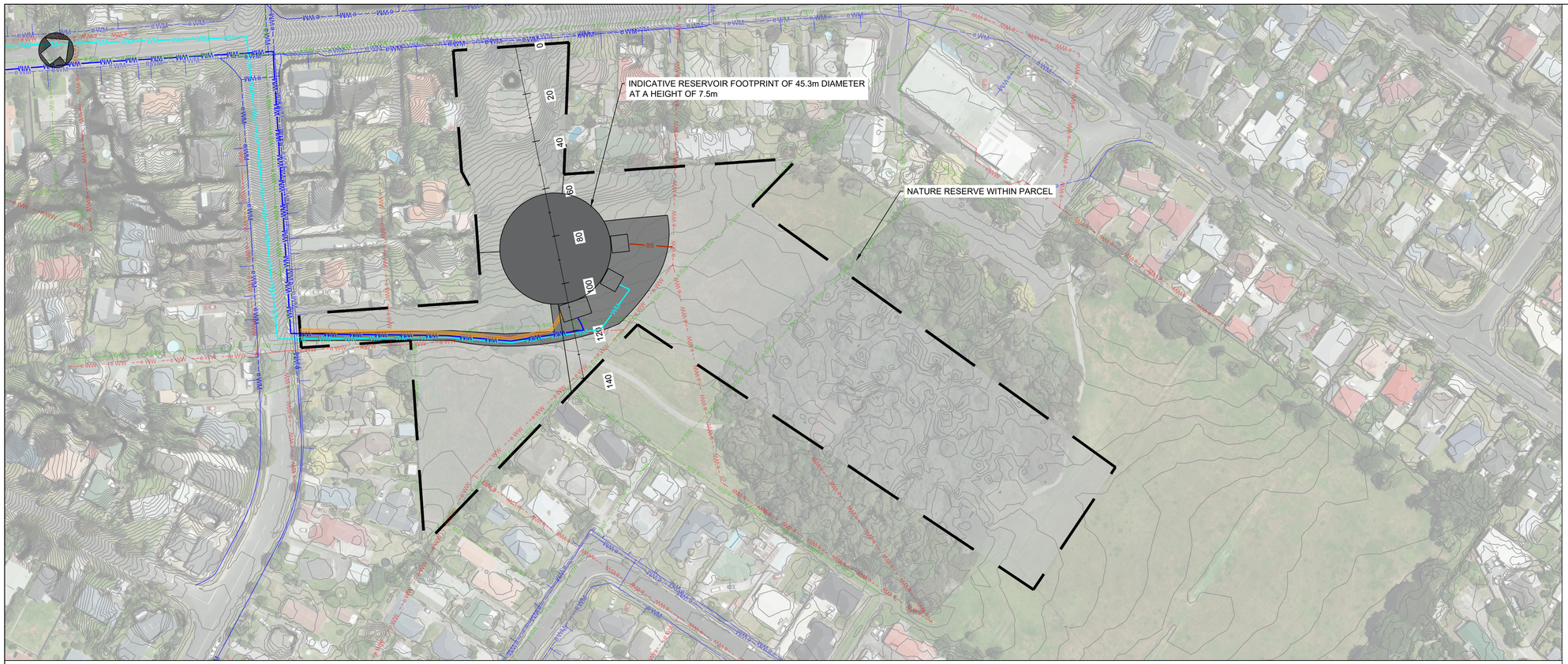
Suitability Description	Suit. Code
NOT FOR CONSTRUCTION	S1

Drawing Number	Revision
HRWEW-MMD-00-XX-DR-C-0101	P02

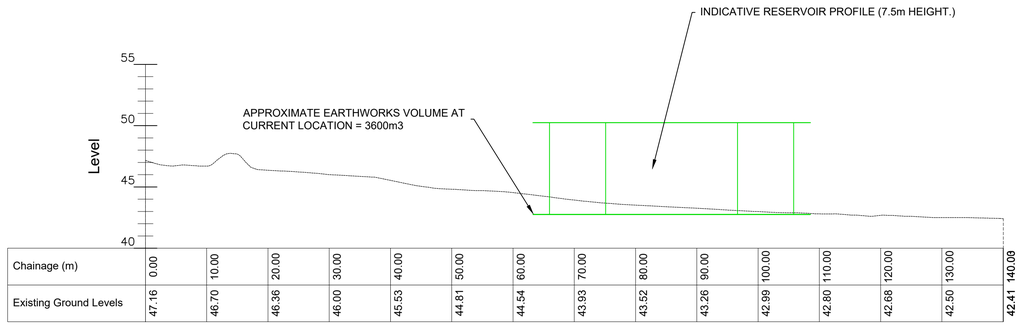
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RAG Model - Shortlist.dwg Mar 30, 2026 - 1:45pm LON106096



PLAN
1:1000



Chainage (m)	0.00	10.00	20.00	30.00	40.00	50.00	60.00	70.00	80.00	90.00	100.00	110.00	120.00	130.00	140.00
Existing Ground Levels	47.16	46.70	46.36	46.00	45.53	44.81	44.54	43.93	43.52	43.26	42.99	42.80	42.68	42.50	42.41

SECTION
H - 1:1000
V - 1:500

Notes

Key to symbols

LEGEND

- EXISTING WASTEWATER
- EXISTING STORMWATER
- EXISTING WATER
- PROPOSED COMMON SERVICE TRENCH
- PROPOSED PE TRUNK WATER MAIN
- PROPOSED PE BULK WATER MAIN
- PROPOSED WASTEWATER
- VEHICLE ACCESS ROAD
- CONCEPT RESERVOIR FOOTPRINT
- PROPERTY BOUNDARY

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P02	16/03/2026	JL	CONCEPT FOR CLIENT REVIEW	NS/DT	KJ
P01	23/02/2026	SM	CONCEPT FOR CLIENT REVIEW	BT	KJ

Status Stamp

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Client

Hamilton City Council
Te kaunihera o Kirikiriroa

Title

HILLCREST RESERVOIR & WATERMAIN
OPTION B - HILLCREST PARK
OUTLINE PLAN AND SECTION

Designed	J.LONG	JL	Eng check	D.TAYLOR	DT
Drawn	J.LONG	JL	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

MMD Project Number	Scale at A1	Security
705100882	NTS	STD

Suitability Description	Suit. Code
NOT FOR CONSTRUCTION	S1

Drawing Number	Revision
HRWEW-MMD-00-XX-DR-C-0102	P02

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Notes

Key to symbols

LEGEND

- EXISTING WASTEWATER
- EXISTING STORMWATER
- EXISTING WATER
- PROPOSED COMMON SERVICE TRENCH
- PROPOSED PE TRUNK WATER MAIN
- PROPOSED PE BULK WATER MAIN
- PROPOSED WASTEWATER
- VEHICLE ACCESS ROAD
- CONCEPT RESERVOIR FOOTPRINT
- PROPERTY BOUNDARY

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P01	11/03/2026	JL	CONCEPT FOR CLIENT REVIEW	NS/DT	KJ

Status Stamp

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Client

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Te kaunihera o Kirikiriroa

Title

HILLCREST RESERVOIR & WATERMAIN
OPTION A - 111 CAMBRIDGE ROAD (BOWLING CLUB)
OUTLINE SITE LAYOUT

Designed	J.LONG	JL	Eng check	D.TAYLOR	DT
Drawn	J.LONG	JL	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

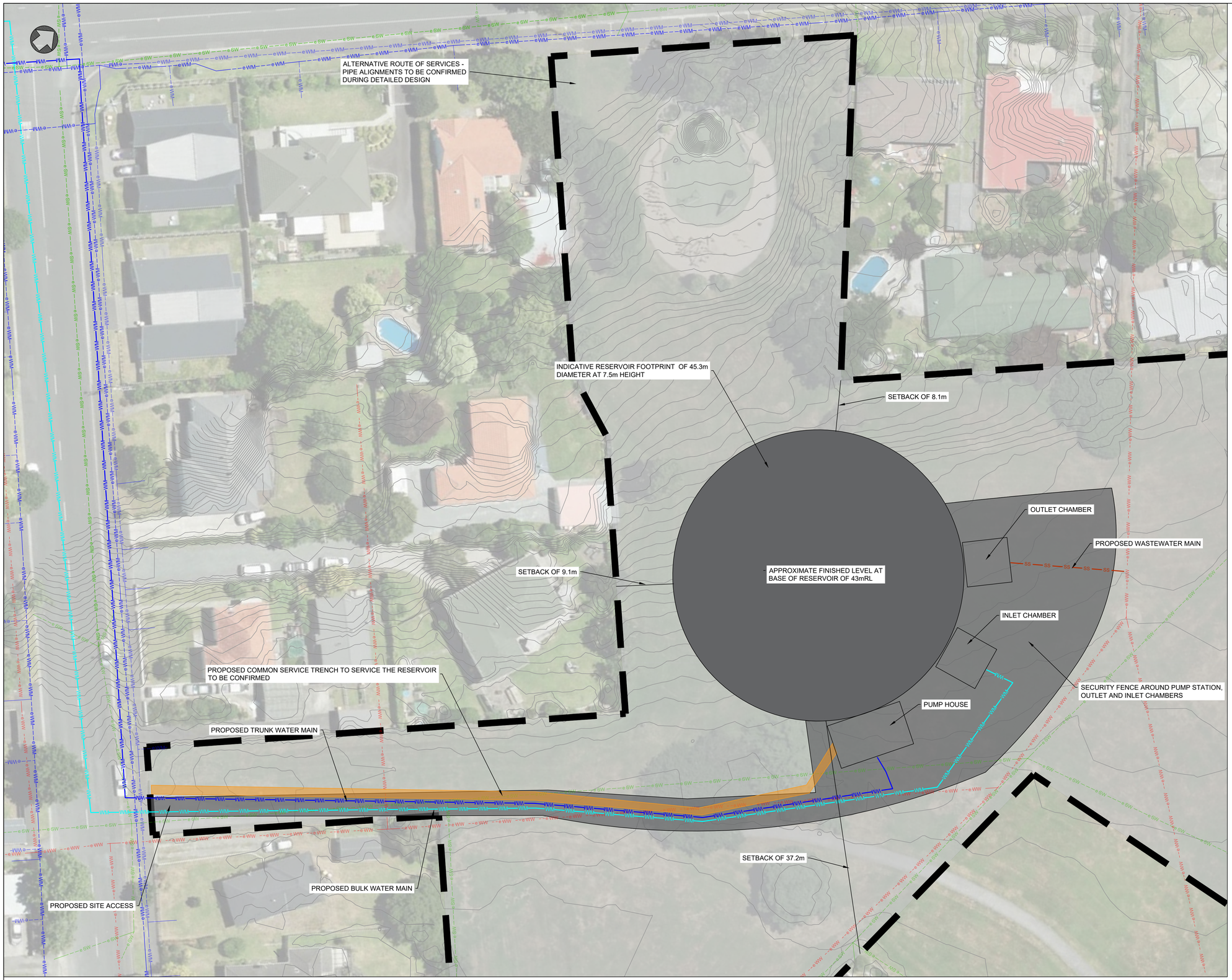
MMD Project Number	Scale at A1	Security
705100882	NTS	STD

Suitability Description	Suit. Code
NOT FOR CONSTRUCTION	S1

Drawing Number	Revision
HRWEW-MMD-00-XX-DR-C-0110	P01

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Notes

Key to symbols

LEGEND

- EXISTING WASTEWATER
- EXISTING STORMWATER
- EXISTING WATER
- PROPOSED COMMON SERVICE TRENCH
- PROPOSED PE TRUNK WATER MAIN
- PROPOSED PE BULK WATER MAIN
- PROPOSED WASTEWATER
- VEHICLE ACCESS ROAD
- CONCEPT RESERVOIR FOOTPRINT
- PROPERTY BOUNDARY

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P01	16/03/2026	JL	CONCEPT FOR CLIENT REVIEW	NS/DT	KJ

Status Stamp

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Client

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Title

HILLCREST RESERVOIR & WATERMAIN OPTION B - HILLCREST PARK OUTLINE SITE LAYOUT

Designed	J.LONG	JL	Eng check	D.TAYLOR	DT
Drawn	J.LONG	JL	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

MMD Project Number	Scale at A1	Security
705100882	NTS	STD

Suitability Description	Suit. Code
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Drawing Number	Revision
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Notes

Key to symbols

LEGEND

- EXISTING WASTEWATER
- EXISTING STORMWATER
- EXISTING WATER
- PROPOSED COMMON SERVICE TRENCH
- PROPOSED PE TRUNK WATER MAIN
- PROPOSED PE BULK WATER MAIN
- PROPOSED WASTEWATER
- VEHICLE ACCESS ROAD
- CONCEPT RESERVOIR FOOTPRINT
- PROPERTY BOUNDARY

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
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Status Stamp

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Title

HILLCREST RESERVOIR & WATERMAIN OPTION A - 111 CAMBRIDGE ROAD (BOWLING CLUB) BULK AND TRUNK MAIN ALIGNMENT

Designed	J. LONG	JL	Eng check	D.TAYLOR	DT
Drawn	J.LONG	JL	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

MMD Project Number	Scale at A1	Security
705100882	NTS	STD

Suitability Description	Suit. Code
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Notes

Key to symbols

LEGEND

- EXISTING WASTEWATER
- EXISTING STORMWATER
- EXISTING WATER
- PROPOSED COMMON SERVICE TRENCH
- PROPOSED PE TRUNK WATER MAIN
- PROPOSED PE BULK WATER MAIN
- PROPOSED WASTEWATER
- VEHICLE ACCESS ROAD
- CONCEPT RESERVOIR FOOTPRINT
- PROPERTY BOUNDARY

Reference drawings

Rev	Date	Drawn	Description	Ch'k'd	App'd
P01	16/03/2026	JL	CONCEPT FOR CLIENT REVIEW	NS/DT	KJ

Status Stamp

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Title

HILLCREST RESERVOIR & WATERMAIN
OPTION B - HILLCREST PARK
BULK AND TRUNK MAIN ALIGNMENT

Designed	J.LONG	JL	Eng check	D.TAYLOR	DT
Drawn	J.LONG	JL	Coordination	R.ELLERY	RE
Dwg check	N.SENARATNE	NS	Approved	K.JACKSON	KJ

MMD Project Number	Scale at A1	Security
705100882	NTS	STD

Suitability Description	Suit. Code
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Drawing Number	Revision
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Appendix E – Specialist Scoring Sheets and Moderation Workshop Results

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Approved by:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework - Moderated Scores Summary

Scored By: All

				Option A (111 Cambridge Road - Bowling Club Site)																Option B (Hillcrest Park)													
Main Criteria	**Main criteria weighting**	**Sub Criteria**	**Sub criteria weighting**	**MM ENG**	**MM PLAN**	**HCC OP - GP**	**HCC OP - KH**	**HCC MNT - DR**	**HCC PLAN - CD**	**HCC PLAN - NS**	**HCC PM - VL**	**HCC - DH**	**BOFFA MISKELL**	**MANA WHENUA**	**Avg.**	**Weighted Avg.**	**Mod. Score**	**Weighted Mod.**	**MM ENG**	**MM PLAN**	**HCC OP - GP**	**HCC OP - KH**	**HCC MNT - DR**	**HCC PLAN - CD**	**HCC PLAN - NS**	**HCC PM - VL**	**HCC - DH**	**BOFFA MISKELL**	**MANA WHENUA**	**Avg.**	**Weighted Avg.**	**Mod. Score**	**Weighted Mod.**
Operations	33%	Pump and pump station complexity or scale	45%	6	-	-	-	-	-	-	-	-	-	-	6	2.7	6	2.7	4	-	-	-	-	-	-	-	-	-	-	4	1.8	4	1.8
		Accessibility	10%	-	-	5	5	5	-	-	-	5	-	-	5	0.5	5	0.5	-	-	6	6	6	-	-	-	4	-	-	5.5	0.55	5	0.5
		Maintenance	30%	5	-	-	-	-	-	-	-	-	-	-	5	1.5	5	1.5	2	-	-	-	-	-	-	-	-	-	-	2	0.6	2	0.6
		Facility operation impacts	15%	-	-	4	4	4	5	4	4	3	-	-	4	0.6	4	0.6	-	-	6	6	6	6	6	5	5	-	-	5.7	0.9	6	0.9
		Sub Total	**100%**												20	5.3	20	5.3												17.2	3.8	17	3.8
Resilience	23%	Network resilience (short term)	20%	6	-	-	-	-	-	-	-	-	-	-	6	1.2	6	1.2	1	-	-	-	-	-	-	-	-	-	-	1	0.2	1	0.2
		Future proofing	50%	-	-	2	2	2	6	4	6	4	-	-	3.7	1.9	4	2	-	-	6	6	6	7	6	7	5	-	-	6.1	3.1	6	3
		Geotechnical resilience	30%	7	-	-	-	-	-	-	-	-	-	-	7	2.1	7	2.1	3	-	-	-	-	-	-	-	-	-	-	3	0.9	3	0.9
		Sub Total	**100%**												16.7	5.2	17	5.3												10.1	4.2	10	4.1
Social Impact (Long term)	13%	Landscape effects	20%	-	-	-	-	-	-	-	-	-	5	-	5	1	5	1	-	-	-	-	-	-	-	-	-	3	-	3	0.6	3	0.6
		Visual Effects	40%	-	-	-	-	-	-	-	-	-	3	-	3	1.2	3	1.2	-	-	-	-	-	-	-	-	-	3	-	3	1.2	3	1.2
		Social Cohesion (operational)	20%	-	7	-	-	-	7	7	-	-	-	-	7	1.4	7	1.4	-	3	-	-	-	2	4	-	-	-	-	3	0.6	3	0.6
		Human health and Welbeing	20%	-	5	-	-	-	6	6	-	-	-	-	5.7	1.1	6	1.2	-	2	-	-	-	4	4	-	-	-	-	3.3	0.7	4	0.8
		Sub Total	**100%**												20.7	4.7	21	4.8												12.3	3.1	13	3.2
Environmental	13%	Ecology	50%	-	7	-	-	-	7	6	-	-	-	-	6.7	3.3	6	3	-	4	-	-	-	5	5	-	-	-	-	4.7	2.3	4	2
		Earthworks	25%	7	-	-	-	-	-	-	-	-	-	-	7	1.8	7	1.8	2	-	-	-	-	-	-	-	-	-	-	2	0.5	2	0.5
		Pre/post development considerations	25%	-	6	-	-	-	6	2	-	-	-	-	4.7	1.2	6	1.5	-	2	-	-	-	2	2	-	-	-	-	2	0.5	2	0.5
		Sub Total	**100%**												18.3	6.3	19	6.3												8.7	3.3	8	3
Planning Risk	8%	Land use restrictions	100%	-	5	-	-	-	6	5	-	-	-	-	5.3	5.3	5	5	-	2	-	-	-	3	4	-	-	-	-	3	3	3	3
.	.	**Sub Total**	**100%**												5.3	5.3	5	5												3	3	3	3
Constructability (Short term)	8%	Impacts during construction staging (Phase Plan)	10%	3	-	5	3	3	4	4	5	3	-	-	3.8	0.4	4	0.4	6	-	6	6	6	6	6	6	6	-	-	6	0.6	6	0.6
		Critical design uncertainities/ adaptability	20%	5	-	5	5	5	6	-	7	3	-	-	5.1	1.0	5	1	4	-	6	6	6	4	-	7	6	-	-	5.6	1.1	6	1.2
		Main site access	20%	3	-	4	3	3	3	4	5	3	-	-	3.5	0.7	4	0.8	5	-	6	6	6	6	6	6	6	-	-	5.9	1.2	6	1.2
		Public Distruption	15%	-	3	-	-	-	2	3	-	-	-	-	2.7	0.4	3	0.5	-	2	-	-	-	4	4	-	-	-	-	3.3	0.5	4	0.6
		Traffic management requirements	20%	3	4	-	-	-	4	6	-	5	-	-	4.4	0.9	4	0.8	2	3	-	-	-	4	4	-	4	-	-	3.4	0.7	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	5	-	-	-	-	-	-	-	-	-	-	5	0.8	5	0.8	2	-	-	-	-	-	-	-	-	-	-	2	0.3	2	0.3
		Sub Total	**100%**												24.5	4.1	25.0	4.2												26.2	4.4	27.0	4.5
Total Score	**100%**	**Total Score**													**105.5**	**5.2**	**107.0**	**5.2**												**77.5**	**3.7**	**78.0**	**3.7**

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Approved by:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework - Sensitivity Analysis
Scored By:	All

Default

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	33%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	23%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	13%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	13%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	8%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	8%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.2**	**78.0**	**3.7**

Operations +10

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	43%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	21%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	11%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	11%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	6%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	6%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.3**	**78.0**	**3.7**

Operations +20

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	53%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	19%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	9%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	9%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	4%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	4%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.3**	**78.0**	**3.7**

Operations +30

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	63%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	17%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	7%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	7%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	2%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	2%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.3**	**78.0**	**3.7**

Resilience +10

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	31%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	33%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	11%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	11%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	6%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	6%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.3**	**78.0**	**3.7**

Resilience +20

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	29%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	43%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	9%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	9%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	4%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	4%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.3**	**78.0**	**3.8**

Resilience +30

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	27%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	53%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	7%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	7%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	2%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	2%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.3**	**78.0**	**3.9**

Social Impact +10

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	31%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	21%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	23%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	11%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	6%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	6%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.2**	**78.0**	**3.6**

Social Impact +20

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	29%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	19%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	33%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	9%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	4%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	4%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.2**	**78.0**	**3.6**

Social Impact +30

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	27%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	17%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	43%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	7%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	2%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	2%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.1**	**78.0**	**3.5**

Environmental +10

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	31%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	21%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	11%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	23%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	6%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3

Environmental +20

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	29%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	19%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	9%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	33%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	4%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3

Environmental +30

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Option A Mod. Score	Option A Weighted Mod.	Option B Mod. Score	Option B Weighted Mod.
Operations	27%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	17%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	7%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	43%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	2%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3

Constructability (Short term)	6%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lenghts.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.4**	**78.0**	**3.6**

Constructability (Short term)	4%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lenghts.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.5**	**78.0**	**3.5**

Constructability (Short term)	2%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lenghts.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.6**	**78.0**	**3.5**

Planning Risk +10

				Option A		Option B	
Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Mod. Score	Weighted Mod.	Mod. Score	Weighted Mod.
Operations	31%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	21%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	11%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	11%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	18%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	6%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lenghts.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.2**	**78.0**	**3.6**

Planning Risk +20

				Option A		Option B	
Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Mod. Score	Weighted Mod.	Mod. Score	Weighted Mod.
Operations	29%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	19%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	9%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	9%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	28%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	4%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lenghts.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.2**	**78.0**	**3.5**

Planning Risk +30

				Option A		Option B	
Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Mod. Score	Weighted Mod.	Mod. Score	Weighted Mod.
Operations	27%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	17%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	7%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	7%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	38%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	2%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lenghts.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.2**	**78.0**	**3.5**

Constructability +10

				Option A		Option B	
Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Mod. Score	Weighted Mod.	Mod. Score	Weighted Mod.
Operations	31%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	21%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	11%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	11%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	6%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	18%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lenghts.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.1**	**78.0**	**3.8**

Constructability +20

				Option A		Option B	
Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Mod. Score	Weighted Mod.	Mod. Score	Weighted Mod.
Operations	29%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	19%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	9%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	9%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	4%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	28%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lenghts.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**5.0**	**78.0**	**3.9**

Constructability +30

				Option A		Option B	
Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Mod. Score	Weighted Mod.	Mod. Score	Weighted Mod.
Operations	27%	Pump and pump station complexity or scale	45%	6	2.7	4	1.8
		Accessibility	10%	5	0.5	5	0.5
		Maintenance	30%	5	1.5	2	0.6
		Facility operation impacts	15%	4	0.6	6	0.9
		Sub Total	**100%**	20	5.3	17	3.8
Resilience	17%	Network resilience (short term)	20%	6	1.2	1	0.2
		Future proofing	50%	4	2	6	3
		Geotechnical resilience	30%	7	2.1	3	0.9
		Sub Total	**100%**	17	5.3	10	4.1
Social Impact (Long term)	7%	Landscape effects	20%	5	1	3	0.6
		Visual Effects	40%	3	1.2	3	1.2
		Social Cohesion (operational)	20%	7	1.4	3	0.6
		Human health and Wellbeing	20%	6	1.2	4	0.8
		Sub Total	**100%**	21	4.8	13	3.2
Environmental	7%	Ecology	50%	6	3	4	2
		Earthworks	25%	7	1.75	2	0.5
		Pre/post development considerations	25%	6	1.5	2	0.5
		Sub Total	**100%**	19	6.25	8	3
Planning Risk	2%	Land use restrictions	100%	5	5	3	3
-	-	**Sub Total**	**100%**	5	5	3	3
Constructability (Short term)	38%	Impacts during construction staging (Phase Plan)	10%	4	0.4	6	0.6
		Critical design uncertainties/ adaptability	20%	5	1	6	1.2
		Main site access	20%	4	0.8	6	1.2
		Public Distruption	15%	3	0.45	4	0.6
		Traffic management requirements	20%	4	0.8	3	0.6
		GHG and Carbon Emissions based on length of new trunk and bulk main lenghts.	15%	5	0.75	2	0.3
		Sub Total	**100%**	25.0	4.2	27.0	4.5
Total Score	**100%**	**Total Score**		**107.0**	**4.9**	**78.0**	**4.0**

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Project Manager:	Kat Jackson
Approved by:	Blair Telfer
Project Director:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework - Scoring and Commentary by All Parties
Scored By:	All

						Option A (111 Cambridge Road - Bowling Club Site)												Option B (Hillcrest Park)											
Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Scoring Matrix	Scoring Team	MM ENG	MM PLAN	HCC OP - GP	HCC OP - KH	HCC MNT DR	HCC PLAN - CD	HCC PLAN - NS	HCC PM - VL	HCC - DH	BOFFA MISKELL	MANA WHENUA	Avg.	Mod. Score	MM ENG	MM PLAN	HCC OP - GP	HCC OP - KH	HCC MNT DR	HCC PLAN - CD	HCC PLAN - NS	HCC PM - VL	HCC - DH	BOFFA MISKELL	MANA WHENUA	Avg.	Mod. Score
Operations	33%	Pump and pump station complexity or scale	45%	Score 6 - 7 Pump size less than 100 kW Score 3 - 5 Pump size between 100 kW to 200 kW Score 1 - 2 Pump size greater than 200 kW	Mott MacDonald - Engineering	6	-	-	-	-	-	-	-	-	-	-	6	6	4	-	-	-	-	-	-	-	-	-	-	4	4
		Accessibility, including access to infrastructure for maintenance (sludge removal etc.)	10%	Score 6 - 7 Limited accessibility constraints. Score 3 - 5 Moderate accessibility constraints. Score 1 - 2 High to significant accessibility constraints.	HCC - Operations HCC - Maintenance HCC - Owner	-	-	5	5	5	-	-	-	5	-	-	5	5	-	-	6	6	6	-	-	-	4	-	-	5.5	5
		Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	30%	Score 6 - 7 Less than 1km pipeline construction length. Score 3 - 5 Between 1km and 2km of pipeline construction length. Score 1 - 2 Greater than 2km.	Mott MacDonald - Engineering	5	-	-	-	-	-	-	-	-	-	-	5	5	2	-	-	-	-	-	-	-	-	-	-	2	2
		Facility operation impacts	15%	Score 6 - 7 No or low operational impact. Located away from residential properties. Score 3 - 5 Moderate to high operational impact, but manageable with mitigation. Score 1 - 2 High to significant operational impact resulting in public opposition.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	4	4	4	5	4	4	3	-	-	4	4	-	-	6	6	6	6	6	5	5	-	-	5.7	6
		Sub Total	**100%**														20	20											17.2	
Resilience	23%	Network resilience (short term)	20%	Score 6-7 Less than 2,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Score 3-5 2,000 - 5,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Score 1-2 > 5000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service.	Mott MacDonald - Engineering	6	-	-	-	-	-	-	-	-	-	-	6	6	1	-	-	-	-	-	-	-	-	-	-	1	1
		Future proofing	50%	Score 6 - 7 Sufficient space available for a second reservoir or expansion to meet demands beyond 2061 projections. Requires acquisition of more public/green spaces. Scores 3 - 5 Site constrained by space and zoning. Requires acquisition of more residential/private properties. Score 1 - 2 No viable space or planning provision for future expansion.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	2	2	2	6	4	6	4	-	-	3.7	4	-	-	6	6	6	7	6	7	5	-	-	6.1	6
		Geotechnical resilience	30%	Score 6 - 7 Atop/crest of rolling hill with gentle slope gradient, very shallow instability features – no large-scale historical slips or evidence of other shallow rotational features during site walkover or from historical aerial photos. Score 3 - 5 Low-lying landform, with minor undulations and hummocky ground, requires detailed assessments. Score 1 - 2 Identified or obvious geohazard, including but not limited to gully head and scarp, erosional features and surface tension cracks, requires engineering intervention such as ground improvement.	Mott MacDonald - Engineering	7	-	-	-	-	-	-	-	-	-	-	7	7	3	-	-	-	-	-	-	-	-	-	-	3	3
		Sub Total	**100%**														16.7	17											10.1	10
Social Impact (Long term)	13%	Landscape effects	20%	Score 6 - 7 Low impact on landform and vegetation with opportunities for mitigation (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on landform and vegetation with possible opportunities for mitigation. Score 1 - 2 Very high to significant impact on landform and vegetation and limited opportunities for mitigation.	Boffa Miskel	-	-	-	-	-	-	-	-	-	5	-	5	5	-	-	-	-	-	-	-	-	-	-	3	-	3	3
		Visual Effects	40%	Score 6 - 7 Low impact on visual amenity with opportunities for screening (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on visual amenity with possible opportunities for screening. Score 1 - 2 Very high to significant impact on visual amenity and limited opportunities for screening.	Boffa Miskel	-	-	-	-	-	-	-	-	-	3	-	3	3	-	-	-	-	-	-	-	-	-	-	3	-	3	3
		Social Cohesion (operational)	20%	Score 6 - 7 No to low impact on social cohesion including connectivity and access to open space. Score 3 - 5 Moderate to high impact on social cohesion including connectivity and access to open space. Score 1 - 2 Significant impact on social cohesion including connectivity and access to open space.	Mott MacDonald - Planning HCC - Planning	-	7	-	-	-	7	7	-	-	-	-	7	7	-	3	-	-	-	2	4	-	-	-	-	3	3
		Human health and Welbeing	20%	Score 6 - 7 Nil to low impact on health and well-being. Score 3 - 5 Moderate to high impact on health and wellbeing. Score 1 - 2 Significant impact on health and wellbeing.	Mott MacDonald - Planning HCC - Planning	-	5	-	-	-	6	6	-	-	-	-	5.7	6	-	2	-	-	-	4	4	-	-	-	-	3.3333	4
		Sub Total	**100%**														20.7	21											12.333	13
Environmental	13%	Ecology	50%	Score 6 - 7 No trees cleared or any at risk species removal avoided or relocated (6) and opportunities for ecological enhancement and net positive effects (7). Score 3 - 5 Indigenous or at-risk species present with moderate to minor potential habitat or tree clearance resulting in moderate ecological effects. Score 1 - 2 Indigenous or at-risk species present with significant to large potential habitat or tree clearance resulting in significant ecological effects.	Mott MacDonald - Planning HCC - Planning	-	7	-	-	-	7	6	-	-	-	-	6.7	6	-	4	-	-	-	5	5	-	-	-	-	4.7	4
		Earthworks	25%	Score 7 - No terrain or topography issues, requiring negligible earthworks or no cut to waste volumes. Less than 1000m3. Score 5 - 6 - Some terrain or topography issues requiring some earthworks Some cut to waste volumes 1000m3 to 2000m3. Score 3 - 4 - Moderate terrain or topography issues, requiring moderate earthworks. moderate cut to waste volumes. 2000m3 to 3000m3. Score 1 - 2 - Significant terrain or topography issues, requiring significant earthworks, retaining structures resulting in high cut to waste volumes. Over 3000m3.	Mott MacDonald - Engineering	7	-	-	-	-	-	-	-	-	-	-	7	7	2	-	-	-	-	-	-	-	-	-	-	2	2
		Pre/post development considerations	25%	Score 6 - 7 - Negligible to low pre/post development changes to site. Score 3 - 5 - Low to moderate pre/post development changes to site. Score 1 - 2 - Moderate to significant pre/post development changes to site.	Mott MacDonald - Planning HCC - Planning	-	6	-	-	-	6	2	-	-	-	-	4.7	6	-	2	-	-	-	2	2	-	-	-	-	2	2
		Sub Total	**100%**														18.3	19											8.7	8
Planning Risk	8%	Land use restrictions	100%	Score 6 - 7 - Negligible to low land use restrictions impacting consentability. Score 3 - 5 - Moderate land use restrictions impacting consentability. Score 1 - 2 - Significant to major land use restrictions impacting consentability.	Mott MacDonald - Planning HCC - Planning	-	5	-	-	-	6	5	-	-	-	-	5.3333	5	-	2	-	-	-	3	4	-	-	-	-	3	3
-	-	**Sub Total**	**100%**														5.3333	5											3	3
Constructability (Short term)	8%	Impacts during construction staging (Phase Plan)	10%	Score 6 - 7 - Construction staging straightforward, site offers higher flexibility around construction staging. Score 3 - 5 - Low to moderate complexity in construction staging. Score 1 - 2 - Moderate to very high complexity in construction staging due to existing infrastructure, level of temporary works required etc.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	-	5	3	3	4	4	5	3	-	-	3.8	4	6	-	6	6	6	6	6	6	6	-	-	6	6
		Critical design uncertainities/ adaptability	20%	Score 6 - 7 - No to low design uncertainities. Score 3 - 5 - Low to moderate design uncertainities, site less constrained to carry out further investigations. Score 1 - 2 - High design uncertainities, site constrained to carry out initial investigations.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	5	-	5	5	5	6	-	7	3	-	-	5.1	5	4	-	6	6	6	4	-	7	6	-	-	5.6	6
		Main site access	20%	Score 6 - 7 - Site easily accessible with minimal disruption, located away from busy intersections or residential areas. Score 3 - 5 - Site access causes a moderate level of disruption due to surrounding land use/residential area. Score 1 - 2 - Site access caused high to significant level of disruption, located in dense residential area or near busy intersections.	Mott MacDonald - Engineering BBO - Transport Team HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	-	4	3	3	3	4	5	3	-	-	3.5	4	5	-	6	6	6	6	6	6	6	-	-	5.9	6
		Public Distruption	15%	Score 6 - 7 - Low short-term impact. Site well-separated from residential properties and businesses and other sensitive receptors. Score 3 - 5 - Moderate short-term impact. Some disruption due to proximity of residential properties and businesses and other sensitive receptors. Score 1 - 2 - High to significant short-term impact due to dense residential surroundings and/or type of construction activity being more complex.	HCC - Planning Vibration and noise consultant (BBO consultant)	-	3	-	-	-	2	3	-	-	-	-	2.7	3	-	2	-	-	-	4	4	-	-	-	-	3.3	4
		Traffic management requirements	20%	Score 6 - 7 - Traffic management requirements are simple and/or localised. Score 3 - 5 - Traffic management requirements are moderately complex and of moderate scale. Score 1 - 2 - Traffic management requirements are highly complex and widespread.	Mott MacDonald - Engineering Mott MacDonald - Planning HCC - Planning BBO - Transport	3	4	-	-	-	4	6	-	5	-	-	4.4	4	2	3	-	-	-	4	4	-	4	-	-	3.4	3
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	Score 6 - 7 - Less than 1km pipeline construction length. Score 3 - 5 - Between 1km and 2km of pipeline construction length. Score 1 - 2 – Greater than 2km.	Mott MacDonald - Engineering	5	-	-	-	-	-	-	-	-	-	-	5	5	2	-	-	-	-	-	-	-	-	-	-	2	2
		Sub Total	**100%**														24.5	25											26.2	27

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Approved by:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework - Scoring and Commentary Template

Project Manager: Kat Jackson
Project Director: Blair Telfer

MOTT MACDONALD

Scored By: MM Engineering

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Scoring Matrix	Scoring Team	Option A (111 Cambridge Road - Bowling Club Site)	Option B (Hillcrest Park)	Justification/Site Specific Comments
Operations	30%	Pump and pump station complexity or scale	45%	Score 6 - 7 Pump size less than 100 kW Score 3 - 5 Pump size between 100 kW to 200 kW Score 1 - 2 Pump size greater than 200 kW	Mott MacDonald - Engineering	6	4	**Option A - Bowling Club Site** The base level of reservoir at the proposed bowling club site is 61mRL. At this elevation, an additional pressure head of 26m is required to service the proposed Hillcrest zone. A 80kW pump is required to supply the zone at 211.3L/s, therefore, receiving a score of 6. **Option B - Hillcrest Park Site** The base level of reservoir at the proposed bowling club site is 43mRL. At this elevation, an additional pressure head of 44m is required to service the proposed Hillcrest zone. A 132kW pump is required to supply the zone at 211.3L/s, therefore, receiving a score of 4.
		Accessibility, including access to infrastructure for maintenance (sludge removal etc.)	10%	Score 6 - 7 Limited accessibility constraints. Score 3 - 5 Moderate accessibility constraints. Score 1 - 2 High to significant accessibility constraints.	HCC - Operations HCC - Maintenance HCC - Owner	-	-	
		Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	30%	Score 6 - 7 Less than 1km pipeline construction length. Score 3 - 5 Between 1km and 2km of pipeline construction length. Score 1 - 2 Greater than 2km.	Mott MacDonald - Engineering	5	2	**Option A - Bowling Club Site** This option requires a total of 1.0 Km of new bulk and trunk main construction, receiving a score of 5. **Option B - Hillcrest Park Site** This option requires a total of 2.2km of new bulk and trunk main construction, receiving a score of 2.
		Facility operation impacts	15%	Score 6 - 7 No or low operational impact. Located away from residential properties. Score 3 - 5 Moderate to high operational impact, but manageable with mitigation. Score 1 - 2 High to significant operational impact resulting in public opposition.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	
		Sub Total	**100%**					
Resilience	20%	Network resilience (short term)	20%	Score 6-7 Less than 2,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Scores 3-5 2,000 - 5,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Score 1-2 > 5000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service.	Mott MacDonald - Engineering	6	1	**Option A - Bowling Club Site** The number of properties is 585, less than 10m (unacceptable level of service). 5097 properties greater than 10m (acceptable level of service) **Option B - Hillcrest Park Site** The number of properties is 5435, less than 10m (unacceptable level of service). 247 properties greater than 10m (acceptable level of service)
		Future proofing	50%	Score 6 - 7 Sufficient space available for a second reservoir or expansion to meet demands beyond 2061 projections. Requires acquisition of more public/green spaces. Scores 3 - 5 Site constrained by space and zoning. Requires acquisition of more residential/private properties. Score 1 - 2 No viable space or planning provision for future expansion.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	
		Geotechnical resilience	30%	Score 6 - 7 Atop/crest of rolling hill with gentle slope gradient, very shallow instability features – no large-scale historical slips or evidence of other shallow rotational features during site walkover or from historical aerial photos. Score 3 - 5 Low-lying landform, with minor undulations and hummocky ground, requires detailed assessments. Score 1 - 2 Identified or obvious geohazard, including but not limited to gully head and scarp, erosional features and surface tension cracks, requires engineering intervention such as ground improvement.	Mott MacDonald - Engineering	7	3	**Option A (111 Cambridge Road – Bowling Club)** is located at or near the crest of a rolling hill with gentle slopes and no identifiable large-scale instability features evident from site layout or long-section profiles. This landform setting is consistent with a geohazard susceptibility score of 6–7. **Option B (Hillcrest Park)** is located on lower-lying to mid-slope terrain with greater earthworks requirements and increased geomorphic uncertainty. While no obvious geohazards are indicated on the drawings, the landform warrants more detailed assessment and is consistent with a score in the range of 3–5.
		Sub Total	**100%**					
Mana Whenua	20%	Whakapapa – Heritage, historical connection to site	20%	Avoid impacts on wāhi tapu, wāhi whakahirahira, wāhi tupuna and mahinga kai, while maintaining and enhancing the mauri of whakapapa, whenua, wai, ngā taonga, me ngā tāngata o te hāpori. Scoring	Mana Whenua	-	-	
		Mauri mana o te whenua - Lands, current, previous use	20%	7 - Transformational enhancement / restores mauri (and CP) 6 - Very strong positive alignments to CP 5 - Strong positive alignment to CP	Mana Whenua	-	-	
		Mauri, mana o ngā wai - Receiving waters + -	20%	4 - Moderate positive / well mitigated CP	Mana Whenua	-	-	
		Mauri o ngā taonga uku iho - Biodiversity, ecology, atmosphere + -	20%	3 - Neutral/ balanced 2 - Minor adverse (mitigation required to CP) 1 - Significant adverse on CP 0 - Severe cultural conflicts / impacts on CP	Mana Whenua	-	-	
		Ngā rauemi / putea - Infrastructure investment	20%		Mana Whenua	-	-	
		Te Ture Whaimana & Te Mana o Te Wai		The option could be acceptable to iwi as: It will contribute to the restoration and protection of the Waikato River. It will contribute to the restoration and protection of the relationship of the Waikato River, including economic, social, cultural, and spiritual relationships. It will contribute to the overall betterment of the Waikato River Catchment and to achiew the Vision & Strategy for the Waikato. The option would not undermine, or would not have any adverse effect on Te Ture Whaimana Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact	Mana Whenua	-	-	
		Heritage		Would effects on the below prevent the project going ahead? Site and places of cultural value. Sites and places of archaeological value. Sites and palces of valued heritage buildings, trees (with heritage values) and places. Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact"	Mana Whenua	-	-	
		Sub Total	**20%**					
Social Impact (Long term)	10%	Landscape effects	20%	Score 6 - 7 Low impact on landform and vegetation with opportunities for mitigation (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on landform and vegetation with possible opportunities for mitigation. Score 1 - 2 Very high to significant impact on landform and vegetation and limited opportunities for mitigation.	Boffa Miskel	-	-	
		Visual Effects	40%	Score 6 - 7 Low impact on visual amenity with opportunities for screening (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on visual amenity with possible opportunities for screening. Score 1 - 2 Very high to significant impact on visual amenity and limited opportunities for screening.	Boffa Miskel	-	-	
		Social Cohesion (operational)	20%	Score 6 - 7 No to low impact on social cohesion including connectivity and accesss to open space. Score 3 - 5 Moderate to high impact on social cohesion including connectivity and access to open space. Score 1 - 2 Significant impact on social cohesion including connectivity and access to open space.	Mott MacDonald - Planning HCC - Planning	-	-	
		Human health and Wellbeing	20%	Score 6 - 7 Nil to low impact on health and well-being. Score 3 - 5 Moderate to high impact on health and wellbeing. Score 1 - 2 Significant impact on health and wellbeing.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Environmental	10%	Ecology	50%	Score 6 - 7 No trees cleared or any at risk species removal avoided or relocated (6) and opportunities for ecological enhancement and net positive effects (7). Score 3 - 5 Indigenous or at-risk species present with moderate to minor potential habitat or tree clearance resulting in moderate ecological effects. Score 1 - 2 Indigenous or at-risk species present with significant to large potential habitat or tree clearance resulting in significant ecological effects.	Mott MacDonald - Planning HCC - Planning	-	-	
		Earthworks	25%	Score 7 - No terrain or topography issues, requiring negligible earthworks or no cut to waste volumes. Less than 1000m3. Score 5 - 6 - Some terrain or topography issues requiring some earthworks Some cut to waste volumes 1000m3 to 2000m3. Score 3 - 4 - Moderate terrain or topography issues, requiring moderate earthworks. moderate cut to waste volumes. 2000m3 to 3000m3. Score 1 - 2 - Significant terrain or topogsphy issues, requiring significant earthworks, retaining structures resulting in high cut to waste volumes. Over 3000m3.	Mott MacDonald - Engineering	7	2	**Option A - Bowling Club Site** Flat terrain requiring low to negleglble earthworks. Negligible cut to waste volumes. **Option B - Hillcrest Park** Sloping terrain and topography requiring earthworks of approxomately 3600m3 for reservoir installation.
		Pre/post development considerations	25%	Score 6 - 7 - Negligible to low pre/post development changes to site. Score 3 - 5 - Low to moderate pre/post development changes to site. Score 1 - 2 - Moderate to significant pre/post development changes to site.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Planning Risk	5%	Land use restrictions	100%	Score 6 - 7 - Negligible to low land use restrictions impacting consentability. Score 3 - 5 - Moderate land use restrictions impacting consentability. Score 1 - 2 - Significant to major land use restrictions impacting consentability.	Mott MacDonald - Planning HCC - Planning	-	-	
-	-	**Sub Total**	**100%**					
Constructability (Short term)	5%	Impacts during construction staging (Phase Plan)	10%	Score 6 - 7 - Construction staging straightforward, site offers higher flexibility around construction staging. Score 3 - 5 - Low to moderate complexity in construction staging. Score 1 - 2 - Moderate to very high complexity in consttuction staging due to existing infrastructure, level of temporary works required etc.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	6	**Option A - Bowling Club Site** The proximity of proposed reservoir to adjacent residential properties (with limited set back distances) restricts movement of construction machinery, area available for material storage, space for construction activities and machinery. This increases the need for sequenced works, staging and more planning. **Option B - Hillcrest Park** Ample open space enabling flexibility for construction sequencing, storage areas, vehicle and machinery movement.
		Critical design uncertainties/ adaptability	20%	Score 6 - 7 - No to low design uncertainties. Score 3 - 5 - Low to moderate design uncertainties, site less constrained to carry out further investigations. Score 1 - 2 - High design uncertainties, site constrained to carry out initial investigations.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	5	4	**Option A - Bowling Club Site** consideration includes for bulk and trunk watermain pipe installation and pump station construction as well as just the reservoir structure itself. Less uncertainty as existing facilities are there **Option B - Hillcrest Park** consideration includes for bulk and trunk watermain pipe installation and pump station construction as well as just the reservoir structure itself.
		Main site access	20%	Score 6 - 7 - Site easily accessible with minimal disruption, located away from busy intersections or residential zones. Score 3 - 5 - Site access causes a moderate level of disruption due to surrounding land use/residential area. Score 1 - 2 - Site access caused high to significant level of disruption, located in dense residential area or near busy intersections.	Mott MacDonald - Engineering BBO - Transport Team HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	5	**Option A - Bowling Club Site** Access into the site constrained requiring negotiation with neighbouring properties for temporary access. Not many options for alternative access routes. **Option B - Hillcrest Park** Multiple options for construction vehicle access and vehicle movement.
		Public Distruption	15%	Score 6 - 7 - Low short-term impact. Site well-separated from residential properties and businesses and other sensitive receptors. Score 3 - 5 - Moderate short-term impact. Some disruption due to proximity of residential properties and businesses and other sensitive receptors. Score 1 - 2 - High to significant short-term impact due to dense residential surroundings and/or type of construction activity being more complex.	HCC - Planning Vibration and noise consultant (BBO consultant)	-	-	
		Traffic management requirements	20%	Score 6 - 7 - Traffic management requirements are simple and/or localised. Score 3 - 5 - Traffic management requirements are moderately complex and of moderate scale. Score 1 - 2 - Traffic management requirements are highly complex and widespread.	Mott MacDonald - Engineering Mott MacDonald - Planning HCC - Planning BBO - Transport	3	2	**Option A - Bowling Club Site** Area surrounded by residential properties, construction of trunk and bulk main through multiple intersections. The traffic management is expected to be moderately complex and of moderate scale. **Option B - Hillcrest Park** Construction of trunk and bulk main through multiple intersections. The traffic management is expected to be more wodespread due to the lengths of trunk and bulk main.
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	Score 6 - 7 - Less than 1km pipeline construction length. Score 3 - 5 - Between 1km and 2km of pipeline construction length. Score 1 - 2 - Greater than 2km.	Mott MacDonald - Engineering	5	2	**Option A - Bowling Club Site** This option requires a total of 1.0km of new bulk and trunk main construction, receiving a score of 5. **Option B - Hillcrest Park Site** This option requires a total of 2.2km of new bulk and trunk main construction, receiving a score of 2.
		Sub Total	**100%**					
Total Score		**Total Score**						

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Approved by:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework- Scoring and Commentary Template
Scored By:	MM Planning

Project Manager: Kat Jackson
Project Director: Blair Telfer

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Scoring Matrix	Scoring Team	Option A (111 Cambridge Road - Bowling Club Site)	Option B (Hillcrest Park)	Justification/Site Specific Comments
Operations	30%	Pump and pump station complexity or scale	45%	Score 6 - 7 Pump size less than 100 kW Score 3 - 5 Pump size between 100 kW to 200 kW Score 1 - 2 Pump size greater than 200 kW	Mott MacDonald - Engineering	-	-	
		Accessibility, including access to infrastructure for maintenance (sludge removal etc.)	10%	Score 6 - 7 Limited accessibility constraints. Score 3 - 5 Moderate accessibility constraints. Score 1 - 2 High to significant accessibility constraints.	HCC - Operations HCC - Maintenance HCC - Owner	-	-	
		Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	30%	Score 6 - 7 Less than 1km pipeline construction length. Score 3 - 5 Between 1km and 2km of pipeline construction length. Score 1 - 2 Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Facility operation impacts	15%	Score 6 - 7 No or low operational impact. Located away from residential properties. Score 3 - 5 Moderate to high operational impact, but manageable with mitigation. Score 1 - 2 High to significant operational impact resulting in public opposition.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	
		Sub Total	**100%**					
Resilience	20%	Network resilience (short term)	20%	Score 6-7 Less than 2,000 properties have pressure < 100 kPa (this is emergency supply consideration) during pump station out of service. Scores 3-5 2,000 - 5,000 properties have pressure < 100 kPa (this is emergency supply consideration) during pump station out of service. Score 1-2 > 5000 properties have pressure < 100 kPa (this is emergency supply consideration) during pump station out of service.	Mott MacDonald - Engineering	-	-	
		Future proofing	50%	Score 6 - 7 Sufficient space available for a second reservoir or expansion to meet demands beyond 2061 projections. Requires acquisition of more public/green spaces. Scores 3 - 5 Site constrained by space and zoning. Requires acquisition of more residential/private properties. Score 1 - 2 No viable space or planning provision for future expansion.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	
		Geotechnical resilience	30%	Score 6 - 7 Alleviated of rolling hill with gentle slope gradient, very shallow instability features - no large-scale historical slips or evidence of other shallow rotational features during site walkover or from historical aerial photos. Score 3 - 5 Low-lying landform, with minor undulations and hummocky ground, requires detailed assessments. Score 1 - 2 Identified or obvious geohazard, including but not limited to gully head and scarp, erosional features and surface tension cracks, requires engineering intervention such as ground improvement.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Mana Whenua	20%	Whakapapa - Heritage, historical connection to site	20%	Avoid impacts on wāhi tapu, wāhi whakahirahira, wāhi tupuna and mahinga kai, while maintaining and enhancing the mauri of whakapapa, whenua, wai, ngā taonga, me ngā tāngata a te hāpori. Scoring T - Transformational enhancement / restores mauri (and CP) A- Very strong positive alignments to CP C- Strong positive alignment to CP M- Moderate positive / well mitigated CP N - Neutral/ balanced P- Minor adverse (mitigation required to CP) I - Significant adverse on CP D - Severe cultural conflicts / impacts on CP	Mana Whenua	-	-	
		Mauri mana o te whenua - Lands, current ,previous use	20%		Mana Whenua	-	-	
		Mauri, mana o ngā wai- Receiving waters + -	20%		Mana Whenua	-	-	
		Mauri o ngā taonga oku ihu - Biodiversity, ecology, atmosphere + -	20%		Mana Whenua	-	-	
		Ngā rauemi / pukea - Infrastructure investment	20%		Mana Whenua	-	-	
		Te Ture Whaimana & Te Mana o Te Wai		The option could be acceptable to iwi as: It will contribute to the restoration and protection of the Waikato River. It will contribute to the restoration and protection of the relationship of the Waikato River, including economic, social, cultural, and spiritual relationships. It will contribute to the overall betterment of the Waikato River Catchment and to achieve the Vision & Strategy for the Waikato. The option would not undermine, or would not have any adverse effect on Te Ture Whaimana Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact	Mana Whenua	-	-	
		Heritage		Would effects on the below prevent the project going ahead? Site and places of cultural value. Sites and places of archaeological value. Sites and pales of valued heritage buildings, trees (with heritage values) and places. Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact"	Mana Whenua	-	-	
		Sub Total	**20%**					
Social Impact (Long term)	10%	Landscape effects	20%	Score 6 - 7 Low impact on landform and vegetation with opportunities for mitigation (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on landform and vegetation with possible opportunities for mitigation. Score 1 - 2 Very high to significant impact on landform and vegetation and limited opportunities for mitigation.	Beffa Miskel	-	-	
		Visual Effects	40%	Score 6 - 7 Low impact on visual amenity with opportunities for screening (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on visual amenity with possible opportunities for screening. Score 1 - 2 Very high to significant impact on visual amenity and limited opportunities for screening.	Beffa Miskel	-	-	
		Social Cohesion (operational)	20%	Score 6 - 7 No to low impact on social cohesion including connectivity and access to open space. Score 3 - 5 Moderate to high impact on social cohesion including connectivity and access to open space. Score 1 - 2 Significant impact on social cohesion including connectivity and access to open space.	Mott MacDonald - Planning HCC - Planning	7	3	A •The old bowling club portion of the site was used as a bowling club and included three greens, a clubhouse, parking area. •According to historical records and images included in PDP's PSI, the bowling club building and carpark and bowling greens are present on the site in 1953. •The bowling green clubhouse was demolished in January 2026 and was derelict and vacant for some time prior to this. •Since bowling club house demolition, the site has been used for some temporary, ad hoc car parking for surrounding residents and the child care centre at the front of the site. •Development of a reservoir on site will have negligible impact on social cohesion as the current reservoir site is already used for water storage with limited public access. •Access to the site is up a right of way between a residential property and a daycare centre. There is no thoroughfare through the site at all. B •Access to Hillcrest Park is impacted throughout construction and also long term. •Pedestrian access in to the park and movement through the park with the development of the reservoir will be compromised throughout construction. •Pedestrian detours would be likely. Desire lines through the park and possibly on adjacent streets will be affected for everyday trips to schools, shops of places of employment. •A new, large reservoir and its ancillary infrastructure such as pump station will create physical barriers to certain parts of the park. Pump stations and other structures will be required to be fenced, even if the reservoir itself wouldn't be. •Permanent loss of the use of the open space for the enjoyment of the community. •Potential, or potential for, perceived reduction in safety with the development of the large reservoir with behaviours like tagging for example making people unsafe in their local park. •Impact on the playground in the park in terms of access and safety. •The reservoir is visually dominant in the open space area and out of character with the park and residential houses surrounding the park. •The park is a long standing community asset, potentially a place for community and sports events, and a place for social interaction. This will be reduced with the development of a reservoir.
		Human health and Wellbeing	20%	Score 6 - 7 Nil to low impact on health and well-being. Score 3 - 5 Moderate to high impact on health and wellbeing. Score 1 - 2 Significant impact on health and wellbeing.	Mott MacDonald - Planning HCC - Planning	5	2	A Reservoir in very close proximity to residential sensitive receivers. Fences and existing and future landscaping and vegetation in place to mitigate aesthetic effects on those residents. The current site has a reservoir on a portion of the site already so a new reservoir would align with the existing purpose of the site. Any noise associated with the operation of the reservoir would also be of a similar nature to the current reservoir on site. Surrounding properties primarily don't look over the proposed site. B Reservoir development in close proximity to residential sensitive receivers. Some properties look over the park. Loss of recreation and community space. Existing purpose of the site is not aligned to a water reservoir. Impact on wellbeing for current park users and surrounding community highly compromised.
		Sub Total	**100%**					
Environmental	10%	Ecology	50%	Score 6 - 7 No trees cleared or any at risk species removal avoided or relocated (6) and opportunities for ecological enhancement and net positive effects (7). Score 3 - 5 Indigenous or at-risk species present with moderate to minor potential habitat or tree clearance resulting in moderate ecological effects Score 1 - 2 Indigenous or at-risk species present with significant to large potential habitat or tree clearance resulting in significant ecological effects.	Mott MacDonald - Planning HCC - Planning	7	4	A •Ecological effects of the construction and long term operation of the proposed reservoir are very low. •No notable trees or other trees will be removed. •The space has low ecological value due to the presence of bowling greens over the last 50 + years. B •The Hillcrest Park site has large mature trees that may require removal or pruning or works within the drip line to enable construction. Potential for long-tailed bat habitat in these trees or the trees in the significant natural area adjacent to the proposed site. •Terrestrial (lizards). This criteria has not been assessed as an ecologist hasn't been engaged at this point but could be in future if HCC deems it is required as a differentiating factor between the sites. •Potential effects of construction on lizards include loss of habitat, disturbance and indigenous lizard injury or death due to vegetation clearance and construction. •A Significant Natural Area is in Hillcrest Park close to the proposed reservoir site. Although this is not being directly disturbed.
		Earthworks	25%	Score 7 - No terrain or topography issues, requiring negligible earthworks or no cut to waste volumes. Less than 1000m3. Scores 5 - 6 - Some terrain or topography issues requiring some earthworks Some cut to waste volumes 1000m3 to 2000m3. Scores 3 - 4 - Moderate terrain or topography issues, requiring moderate earthworks. moderate cut to waste volumes. 2000m3 to 3000m3. Scores 1 - 2 - Significant terrain or topography issues, requiring significant earthworks, retaining structures resulting in high cut to waste volumes. Over 3000m3.	Mott MacDonald - Engineering	-	-	
		Predpost development considerations	25%	Score 6 - 7 - Negligible to low pre/post development changes to site. Score 3 - 5 - Low to moderate pre/post development changes to site. Score 1 - 2 - Moderate to significant pre/post development changes to site.	Mott MacDonald - Planning HCC - Planning	6	2	A Proposed works aligned to the existing purpose of some of the site. There is currently no public use of the site and post development would remain the same. B The proposed reservoir would impact the site significantly, by reducing public space for the public to enjoy and the scale of the infrastructure on site.
		Sub Total	**100%**					
Planning Risk	5%	Land use restrictions	100%	Score 6 - 7 - Negligible to low land use restrictions impacting consentability. Score 3 - 5 - Moderate land use restrictions impacting consentability. Score 1 - 2 - Significant to major land use restrictions impacting consentability.	Mott MacDonald - Planning HCC - Planning	5	2	A •Designation A65 Water Reservoir (Cambridge Road) •The proposed works will be aligned with the existing purpose of the site (partially). •Using the site at 111 Cambridge Road would require an alteration to the designation boundary. •There are no notable features on or adjacent to the site or any land use restrictions from a resource management perspective. •EQ undertaken at 111 Cambridge Road to determine the possibly presence of contaminants. •The site has been utilised as a sports turf (HAIL Activity A10) due to the possible bulk storage and/or application of persistent pesticides. Contaminants may include heavy metals (arsenic, copper, lead and mercury) and organochlorine pesticides. Further investigations such as a soil sampling were recommended to be undertaken prior to any soil disturbance. •Depending on the findings of the additional work (DSI), a site management plan may need to be prepared and specific measures undertaken including approved handling and separation procedures, restricting reuse of excavated materials, dust and air quality management and health and safety controls. Any contamination effects would be limited to the construction period and managed accordingly. •No flooding risk identified on the site. B •The Reserves Act status of the Hillcrest Park site is the notable land use restriction for that site. •Water reservoirs and associated infrastructure cannot be developed on this Recreation Reserve so the site would require revocation or reclassifying and possibly a reserve exchange with another piece of land. •Would require NOR designation process. •Hillcrest Park has a Significant Natural Area within the Park (F13 – Hillcrest Kahikatea, SNA - ISNA). ISNA is a distinct area of wetland or terrestrial vegetation communities dominated by naturally occurring indigenous plant communities. •No HAIL activity identified on site at this time on HCC's records. •Site has been identified as having low level of flooding risk in a 1-100 year event. The floodviewer identies the 'hazard level for this location is considered as 'Low'
-	-	**Sub Total**	**100%**					
Constructability (Short term)	5%	Impacts during construction staging (Phase Plan)	10%	Score 6 - 7 - Construction staging straightforward, site offers higher flexibility around construction staging. Score 3 - 5 - Low to moderate complexity in construction staging. Score 1 - 2 - Moderate to very high complexity in construction staging due to existing infrastructure, level of temporary works required etc.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	
		Critical design uncertainties/ adaptability	20%	Score 6 - 7 - No to low design uncertainties. Score 3 - 5 - Low to moderate design uncertainties, site less constrained to carry out further investigations. Score 1 - 2 - High design uncertainties, site constrained to carry out initial investigations.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	
		Main site access	20%	Score 6 - 7 - Site easily accessible with minimal disruption, located away from busy intersections or residential zones. Score 3 - 5 - Site access causes a moderate level of disruption due to surrounding land use/residential area. Score 1 - 2 - Site access caused high to significant level of disruption, located in dense residential area or near busy intersections.	Mott MacDonald - Engineering BBO - Transport Team HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	
		Public Disruption	15%	Score 6 - 7 - Low short-term impact. Site well-separated from residential properties and businesses and other sensitive receptors. Score 3 - 5 - Moderate short-term impact. Some disruption due to proximity of residential properties and businesses and other sensitive receptors. Score 1 - 2 - High to significant short-term impact due to dense residential surroundings and/or type of construction activity being more complex.	HCC - Planning Vibration and noise consultant (BBO consultant)	3	2	A •Dust is a potential effect. •There are approximately 15 properties directly adjacent to the site. •The surrounding residential properties are in very close proximity to the proposed site so noise and dust have potential to be an issue for these surrounding residents. •There are a number of local businesses that have the potential to lose some car parking and/or business throughout construction, depending on access restrictions. •There is a kindergarden directly adjacent to the site which will be hugely affected by the noise and possibly loss of parking. B •Dust is a potential effect. •A number of residential properties face the park so noise and dust have the potential to cause disruption. Mitigation measures will alleviate some of that. •There are no local businesses surrounding the site although access to some portions of the park will be restricted throughout construction. •It is likely that the whole of the the accessway from Mansel Avenue would be closed throughout the construction period. •There is a kindergarden directly adjacent to the site which will be hugely affected by the noise.
		Traffic management requirements	20%	Score 6 - 7 - Traffic management requirements are simple and/or localised. Score 3 - 5 - Traffic management requirements are moderately complex and of moderate scale. Score 1 - 2 - Traffic management requirements are highly complex and widespread.	Mott MacDonald - Engineering Mott MacDonald - Planning HCC - Planning BBO - Transport	4	3	A Cambridge Road is a fairly high traffic area and any traffic management for large vehicle access has the potential to be disruptive at a localised level but for a long duration. B Hillcrest Road is not a high traffic area (to be confirmed by traffic specialists) and traffic management would be localised however the additional pipe length and managing public access around a large park requires high levels of management.
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	Score 6 - 7 - Less than 1km pipeline construction length. Score 3 - 5 - Between 1km and 2km of pipeline construction length. Score 1 - 2 - Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Total Score		**Total Score**						

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Approved by:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework - Scoring and Commentary Template

Project Manager: Kat Jackson
Project Director: Blair Telfer

MOTT MACDONALD

Scored By: HCC Operations - Gary Pitcaithly

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Scoring Matrix	Scoring Team	Option A (111 Cambridge Road - Bowling Club Site)	Option B (Hillcrest Park)	Justification/Site Specific Comments
Operations	30%	Pump and pump station complexity or scale	45%	Score 6 - 7 Pump size less than 100 kW Score 3 - 5 Pump size between 100 kW to 200 kW Score 1 - 2 Pump size greater than 200 kW	Mott MacDonald - Engineering	-	-	
		Accessibility, including access to infrastructure for maintenance (sludge removal etc.)	10%	Score 6 - 7 Limited accessibility constraints. Score 3 - 5 Moderate accessibility constraints. Score 1 - 2 High to significant accessibility constraints.	HCC - Operations HCC - Maintenance HCC - Owner	5	6	A lot harder to get all the way around option A
		Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	30%	Score 6 - 7 Less than 1km pipeline construction length. Score 3 - 5 Between 1km and 2km of pipeline construction length. Score 1 - 2 Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Facility operation impacts	15%	Score 6 - 7 No or low operational impact. Located away from residential properties. Score 3 - 5 Moderate to high operational impact, but manageable with mitigation. Score 1 - 2 High to significant operational impact resulting in public opposition.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	4	6	Option A very close to Neighbours, may cause a big shadow mainly on the one with the pool
		Sub Total	**100%**					
Resilience	20%	Network resilience (short term)	20%	Score 6-7 Less than 2,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Scores 3-5 2,000 - 5,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Score 1-2 > 5000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service.	Mott MacDonald - Engineering	-	-	
		Future proofing	50%	Score 6 - 7 Sufficient space available for a second reservoir or expansion to meet demands beyond 2061 projections. Requires acquisition of more public/green spaces. Scores 3 - 5 Site constrained by space and zoning. Requires acquisition of more residential/private properties. Score 1 - 2 No viable space or planning provision for future expansion.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	2	6	Option A Has very little space at all, looking at the layout if land was purchased that land may be on a the side of the hill.
		Geotechnical resilience	30%	Score 6 - 7 Atop/crest of rolling hill with gentle slope gradient, very shallow instability features – no large-scale historical slips or evidence of other shallow rotational features during site walkover or from historical aerial photos. Score 3 - 5 Low-lying landform, with minor undulations and hummocky ground, requires detailed assessments. Score 1 - 2 Identified or obvious geohazard, including but not limited to gully head and scarp, erosional features and surface tension cracks, requires engineering intervention such as ground improvement.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Mana Whenua	20%	Whakapapa – Heritage, historical connection to site	20%	Avoid impacts on wāhi tapu, wāhi whakahirahira, wāhi tupuna and mahinga kai, while maintaining and enhancing the mauri of whakapapa, whenua, wai, ngā taonga, me ngā tāngata o te hāpori. Scoring	Mana Whenua	-	-	
		Mauri mana o te whenua - Lands, current, previous use	20%	7 - Transformational enhancement / restores mauri (and CP) 6 - Very strong positive alignments to CP	Mana Whenua	-	-	
		Mauri, mana o ngā wai - Receiving waters + -	20%	5 - Strong positive alignment to CP 4 - Moderate positive / well mitigated CP	Mana Whenua	-	-	
		Mauri o ngā taonga uku iho - Biodiversity, ecology, atmosphere + -	20%	3 - Neutral/ balanced 2 - Minor adverse (mitigation required to CP) 1 - Significant adverse on CP	Mana Whenua	-	-	
		Ngā rauemi / putea - Infrastructure investment	20%	0 - Severe cultural conflicts / impacts on CP	Mana Whenua	-	-	
		Te Ture Whaimana & Te Mana o Te Wai		The option could be acceptable to iwi as: It will contribute to the restoration and protection of the Waikato River. It will contribute to the restoration and protection of the relationship of the Waikato River, including economic, social, cultural, and spiritual relationships. It will contribute to the overall betterment of the Waikato River Catchment and to achieve the Vision & Strategy for the Waikato. The option would not undermine, or would not have any adverse effect on Te Ture Whaimana Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact	Mana Whenua	-	-	
		Heritage		Would effects on the below prevent the project going ahead? Site and places of cultural value. Sites and places of archaeological value. Sites and palces of valued heritage buildings, trees (with heritage values) and places. Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact"	Mana Whenua	-	-	
		Sub Total	**20%**					
Social Impact (Long term)	10%	Landscape effects	20%	Score 6 - 7 Low impact on landform and vegetation with opportunities for mitigation (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on landform and vegetation with possible opportunities for mitigation. Score 1 - 2 Very high to significant impact on landform and vegetation and limited opportunities for mitigation.	Boffa Miskell	-	-	
		Visual Effects	40%	Score 6 - 7 Low impact on visual amenity with opportunities for screening (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on visual amenity with possible opportunities for screening. Score 1 - 2 Very high to significant impact on visual amenity and limited opportunities for screening.	Boffa Miskel	-	-	
		Social Cohesion (operational)	20%	Score 6 - 7 No to low impact on social cohesion including connectivity and access to open space. Score 3 - 5 Moderate to high impact on social cohesion including connectivity and access to open space. Score 1 - 2 Significant impact on social cohesion including connectivity and access to open space.	Mott MacDonald - Planning HCC - Planning	-	-	
		Human health and Wellbeing	20%	Score 6 - 7 Nil to low impact on health and well-being. Score 3 - 5 Moderate to high impact on health and wellbeing. Score 1 - 2 Significant impact on health and wellbeing.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Environmental	10%	Ecology	50%	Score 6 - 7 No trees cleared or any at risk species removal avoided or relocated (6) and opportunities for ecological enhancement and net positive effects (7). Score 3 - 5 Indigenous or at-risk species present with moderate to minor potential habitat or tree clearance resulting in moderate ecological effects. Score 1 - 2 Indigenous or at-risk species present with significant to large potential habitat or tree clearance resulting in significant ecological effects.	Mott MacDonald - Planning HCC - Planning	-	-	
		Earthworks	25%	Score 7 - No terrain or topography issues, requiring negligible earthworks or no cut to waste volumes. Less than 1000m3. Score 5 -6 - Some terrain or topography issues requiring some earthworks Some cut to waste volumes 1000m3 to 2000m3. Score 3 - 4 - Moderate terrain or topography issues, requiring moderate earthworks. moderate cut to waste volumes. 2000m3 to 3000m3. Score 1 - 2 - Significant terrain or topography issues, requiring significant earthworks, retaining structures resulting in high cut to waste volumes. Over 3000m3.	Mott MacDonald - Engineering	-	-	
		Pre/post development considerations	25%	Score 6 - 7 - Negligible to low pre/post development changes to site. Score 3 - 5 - Low to moderate pre/post development changes to site. Score 1 - 2 - Moderate to significant pre/post development changes to site.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Planning Risk	5%	Land use restrictions	100%	Score 6 - 7 - Negligible to low land use restrictions impacting consentability. Score 3 - 5 - Moderate land use restrictions impacting consentability. Score 1 - 2 - Significant to major land use restrictions impacting consentability.	Mott MacDonald - Planning HCC - Planning	-	-	
-	-	**Sub Total**	**100%**					
Constructability (Short term)	5%	Impacts during construction staging (Phase Plan)	10%	Score 6 - 7 - Construction staging straightforward, site offers higher flexibility around construction staging. Score 3 - 5 - Low to moderate complexity in construction staging. Score 1 - 2 - Moderate to very high complexity in constuction staging due to existing infrastructure, level of temporary works required etc.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	5	6	Option B has more access the A, plus not to close to houses for noise
		Critical design uncertainties/ adaptability	20%	Score 6 - 7 - No to low design uncertainties. Score 3 - 5 - Low to moderate design uncertainties, site less constrained to carry out further investigations. Score 1 - 2 - High design uncertainties, site constrained to carry out initial investigations.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	5	6	Need to check if planned reservoir size is big enough or needs resizing
		Main site access	20%	Score 6 - 7 - Site easily accessible with minimal disruption, located away from busy intersections or residential zones. Score 3 - 5 - Site access causes a moderate level of disruption due to surrounding land use/residential area. Score 1 - 2 - Site access caused high to significant level of disruption, located in dense residential area or near busy intersections.	Mott MacDonald - Engineering BBO - Transport Team HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	4	6	Option A off main road and driveway narrow, Option B not on main road, driveway can be a lot larger if required
		Public Distruption	15%	Score 6 - 7 - Low short-term impact. Site well-separated from residential properties and businesses and other sensitive receptors. Score 3 - 5 - Moderate short-term impact. Some disruption due to proximity of residential properties and businesses and other sensitive receptors. Score 1 - 2 – High to significant short-term impact due to dense residential surroundings and/or type of construction activity being more complex.	HCC - Planning Vibration and noise consultant (BBO consultant)	-	-	
		Traffic management requirements	20%	Score 6 - 7 - Traffic management requirements are simple and/or localised. Score 3 - 5 - Traffic management requirements are moderately complex and of moderate scale. Score 1 - 2 - Traffic management requirements are highly complex and widespread.	Mott MacDonald - Engineering Mott MacDonald - Planning HCC - Planning BBO - Transport	-	-	
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	Score 6 - 7 - Less than 1km pipeline construction length. Score 3 - 5 - Between 1km and 2km of pipeline construction length. Score 1 - 2 – Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Total Score		**Total Score**						

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Approved by:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework - Scoring and Commentary Template

Project Manager: Kat Jackson
Project Director: Blair Telfer

MOTT MACDONALD

Scored By: HCC Operations - Karl Hjelmstrom

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Scoring Matrix	Scoring Team	Option A (111 Cambridge Road - Bowling Club Site)	Option B (Hillcrest Park)	Justification/Site Specific Comments
Operations	30%	Pump and pump station complexity or scale	45%	Score 6 - 7 Pump size less than 100 kW Score 3 - 5 Pump size between 100 kW to 200 kW Score 1 - 2 Pump size greater than 200 kW	Mott MacDonald - Engineering	-	-	
		Accessibility, including access to infrastructure for maintenance (sludge removal etc.)	10%	Score 6 - 7 Limited accessibility constraints. Score 3 - 5 Moderate accessibility constraints. Score 1 - 2 High to significant accessibility constraints.	HCC - Operations HCC - Maintenance HCC - Owner	5	6	Option A certainly a lot more constrained due to property boundaries
		Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	30%	Score 6 - 7 Less than 1km pipeline construction length. Score 3 - 5 Between 1km and 2km of pipeline construction length. Score 1 - 2 Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Facility operation impacts	15%	Score 6 - 7 No or low operational impact. Located away from residential properties. Score 3 - 5 Moderate to high operational impact, but manageable with mitigation. Score 1 - 2 High to significant operational impact resulting in public opposition.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	4	6	Option A is very close to neighbouring properties, would be concerned about noise and shading of existing dwellings/structures
		Sub Total	**100%**					
Resilience	20%	Network resilience (short term)	20%	Score 6-7 Less than 2,000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service. Scores 3-5 2,000 - 5,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Score 1-2 > 5000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service.	Mott MacDonald - Engineering	-	-	
		Future proofing	50%	Score 6 - 7 Sufficient space available for a second reservoir or expansion to meet demands beyond 2061 projections. Requires acquisition of more public/green spaces. Scores 3 - 5 Site constrained by space and zoning. Requires acquisition of more residential/private properties. Score 1 - 2 No viable space or planning provision for future expansion.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	2	6	Option A has very little space to start with, unless consideration is made to Public Works Act.a lot of the surrounding properties there is no opportunity for expansion at all; Option B has enough space for future if agreeable with HCC
		Geotechnical resilience	30%	Score 6 - 7 Atop/crest of rolling hill with gentle slope gradient, very shallow instability features – no large-scale historical slips or evidence of other shallow rotational features during site walkover or from historical aerial photos. Score 3 - 5 Low-lying landform, with minor undulations and hummocky ground, requires detailed assessments. Score 1 - 2 Identified or obvious geohazard, including but not limited to gully head and scarp, erosional features and surface tension cracks, requires engineering intervention such as ground improvement.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Mana Whenua	20%	Whakapapa – Heritage, historical connection to site	20%	Avoid impacts on wāhi tapu, wāhi whakahirahira, wāhi tupuna and mahinga kai, while maintaining and enhancing the mauri of whakapapa, whenua, wai, ngā taonga, me ngā tāngata o te hāpori. Scoring	Mana Whenua	-	-	
		Mauri mana o te whenua - Lands, current, previous use	20%	7 - Transformational enhancement / restores mauri (and CP) 6 - Very strong positive alignments to CP	Mana Whenua	-	-	
		Mauri, mana o ngā wai - Receiving waters + -	20%	5 - Strong positive alignment to CP 4 - Moderate positive / well mitigated CP	Mana Whenua	-	-	
		Mauri o ngā taonga uku iho - Biodiversity, ecology, atmosphere + -	20%	3 - Neutral/ balanced 2 - Minor adverse (mitigation required to CP) 1 - Significant adverse on CP	Mana Whenua	-	-	
		Ngā rauemi / putea - Infrastructure investment	20%	0 - Severe cultural conflicts / impacts on CP	Mana Whenua	-	-	
		Te Ture Whaimana & Te Mana o Te Wai		The option could be acceptable to iwi as: It will contribute to the restoration and protection of the Waikato River. It will contribute to the restoration and protection of the relationship of the Waikato River, including economic, social, cultural, and spiritual relationships. It will contribute to the overall betterment of the Waikato River Catchment and to achieve the Vision & Strategy for the Waikato. The option would not undermine, or would not have any adverse effect on Te Ture Whaimana Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact	Mana Whenua	-	-	
		Heritage		Would effects on the below prevent the project going ahead? Site and places of cultural value. Sites and places of archaeological value. Sites and palces of valued heritage buildings, trees (with heritage values) and places. Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact"	Mana Whenua	-	-	
		Sub Total	**20%**					
Social Impact (Long term)	10%	Landscape effects	20%	Score 6 - 7 Low impact on landform and vegetation with opportunities for mitigation (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on landform and vegetation with possible opportunities for mitigation. Score 1 - 2 Very high to significant impact on landform and vegetation and limited opportunities for mitigation.	Boffa Miskel	-	-	
		Visual Effects	40%	Score 6 - 7 Low impact on visual amenity with opportunities for screening (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on visual amenity with possible opportunities for screening. Score 1 - 2 Very high to significant impact on visual amenity and limited opportunities for screening.	Boffa Miskel	-	-	
		Social Cohesion (operational)	20%	Score 6 - 7 No to low impact on social cohesion including connectivity and access to open space. Score 3 - 5 Moderate to high impact on social cohesion including connectivity and access to open space. Score 1 - 2 Significant impact on social cohesion including connectivity and access to open space.	Mott MacDonald - Planning HCC - Planning	-	-	
		Human health and Wellbeing	20%	Score 6 - 7 Nil to low impact on health and well-being. Score 3 - 5 Moderate to high impact on health and wellbeing. Score 1 - 2 Significant impact on health and wellbeing.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Environmental	10%	Ecology	50%	Score 6 - 7 No trees cleared or any at risk species removal avoided or relocated (6) and opportunities for ecological enhancement and net positive effects (7). Score 3 - 5 Indigenous or at-risk species present with moderate to minor potential habitat or tree clearance resulting in moderate ecological effects. Score 1 - 2 Indigenous or at-risk species present with significant to large potential habitat or tree clearance resulting in significant ecological effects.	Mott MacDonald - Planning HCC - Planning	-	-	
		Earthworks	25%	Score 7 - No terrain or topography issues, requiring negligible earthworks or no cut to waste volumes. Less than 1000m3. Score 5 -6 - Some terrain or topography issues requiring some earthworks Some cut to waste volumes 1000m3 to 2000m3. Score 3 - 4 - Moderate terrain or topography issues, requiring moderate earthworks. moderate cut to waste volumes. 2000m3 to 3000m3. Score 1 - 2 - Significant terrain or topography issues, requiring significant earthworks, retaining structures resulting in high cut to waste volumes. Over 3000m3.	Mott MacDonald - Engineering	-	-	
		Pre/post development considerations	25%	Score 6 - 7 - Negligible to low pre/post development changes to site. Score 3 - 5 - Low to moderate pre/post development changes to site. Score 1 - 2 - Moderate to significant pre/post development changes to site.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Planning Risk	5%	Land use restrictions	100%	Score 6 - 7 - Negligible to low land use restrictions impacting consentability. Score 3 - 5 - Moderate land use restrictions impacting consentability. Score 1 - 2 - Significant to major land use restrictions impacting consentability.	Mott MacDonald - Planning HCC - Planning	-	-	
-	-	**Sub Total**	**100%**					
Constructability (Short term)	5%	Impacts during construction staging (Phase Plan)	10%	Score 6 - 7 - Construction staging straightforward, site offers higher flexibility around construction staging. Score 3 - 5 - Low to moderate complexity in construction staging. Score 1 - 2 - Moderate to very high complexity in constructon staging due to existing infrastructure, level of temporary works required etc.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	6	This scoring reflects the harder access and tight space available at Option A
		Critical design uncertainties/ adaptability	20%	Score 6 - 7 - No to low design uncertainties. Score 3 - 5 - Low to moderate design uncertainties, site less constrained to carry out further investigations. Score 1 - 2 - High design uncertainties, site constrained to carry out initial investigations.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	5	6	Was a little unsure here....need to make sure sizing of reservoir is correct
		Main site access	20%	Score 6 - 7 - Site easily accessible with minimal disruption, located away from busy intersections or residential zones. Score 3 - 5 - Site access causes a moderate level of disruption due to surrounding land use/residential area. Score 1 - 2 - Site access caused high to significant level of disruption, located in dense residential area or near busy intersections.	Mott MacDonald - Engineering BBO - Transport Team HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	6	Option A will be difficult to access due to the nature of Hillcrest Road and that it is surrounded by houses; Option B will still have its challenges as Masters Ave is still busy but the Park is a bit more "out of the way"
		Public Distruption	15%	Score 6 - 7 - Low short-term impact. Site well-separated from residential properties and businesses and other sensitive receptors. Score 3 - 5 - Moderate short-term impact. Some disruption due to proximity of residential properties and businesses and other sensitive receptors. Score 1 - 2 – High to significant short-term impact due to dense residential surroundings and/or type of construction activity being more complex.	HCC - Planning Vibration and noise consultant (BBO consultant)	-	-	
		Traffic management requirements	20%	Score 6 - 7 - Traffic management requirements are simple and/or localised. Score 3 - 5 - Traffic management requirements are moderately complex and of moderate scale. Score 1 - 2 - Traffic management requirements are highly complex and widespread.	Mott MacDonald - Engineering Mott MacDonald - Planning HCC - Planning BBO - Transport	-	-	
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	Score 6 - 7 - Less than 1km pipeline construction length. Score 3 - 5 - Between 1km and 2km of pipeline construction length. Score 1 - 2 – Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Total Score		**Total Score**						

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Approved by:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework - Scoring and Commentary Template

Project Manager: Kat Jackson
Project Director: Blair Telfer

MOTT MACDONALD

Scored By: HCC Maintenance - Danny Rush

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Scoring Matrix	Scoring Team	Option A (111 Cambridge Road - Bowling Club Site)	Option B (Hillcrest Park)	Justification/Site Specific Comments
Operations	30%	Pump and pump station complexity or scale	45%	Score 6 - 7 Pump size less than 100 kW Score 3 - 5 Pump size between 100 kW to 200 kW Score 1 - 2 Pump size greater than 200 kW	Mott MacDonald - Engineering	-	-	
		Accessibility, including access to infrastructure for maintenance (sludge removal etc.)	10%	Score 6 - 7 Limited accessibility constraints. Score 3 - 5 Moderate accessibility constraints. Score 1 - 2 High to significant accessibility constraints.	HCC - Operations HCC - Maintenance HCC - Owner	5	6	Option A is far more constrained due to property boundaries
		Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	30%	Score 6 - 7 Less than 1km pipeline construction length. Score 3 - 5 Between 1km and 2km of pipeline construction length. Score 1 - 2 Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Facility operation impacts	15%	Score 6 - 7 No or low operational impact. Located away from residential properties. Score 3 - 5 Moderate to high operational impact, but manageable with mitigation. Score 1 - 2 High to significant operational impact resulting in public opposition.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	4	6	Option A is close to the neighbouring properties. Noise and shading of existing properties could turn into a point of contention with neighbours
		Sub Total	**100%**					
Resilience	20%	Network resilience (short term)	20%	Score 6-7 Less than 2,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Scores 3-5 2,000 - 5,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Score 1-2 > 5000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service.	Mott MacDonald - Engineering	-	-	
		Future proofing	50%	Score 6 - 7 Sufficient space available for a second reservoir or expansion to meet demands beyond 2061 projections. Requires acquisition of more public/green spaces. Scores 3 - 5 Site constrained by space and zoning. Requires acquisition of more residential/private properties. Score 1 - 2 No viable space or planning provision for future expansion.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	2	6	Option A has limited space for expansio or add ons. Option B has enough space for future expansion if required.
		Geotechnical resilience	30%	Score 6 - 7 Atop/crest of rolling hill with gentle slope gradient, very shallow instability features – no large-scale historical slips or evidence of other shallow rotational features during site walkover or from historical aerial photos. Score 3 - 5 Low-lying landform, with minor undulations and hummocky ground, requires detailed assessments. Score 1 - 2 Identified or obvious geohazard, including but not limited to gully head and scarp, erosional features and surface tension cracks, requires engineering intervention such as ground improvement.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Mana Whenua	20%	Whakapapa – Heritage, historical connection to site	20%	Avoid impacts on wāhi tapu, wāhi whakahirahira, wāhi tupuna and mahinga kai, while maintaining and enhancing the mauri of whakapapa, whenua, wai, ngā taonga, me ngā tāngata o te hāpori. Scoring	Mana Whenua	-	-	
		Mauri mana o te whenua - Lands, current, previous use	20%	7 - Transformational enhancement / restores mauri (and CP) 6 - Very strong positive alignments to CP	Mana Whenua	-	-	
		Mauri, mana o ngā wai - Receiving waters + -	20%	5 - Strong positive alignment to CP 4 - Moderate positive / well mitigated CP	Mana Whenua	-	-	
		Mauri o ngā taonga uku iho - Biodiversity, ecology, atmosphere + -	20%	3 - Neutral/ balanced 2 - Minor adverse (mitigation required to CP) 1 - Significant adverse on CP	Mana Whenua	-	-	
		Ngā rauemi / putea - Infrastructure investment	20%	0 - Severe cultural conflicts / impacts on CP	Mana Whenua	-	-	
		Te Ture Whaimana & Te Mana o Te Wai		The option could be acceptable to iwi as: It will contribute to the restoration and protection of the Waikato River. It will contribute to the restoration and protection of the relationship of the Waikato River, including economic, social, cultural, and spiritual relationships. It will contribute to the overall betterment of the Waikato River Catchment and to achieve the Vision & Strategy for the Waikato. The option would not undermine, or would not have any adverse effect on Te Ture Whaimana Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact	Mana Whenua	-	-	
		Heritage		Would effects on the below prevent the project going ahead? Site and places of cultural value. Sites and places of archaeological value. Sites and palces of valued heritage buildings, trees (with heritage values) and places. Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact"	Mana Whenua	-	-	
		Sub Total	**20%**					
Social Impact (Long term)	10%	Landscape effects	20%	Score 6 - 7 Low impact on landform and vegetation with opportunities for mitigation (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on landform and vegetation with possible opportunities for mitigation. Score 1 - 2 Very high to significant impact on landform and vegetation and limited opportunities for mitigation.	Boffa Miskell	-	-	
		Visual Effects	40%	Score 6 - 7 Low impact on visual amenity with opportunities for screening (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on visual amenity with possible opportunities for screening. Score 1 - 2 Very high to significant impact on visual amenity and limited opportunities for screening.	Boffa Miskel	-	-	
		Social Cohesion (operational)	20%	Score 6 - 7 No to low impact on social cohesion including connectivity and access to open space. Score 3 - 5 Moderate to high impact on social cohesion including connectivity and access to open space. Score 1 - 2 Significant impact on social cohesion including connectivity and access to open space.	Mott MacDonald - Planning HCC - Planning	-	-	
		Human health and Wellbeing	20%	Score 6 - 7 Nil to low impact on health and well-being. Score 3 - 5 Moderate to high impact on health and wellbeing. Score 1 - 2 Significant impact on health and wellbeing.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Environmental	10%	Ecology	50%	Score 6 - 7 No trees cleared or any at risk species removal avoided or relocated (6) and opportunities for ecological enhancement and net positive effects (7). Score 3 - 5 Indigenous or at-risk species present with moderate to minor potential habitat or tree clearance resulting in moderate ecological effects. Score 1 - 2 Indigenous or at-risk species present with significant to large potential habitat or tree clearance resulting in significant ecological effects.	Mott MacDonald - Planning HCC - Planning	-	-	
		Earthworks	25%	Score 7 - No terrain or topography issues, requiring negligible earthworks or no cut to waste volumes. Less than 1000m3. Score 5 -6 - Some terrain or topography issues requiring some earthworks Some cut to waste volumes 1000m3 to 2000m3. Score 3 - 4 - Moderate terrain or topography issues, requiring moderate earthworks. moderate cut to waste volumes. 2000m3 to 3000m3. Score 1 - 2 - Significant terrain or topography issues, requiring significant earthworks, retaining structures resulting in high cut to waste volumes. Over 3000m3.	Mott MacDonald - Engineering	-	-	
		Pre/post development considerations	25%	Score 6 - 7 - Negligible to low pre/post development changes to site. Score 3 - 5 - Low to moderate pre/post development changes to site. Score 1 - 2 - Moderate to significant pre/post development changes to site.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Planning Risk	5%	Land use restrictions	100%	Score 6 - 7 - Negligible to low land use restrictions impacting consentability. Score 3 - 5 - Moderate land use restrictions impacting consentability. Score 1 - 2 - Significant to major land use restrictions impacting consentability.	Mott MacDonald - Planning HCC - Planning	-	-	
-	-	**Sub Total**	**100%**					
Constructability (Short term)	5%	Impacts during construction staging (Phase Plan)	10%	Score 6 - 7 - Construction staging straightforward, site offers higher flexibility around construction staging. Score 3 - 5 - Low to moderate complexity in construction staging. Score 1 - 2 - Moderate to very high complexity in constructon staging due to existing infrastructure, level of temporary works required etc.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	6	Option A has tight access, closer neighbours and limited laydown area
		Critical design uncertainties/ adaptability	20%	Score 6 - 7 - No to low design uncertainties. Score 3 - 5 - Low to moderate design uncertainties, site less constrained to carry out further investigations. Score 1 - 2 - High design uncertainties, site constrained to carry out initial investigations.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	5	6	Make sure its big enough to cope with future demand
		Main site access	20%	Score 6 - 7 - Site easily accessible with minimal disruption, located away from busy intersections or residential zones. Score 3 - 5 - Site access causes a moderate level of disruption due to surrounding land use/residential area. Score 1 - 2 - Site access caused high to significant level of disruption, located in dense residential area or near busy intersections.	Mott MacDonald - Engineering BBO - Transport Team HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	6	Option A on a very busy road, Option B less busy but still a residential street
		Public Distruption	15%	Score 6 - 7 - Low short-term impact. Site well-separated from residential properties and businesses and other sensitive receptors. Score 3 - 5 - Moderate short-term impact. Some disruption due to proximity of residential properties and businesses and other sensitive receptors. Score 1 - 2 – High to significant short-term impact due to dense residential surroundings and/or type of construction activity being more complex.	HCC - Planning Vibration and noise consultant (BBO consultant)	-	-	
		Traffic management requirements	20%	Score 6 - 7 - Traffic management requirements are simple and/or localised. Score 3 - 5 - Traffic management requirements are moderately complex and of moderate scale. Score 1 - 2 - Traffic management requirements are highly complex and widespread.	Mott MacDonald - Engineering Mott MacDonald - Planning HCC - Planning BBO - Transport	-	-	
		GHG and Carbon Emissions based on length of new trunk and bulk main lenghts.	15%	Score 6 - 7 - Less than 1km pipeline construction length. Score 3 - 5 - Between 1km and 2km of pipeline construction length. Score 1 - 2 – Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Total Score		**Total Score**						

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Approved by:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework - Scoring and Commentary Template

Project Manager: Kat Jackson
Project Director: Blair Telfer

MOTT MACDONALD

Scored By: HCC Planning - Chris Dawson

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Scoring Matrix	Scoring Team	Option A (111 Cambridge Road - Bowling Club Site)	Option B (Hillcrest Park)	Justification/Site Specific Comments
Operations	30%	Pump and pump station complexity or scale	45%	Score 6 - 7 Pump size less than 100 kW Score 3 - 5 Pump size between 100 kW to 200 kW Score 1 - 2 Pump size greater than 200 kW	Mott MacDonald - Engineering	-	-	
		Accessibility, including access to infrastructure for maintenance (sludge removal etc.)	10%	Score 6 - 7 Limited accessibility constraints. Score 3 - 5 Moderate accessibility constraints. Score 1 - 2 High to significant accessibility constraints.	HCC - Operations HCC - Maintenance HCC - Owner	-	-	
		Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	30%	Score 6 - 7 Less than 1km pipeline construction length. Score 3 - 5 Between 1km and 2km of pipeline construction length. Score 1 - 2 Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Facility operation impacts	15%	Score 6 - 7 No or low operational impact. Located away from residential properties. Score 3 - 5 Moderate to high operational impact, but manageable with mitigation. Score 1 - 2 High to significant operational impact resulting in public opposition.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	5	6	A - very close to neighbours houses, operational after hours call outs may impact neighbours with lights and noise. B - low impact based on the valve chamber and other ancillary structures being located on the northern side of the reservoir and separated from the nearest neighbouring private properties.
		Sub Total	**100%**					
Resilience	20%	Network resilience (short term)	20%	Score 6-7 Less than 2,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Scores 3-5 2,000 - 5,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Score 1-2 > 5000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service.	Mott MacDonald - Engineering	-	-	
		Future proofing	50%	Score 6 - 7 Sufficient space available for a second reservoir or expansion to meet demands beyond 2061 projections. Requires acquisition of more public/green spaces. Scores 3 - 5 Site constrained by space and zoning. Requires acquisition of more residential/private properties. Score 1 - 2 No viable space or planning provision for future expansion.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	6	7	A - assumes two smaller reservoirs that can fit into the constrained space at Cambridge Road site. B - larger area and assumes that no constraints on future expansion aside from reserve requirements.
		Geotechnical resilience	30%	Score 6 - 7 Atop/crest of rolling hill with gentle slope gradient, very shallow instability features – no large-scale historical slips or evidence of other shallow rotational features during site walkover or from historical aerial photos. Score 3 - 5 Low-lying landform, with minor undulations and hummocky ground, requires detailed assessments. Score 1 - 2 Identified or obvious geohazard, including but not limited to gully head and scarp, erosional features and surface tension cracks, requires engineering intervention such as ground improvement.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Mana Whenua	20%	Whakapapa – Heritage, historical connection to site	20%	Avoid impacts on wāhi tapu, wāhi whakahirahira, wāhi tupuna and mahinga kai, while maintaining and enhancing the mauri of whakapapa, whenua, wai, ngā taonga, me ngā tāngata o te hāpori. Scoring	Mana Whenua	-	-	
		Mauri mana o te whenua - Lands, current, previous use	20%	7 - Transformational enhancement / restores mauri (and CP) 6 - Very strong positive alignments to CP	Mana Whenua	-	-	
		Mauri, mana o ngā wai - Receiving waters + -	20%	5 - Strong positive alignment to CP 4 - Moderate positive / well mitigated CP	Mana Whenua	-	-	
		Mauri o ngā taonga uku iho - Biodiversity, ecology, atmosphere + -	20%	3 - Neutral/ balanced 2 - Minor adverse (mitigation required to CP)	Mana Whenua	-	-	
		Ngā rauemi / putea - Infrastructure investment	20%	1 - Significant adverse on CP 0 - Severe cultural conflicts / impacts on CP	Mana Whenua	-	-	
		Te Ture Whaimana & Te Mana o Te Wai		The option could be acceptable to iwi as: It will contribute to the restoration and protection of the Waikato River. It will contribute to the restoration and protection of the relationship of the Waikato River, including economic, social, cultural, and spiritual relationships. It will contribute to the overall betterment of the Waikato River Catchment and to achieve the Vision & Strategy for the Waikato. The option would not undermine, or would not have any adverse effect on Te Ture Whaimana Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact	Mana Whenua	-	-	
		Heritage		Would effects on the below prevent the project going ahead? Site and places of cultural value. Sites and places of archaeological value. Sites and palces of valued heritage buildings, trees (with heritage values) and places. Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact"	Mana Whenua	-	-	
		Sub Total	**20%**					
Social Impact (Long term)	10%	Landscape effects	20%	Score 6 - 7 Low impact on landform and vegetation with opportunities for mitigation (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on landform and vegetation with possible opportunities for mitigation. Score 1 - 2 Very high to significant impact on landform and vegetation and limited opportunities for mitigation.	Boffa Miskel	-	-	
		Visual Effects	40%	Score 6 - 7 Low impact on visual amenity with opportunities for screening (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on visual amenity with possible opportunities for screening. Score 1 - 2 Very high to significant impact on visual amenity and limited opportunities for screening.	Boffa Miskel	-	-	
		Social Cohesion (operational)	20%	Score 6 - 7 No to low impact on social cohesion including connectivity and access to open space. Score 3 - 5 Moderate to high impact on social cohesion including connectivity and access to open space. Score 1 - 2 Significant impact on social cohesion including connectivity and access to open space.	Mott MacDonald - Planning HCC - Planning	7	2	A - No public interaction with the space at present so no impact. B - assumes reasonably high level of public use and impact on that use.
		Human health and Wellbeing	20%	Score 6 - 7 Nil to low impact on health and well-being. Score 3 - 5 Moderate to high impact on health and wellbeing. Score 1 - 2 Significant impact on health and wellbeing.	Mott MacDonald - Planning HCC - Planning	6	4	A - all surrounding houses face away from the site and the majority are screened by fences and/or vegetation. B - Hillcrest Park is well used and 4 of the surrounding houses have their primary view over the park.
		Sub Total	**100%**					
Environmental	10%	Ecology	50%	Score 6 - 7 No trees cleared or any at risk species removal avoided or relocated (6) and opportunities for ecological enhancement and net positive effects (7). Score 3 - 5 Indigenous or at-risk species present with moderate to minor potential habitat or tree clearance resulting in moderate ecological effects. Score 1 - 2 Indigenous or at-risk species present with significant to large potential habitat or tree clearance resulting in significant ecological effects.	Mott MacDonald - Planning HCC - Planning	7	5	A - assumes no ecological values present on site given previous use as a bowling club. B - assumes the need for some trimming of existing trees or earthworks within the dripline of those trees.
		Earthworks	25%	Score 7 - No terrain or topography issues, requiring negligible earthworks or no cut to waste volumes. Less than 1000m3. Score 5 -6 - Some terrain or topography issues requiring some earthworks Some cut to waste volumes 1000m3 to 2000m3. Score 3 - 4 - Moderate terrain or topography issues, requiring moderate earthworks. moderate cut to waste volumes. 2000m3 to 3000m3. Score 1 - 2 - Significant terrain or topography issues, requiring significant earthworks, retaining structures resulting in high cut to waste volumes. Over 3000m3.	Mott MacDonald - Engineering	-	-	
		Pre/post development considerations	25%	Score 6 - 7 - Negligible to low pre/post development changes to site. Score 3 - 5 - Low to moderate pre/post development changes to site. Score 1 - 2 - Moderate to significant pre/post development changes to site.	Mott MacDonald - Planning HCC - Planning	6	2	A - site is currently not accessible to the public and has zero public use. B - site is well used by the public as part of Hillcrest Park and this use would change significantly with the addition of a water reservoir and associated infrastructure and access on site.
		Sub Total	**100%**					
Planning Risk	5%	Land use restrictions	100%	Score 6 - 7 - Negligible to low land use restrictions impacting consentability. Score 3 - 5 - Moderate land use restrictions impacting consentability. Score 1 - 2 - Significant to major land use restrictions impacting consentability.	Mott MacDonald - Planning HCC - Planning	6	3	A - Reserves status only applies to part of the site and main part is not subject to Reserves Act process. Expect Reserves Act process to be relatively straight forward. B - Reserves Act status applies to entire site and is an actively used Recreation reserve, expect Reserves process to be challenged through the public submission phase.
-	-	**Sub Total**	**100%**					
Constructability (Short term)	5%	Impacts during construction staging (Phase Plan)	10%	Score 6 - 7 - Construction staging straightforward, site offers higher flexibility around construction staging. Score 3 - 5 - Low to moderate complexity in construction staging. Score 1 - 2 - Moderate to very high complexity in construction staging due to existing infrastructure, level of temporary works required etc.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	4	6	A - Moderate complexity, tight site with access challenges that will likely need some access for large loads over private rights of way and/or shifting of power lines. B - Site is large with easy access, however some site constraints including trees and main trunk Stormwater and Wastewater lines that need to be either avoided or shifted.
		Critical design uncertainties/ adaptability	20%	Score 6 - 7 - No to low design uncertainties. Score 3 - 5 - Low to moderate design uncertainties, site less constrained to carry out further investigations. Score 1 - 2 - High design uncertainties, site constrained to carry out initial investigations.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	6	4	T
		Main site access	20%	Score 6 - 7 - Site easily accessible with minimal disruption, located away from busy intersections or residential zones. Score 3 - 5 - Site access causes a moderate level of disruption due to surrounding land use/residential area. Score 1 - 2 - Site access caused high to significant level of disruption, located in dense residential area or near busy intersections.	Mott MacDonald - Engineering BBO - Transport Team HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	6	A - site access is tight and may need to utilise existing private right of way for large loads, expect Temporary Traffic Management Plan (TTMP) needed for all OW-OD loads. B - wide access of side road, able to get in and out at the same location, no power poles to shift.
		Public Distruption	15%	Score 6 - 7 - Low short-term impact. Site well-separated from residential properties and businesses and other sensitive receptors. Score 3 - 5 - Moderate short-term impact. Some disruption due to proximity of residential properties and businesses and other sensitive receptors. Score 1 - 2 – High to significant short-term impact due to dense residential surroundings and/or type of construction activity being more complex.	HCC - Planning Vibration and noise consultant (BBO consultant)	2	4	A - nearest houses are very close to reservoir position on site, potential noise and visual mitigation required for temporary construction effects. B - access to site is close to some houses and in primary view of 4 neighbouring houses and reservoir is below surrounding houses so potentially hard to screen.
		Traffic management requirements	20%	Score 6 - 7 - Traffic management requirements are simple and/or localised. Score 3 - 5 - Traffic management requirements are moderately complex and of moderate scale. Score 1 - 2 - Traffic management requirements are highly complex and widespread.	Mott MacDonald - Engineering Mott MacDonald - Planning HCC - Planning BBO - Transport	4	4	A - challenging access with TTMP needed for all large vehicles entering and exiting the site. B - relatively simple access, side road access with little to no traffic disruption expected.
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	Score 6 - 7 - Less than 1km pipeline construction length. Score 3 - 5 - Between 1km and 2km of pipeline construction length. Score 1 - 2 – Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Total Score		**Total Score**						

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Approved by:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework - Scoring and Commentary Template
Scored By:	HCC Planning - Nathanael Savage

Project Manager: Kat Jackson
Project Director: Blair Telfer

MOTT MACDONALD

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Scoring Matrix	Scoring Team	Option A (111 Cambridge Road - Bowling Club Site)	Option B (Hillcrest Park)	Justification/Site Specific Comments
Operations	30%	Pump and pump station complexity or scale	45%	Score 6 - 7 Pump size less than 100 kW Score 3 - 5 Pump size between 100 kW to 200 kW Score 1 - 2 Pump size greater than 200 kW	Mott MacDonald - Engineering	-	-	
		Accessibility, including access to infrastructure for maintenance (sludge removal etc.)	10%	Score 6 - 7 Limited accessibility constraints. Score 3 - 5 Moderate accessibility constraints. Score 1 - 2 High to significant accessibility constraints.	HCC - Operations HCC - Maintenance HCC - Owner	-	-	
		Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	30%	Score 6 - 7 Less than 1km pipeline construction length. Score 3 - 5 Between 1km and 2km of pipeline construction length. Score 1 - 2 Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Facility operation impacts	15%	Score 6 - 7 No or low operational impact. Located away from residential properties. Score 3 - 5 Moderate to high operational impact, but manageable with mitigation. Score 1 - 2 High to significant operational impact resulting in public opposition.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	4	6	Even though separation distances to infrastructure are greater for Option B (and to fewer) assumption should be that noise mitigation to boundary is to meet same requirements, this may mean that Option A mitigations are more and maintenance noise needs to be more managed. Assume no difference in amount / intensity of maintenance based on different sites. Option B benefits from vehicle access that is not shared with other users. Q: will maintenance activity for Option B create additional restrictions (temp) on access?
		Sub Total	**100%**					
Resilience	20%	Network resilience (short term)	20%	Score 6-7 Less than 2,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Scores 3-5 2,000 - 5,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Score 1-2 > 5000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service.	Mott MacDonald - Engineering	-	-	
		Future proofing	50%	Score 6 - 7 Sufficient space available for a second reservoir or expansion to meet demands beyond 2061 projections. Requires acquisition of more public/green spaces. Scores 3 - 5 Site constrained by space and zoning. Requires acquisition of more residential/private properties. Score 1 - 2 No viable space or planning provision for future expansion.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	4	6	Assume the same size/ shape? If so, won't fit on Option A? Option B to east or southwest, though pipes should be pushed north to make more room? Option B seems to have more physical space to accommodate without private land acquisition. Would expect Option A to require private land. Zoning both open space, though Option A might need to extend into residential zoning (adds complication but not significant). Option B would lose more (currently) usable recreational space so potential Reserves Act hurdle here again.
		Geotechnical resilience	30%	Score 6 - 7 Atop/crest of rolling hill with gentle slope gradient, very shallow instability features – no large-scale historical slips or evidence of other shallow rotational features during site walkover or from historical aerial photos. Score 3 - 5 Low-lying landform, with minor undulations and hummocky ground, requires detailed assessments. Score 1 - 2 Identified or obvious geohazard, including but not limited to gully head and scarp, erosional features and surface tension cracks, requires engineering intervention such as ground improvement.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Mana Whenua	20%	Whakapapa – Heritage, historical connection to site	20%	Avoid impacts on wāhi tapu, wāhi whakahirahira, wāhi tupuna and mahinga kai, while maintaining and enhancing the mauri of whakapapa, whenua, wai, ngā taonga, me ngā tāngata o te hāpori. Scoring	Mana Whenua	-	-	
		Mauri mana o te whenua - Lands, current, previous use	20%	7 - Transformational enhancement / restores mauri (and CP) 6 - Very strong positive alignments to CP	Mana Whenua	-	-	
		Mauri, mana o ngā wai - Receiving waters + -	20%	5 - Strong positive alignment to CP 4 - Moderate positive / well mitigated CP	Mana Whenua	-	-	
		Mauri o ngā taonga uku iho - Biodiversity, ecology, atmosphere + -	20%	3 - Neutral/ balanced 2 - Minor adverse (mitigation required to CP) 1 - Significant adverse on CP	Mana Whenua	-	-	
		Ngā rauemi / putea - Infrastructure investment	20%	0 - Severe cultural conflicts / impacts on CP	Mana Whenua	-	-	
		Te Ture Whaimana & Te Mana o Te Wai		The option could be acceptable to iwi as: It will contribute to the restoration and protection of the Waikato River. It will contribute to the restoration and protection of the relationship of the Waikato River, including economic, social, cultural, and spiritual relationships. It will contribute to the overall betterment of the Waikato River Catchment and to achieve the Vision & Strategy for the Waikato. The option would not undermine, or would not have any adverse effect on Te Ture Whaimana Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact	Mana Whenua	-	-	
		Heritage		Would effects on the below prevent the project going ahead? Site and places of cultural value. Sites and places of archaeological value. Sites and palces of valued heritage buildings, trees (with heritage values) and places. Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact"	Mana Whenua	-	-	
		Sub Total	**20%**					
Social Impact (Long term)	10%	Landscape effects	20%	Score 6 - 7 Low impact on landform and vegetation with opportunities for mitigation (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on landform and vegetation with possible opportunities for mitigation. Score 1 - 2 Very high to significant impact on landform and vegetation and limited opportunities for mitigation.	Boffa Miskel	-	-	
		Visual Effects	40%	Score 6 - 7 Low impact on visual amenity with opportunities for screening (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on visual amenity with possible opportunities for screening. Score 1 - 2 Very high to significant impact on visual amenity and limited opportunities for screening.	Boffa Miskel	-	-	
		Social Cohesion (operational)	20%	Score 6 - 7 No to low impact on social cohesion including connectivity and access to open space. Score 3 - 5 Moderate to high impact on social cohesion including connectivity and access to open space. Score 1 - 2 Significant impact on social cohesion including connectivity and access to open space.	Mott MacDonald - Planning HCC - Planning	7	4	Option A is effectively open space that is no longer publicly used (?) nor suitable for passive recreation (c.f. Option B). Option B site seems to disconnect parts of Hillcrest park (e.g. playground to the north almost severed from balance of park).
		Human health and Wellbeing	20%	Score 6 - 7 Nil to low impact on health and well-being. Score 3 - 5 Moderate to high impact on health and wellbeing. Score 1 - 2 Significant impact on health and wellbeing.	Mott MacDonald - Planning HCC - Planning	6	4	Option A is closer to sensitive residential receivers - similar considerations to Facility Operation impact effects, however these are mitigatable. Loss of recreational land for passive recreation (health / wellbeing, exercise) more prominent with Option B.
		Sub Total	**100%**					
Environmental	10%	Ecology	50%	Score 6 - 7 No trees cleared or any at risk species removal avoided or relocated (6) and opportunities for ecological enhancement and net positive effects (7). Score 3 - 5 Indigenous or at-risk species present with moderate to minor potential habitat or tree clearance resulting in moderate ecological effects. Score 1 - 2 Indigenous or at-risk species present with significant to large potential habitat or tree clearance resulting in significant ecological effects.	Mott MacDonald - Planning HCC - Planning	6	5	Option B loses trees and is proximity to an ecological site, though this brings an opportunity for additive ecological benefits through predator control, further planting. Option A existing site has no (?) value to lose, but appears to have limited opportunities for on-site enhancement - however, this ecological enhancement can be made off-site (e.g. at Option B site which is in close proximity) so Option A could go to 7.
		Earthworks	25%	Score 7 - No terrain or topography issues, requiring negligible earthworks or no cut to waste volumes. Less than 1000m3. Score 5 -6 - Some terrain or topography issues requiring some earthworks Some cut to waste volumes 1000m3 to 2000m3. Score 3 - 4 - Moderate terrain or topography issues, requiring moderate earthworks. moderate cut to waste volumes. 2000m3 to 3000m3. Score 1 - 2 - Significant terrain or topography issues, requiring significant earthworks, retaining structures resulting in high cut to waste volumes. Over 3000m3.	Mott MacDonald - Engineering	-	-	
		Pre/post development considerations	25%	Score 6 - 7 - Negligible to low pre/post development changes to site. Score 3 - 5 - Low to moderate pre/post development changes to site. Score 1 - 2 - Moderate to significant pre/post development changes to site.	Mott MacDonald - Planning HCC - Planning	2	2	Option A moves from a vacant / ex-bowling club use to a large infrastructure dominanted use - some mitigations possible to built form and some angles have space for planting to establish over time, but some angles will be remain dominated. Option B introduces a significant structure into open space - with a dominating presence in the west / NW part of the park, though there is more space for planting mitigation and artistic interventions as an opportunity make more sense in this public space compared to Option A, which would only be visible (?) to the adjoining properties c.f. park users in Option B site.
		Sub Total	**100%**					
Planning Risk	5%	Land use restrictions	100%	Score 6 - 7 - Negligible to low land use restrictions impacting consentability. Score 3 - 5 - Moderate land use restrictions impacting consentability. Score 1 - 2 - Significant to major land use restrictions impacting consentability.	Mott MacDonald - Planning HCC - Planning	5	4	Zoning same. Part of Option B is in flood hazard, depression area + OLFP (needs checking), close to SNA but not within. Option B has an existing waters designation on part of the site providing a baseline, but c.f. proposal may be only of some value. Option A accesses onto Collector Rd vs Local Rd - min diff. What are the SW, WW (e.g. scour) constraints that might create consenting complexity? Assume no difference for contaminated land (usually mitigatable through construction practice anyway). Assume designating with normal pathway, NPS Infrastructure provides significant support. Option B has recreational reserve process to be resolved - less certain. Can't recall status for Option A.
-	-	**Sub Total**	**100%**					
Constructability (Short term)	5%	Impacts during construction staging (Phase Plan)	10%	Score 6 - 7 -Construction staging straightforward, site offers higher flexibility around construction staging. Score 3 - 5 - Low to moderate complexity in construction staging. Score 1 - 2 -Moderate to very high complexity in construction staging due to existing infrastructure, level of temporary works required etc.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	4	6	Option A would appear to have more complexities with existing infrastructure and water supply disruption (?). Option B has more space / opportunities for flexibility and is offline.
		Critical design uncertainties/ adaptability	20%	Score 6 - 7 - No to low design uncertainties. Score 3 - 5 - Low to moderate design uncertainties, site less constrained to carry out further investigations. Score 1 - 2 - High design uncertainties, site constrained to carry out initial investigations.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	Both sites are accessible for investigation. Cannot comment on available information.
		Main site access	20%	Score 6 - 7 - Site easily accessible with minimal disruption, located away from busy intersections or residential zones. Score 3 - 5 - Site access causes a moderate level of disruption due to surrounding land use/residential area. Score 1 - 2 - Site access caused high to significant level of disruption, located in dense residential area or near busy intersections.	Mott MacDonald - Engineering BBO - Transport Team HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	4	6	Assume volumes are similar? Is the duration the same or are there constraints on one site c.f. other that would extend delivery? Both options close to residential. Option A uses shared accessways onto a busy collector with denser residential close. Option B disrupts pedestrain and cycling access to/through park but can access local network directly. Heavy vehicle access / route for Option B longer through local networks.
		Public Distruption	15%	Score 6 - 7 - Low short-term impact. Site well-separated from residential properties and businesses and other sensitive receptors. Score 3 - 5 - Moderate short-term impact. Some disruption due to proximity of residential properties and businesses and other sensitive receptors. Score 1 - 2 – High to significant short-term impact due to dense residential surroundings and/or type of construction activity being more complex.	HCC - Planning Vibration and noise consultant (BBO consultant)	3	4	Overlaps with others. Option A is closer to more dense sensitive receivers and shared accessway. Opton B has a greater separation from close receivers, non-shared access, though has more users of the park.
		Traffic management requirements	20%	Score 6 - 7 - Traffic management requirements are simple and/or localised. Score 3 - 5 - Traffic management requirements are moderately complex and of moderate scale. Score 1 - 2 - Traffic management requirements are highly complex and widespread.	Mott MacDonald - Engineering Mott MacDonald - Planning HCC - Planning BBO - Transport	6	4	Overlaps with others. Option A requires more effort for site access onto collector road, particular resident access, but this is localised. Option B potentially simpler vehicle access management but requires higher management pedestrian / cycle access for/around whole site. Option B has additional length of bulk water main impacting on local and collector network, including intersection
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	Score 6 - 7 - Less than 1km pipeline construction length. Score 3 - 5 - Between 1km and 2km of pipeline construction length. Score 1 - 2 – Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Total Score		**Total Score**						

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Approved by:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework - Scoring and Commentary Template
Scored By:	HCC PM - Vincent Lamprecht

Project Manager: Kat Jackson
Project Director: Blair Telfer

MOTT MACDONALD

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Scoring Matrix	Scoring Team	Option A (111 Cambridge Road - Bowling Club Site)	Option B (Hillcrest Park)	Justification/Site Specific Comments
Operations	30%	Pump and pump station complexity or scale	45%	Score 6 - 7 Pump size less than 100 kW Score 3 - 5 Pump size between 100 kW to 200 kW Score 1 - 2 Pump size greater than 200 kW	Mott MacDonald - Engineering	-	-	
		Accessibility, including access to infrastructure for maintenance (sludge removal etc.)	10%	Score 6 - 7 Limited accessibility constraints. Score 3 - 5 Moderate accessibility constraints. Score 1 - 2 High to significant accessibility constraints.	HCC - Operations HCC - Maintenance HCC - Owner	-	-	
		Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	30%	Score 6 - 7 Less than 1km pipeline construction length. Score 3 - 5 Between 1km and 2km of pipeline construction length. Score 1 - 2 Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Facility operation impacts	15%	Score 6 - 7 No or low operational impact. Located away from residential properties. Score 3 - 5 Moderate to high operational impact, but manageable with mitigation. Score 1 - 2 High to significant operational impact resulting in public opposition.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	4	5	Option A: Due to the close proximity to multile properties the vehicle movements will be more noticable for neighbouring properties. As indicated on the current outline plans, the average boundary offsets are only around 5m. This could be mitigated with potential planting or visual improvements. Option B: As indicated on the outline plans, the reservoir is further away from boundaries than option A with a average of 8.5m. But Hillcrest park has alot more foot traffick than Option A (120,000 people per year according to the parks team data), this means a larger portion of the community will be affected by any operational effects. This could be mitigated with potential planting or visual improvements.
		Sub Total	**100%**					
Resilience	20%	Network resilience (short term)	20%	Score 6-7 Less than 2,000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service. Scores 3-5 2,000 - 5,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Score 1-2 > 5000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service.	Mott MacDonald - Engineering	-	-	
		Future proofing	50%	Score 6 - 7 Sufficient space available for a second reservoir or expansion to meet demands beyond 2061 projections. Requires acquisition of more public/green spaces. Scores 3 - 5 Site constrained by space and zoning. Requires acquisition of more residential/private properties. Score 1 - 2 No viable space or planning provision for future expansion.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	6	7	Option A: With the outline plan there isn't a lot of potential for expansion, in prelim design the option can be considered to fit 2 resevoirs (6ML each 30m diameter) in the back of the property with another section that could allow a extra 4ML towards the front of the site. Thats a growth possibility of 33%. Option B: Eventhough this site has alot of open space, Parks have made it clear they do not want to lose more space to infrastructure. Disregarding that, the park does have space to potentially double the storage on te site, existing infrastructure (SW & WW) will need to be relocated, but doable.
		Geotechnical resilience	30%	Score 6 - 7 Atop/crest of rolling hill with gentle slope gradient, very shallow instability features – no large-scale historical slips or evidence of other shallow rotational features during site walkover or from historical aerial photos. Score 3 - 5 Low-lying landform, with minor undulations and hummocky ground, requires detailed assessments. Score 1 - 2 Identified or obvious geohazard, including but not limited to gully head and scarp, erosional features and surface tension cracks, requires engineering intervention such as ground improvement.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Mana Whenua	20%	Whakapapa – Heritage, historical connection to site	20%	Avoid impacts on wāhi tapu, wāhi whakahirahira, wāhi tupuna and mahinga kai, while maintaining and enhancing the mauri of whakapapa, whenua, wai, ngā taonga, me ngā tāngata o te hāpori. Scoring	Mana Whenua	-	-	
		Mauri mana o te whenua - Lands, current, previous use	20%	7 - Transformational enhancement / restores mauri (and CP) 6 - Very strong positive alignments to CP	Mana Whenua	-	-	
		Mauri, mana o ngā wai - Receiving waters + -	20%	5 - Strong positive alignment to CP 4 - Moderate positive / well mitigated CP	Mana Whenua	-	-	
		Mauri o ngā taonga uku iho - Biodiversity, ecology, atmosphere + -	20%	3 - Neutral/ balanced 2 - Minor adverse (mitigation required to CP) 1 - Significant adverse on CP	Mana Whenua	-	-	
		Ngā rauemi / putea - Infrastructure investment	20%	0 - Severe cultural conflicts / impacts on CP	Mana Whenua	-	-	
		Te Ture Whaimana & Te Mana o Te Wai		The option could be acceptable to iwi as: It will contribute to the restoration and protection of the Waikato River. It will contribute to the restoration and protection of the relationship of the Waikato River, including economic, social, cultural, and spiritual relationships. It will contribute to the overall betterment of the Waikato River Catchment and to achieve the Vision & Strategy for the Waikato. The option would not undermine, or would not have any adverse effect on Te Ture Whaimana Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact	Mana Whenua	-	-	
		Heritage		Would effects on the below prevent the project going ahead? Site and places of cultural value. Sites and places of archaeological value. Sites and palces of valued heritage buildings, trees (with heritage values) and places. Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact"	Mana Whenua	-	-	
		Sub Total	**20%**					
Social Impact (Long term)	10%	Landscape effects	20%	Score 6 - 7 Low impact on landform and vegetation with opportunities for mitigation (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on landform and vegetation with possible opportunities for mitigation. Score 1 - 2 Very high to significant impact on landform and vegetation and limited opportunities for mitigation.	Boffa Miskel	-	-	
		Visual Effects	40%	Score 6 - 7 Low impact on visual amenity with opportunities for screening (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on visual amenity with possible opportunities for screening. Score 1 - 2 Very high to significant impact on visual amenity and limited opportunities for screening.	Boffa Miskel	-	-	
		Social Cohesion (operational)	20%	Score 6 - 7 No to low impact on social cohesion including connectivity and access to open space. Score 3 - 5 Moderate to high impact on social cohesion including connectivity and access to open space. Score 1 - 2 Significant impact on social cohesion including connectivity and access to open space.	Mott MacDonald - Planning HCC - Planning	-	-	
		Human health and Wellbeing	20%	Score 6 - 7 Nil to low impact on health and well-being. Score 3 - 5 Moderate to high impact on health and wellbeing. Score 1 - 2 Significant impact on health and wellbeing.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Environmental	10%	Ecology	50%	Score 6 - 7 No trees cleared or any at risk species removal avoided or relocated (6) and opportunities for ecological enhancement and net positive effects (7). Score 3 - 5 Indigenous or at-risk species present with moderate to minor potential habitat or tree clearance resulting in moderate ecological effects. Score 1 - 2 Indigenous or at-risk species present with significant to large potential habitat or tree clearance resulting in significant ecological effects.	Mott MacDonald - Planning HCC - Planning	-	-	
		Earthworks	25%	Score 7 - No terrain or topography issues, requiring negligible earthworks or no cut to waste volumes. Less than 1000m3. Score 5 -6 - Some terrain or topography issues requiring some earthworks Some cut to waste volumes 1000m3 to 2000m3. Score 3 - 4 - Moderate terrain or topography issues, requiring moderate earthworks. moderate cut to waste volumes. 2000m3 to 3000m3. Score 1 - 2 - Significant terrain or topography issues, requiring significant earthworks, retaining structures resulting in high cut to waste volumes. Over 3000m3.	Mott MacDonald - Engineering	-	-	
		Pre/post development considerations	25%	Score 6 - 7 - Negligible to low pre/post development changes to site. Score 3 - 5 - Low to moderate pre/post development changes to site. Score 1 - 2 - Moderate to significant pre/post development changes to site.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Planning Risk	5%	Land use restrictions	100%	Score 6 - 7 - Negligible to low land use restrictions impacting consentability. Score 3 - 5 - Moderate land use restrictions impacting consentability. Score 1 - 2 - Significant to major land use restrictions impacting consentability.	Mott MacDonald - Planning HCC - Planning	-	-	
-	-	**Sub Total**	**100%**					
Constructability (Short term)	5%	Impacts during construction staging (Phase Plan)	10%	Score 6 - 7 - Construction staging straightforward, site offers higher flexibility around construction staging. Score 3 - 5 - Low to moderate complexity in construction staging. Score 1 - 2 - Moderate to very high complexity in construction staging due to existing infrastructure, level of temporary works required etc.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	5	6	Option A: The bowling club has already been demolished, the only infrastructure that needs to be demolished is the existing reservoir. No services needs to be relocated. Additional work that would be required on this site, is the construction of another tower to temporarily house pumpstation telecoms currently on the existing reservoir. Additional earthworks required to allow big loads into the site. Option B: This option will require big trees to be removed and potentially services relocated should the reservoir be shifted more NE to move it away from residential property boundaries. The etrance track will need to be built up to allow access for bigger loads as the existing track will not be able to handle the loads. Overall: No retaining structures are anticipated for either site and there has been no testing to determine contaminated soils on either.
		Critical design uncertainties/ adaptability	20%	Score 6 - 7 - No to low design uncertainties. Score 3 - 5 - Low to moderate design uncertainties, site less constrained to carry out further investigations. Score 1 - 2 - High design uncertainties, site constrained to carry out initial investigations.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	7	7	Unaware of any design uncertianties on Option A or B
		Main site access	20%	Score 6 - 7 - Site easily accessible with minimal disruption, located away from busy intersections or residential zones. Score 3 - 5 - Site access causes a moderate level of disruption due to surrounding land use/residential area. Score 1 - 2 - Site access caused high to significant level of disruption, located in dense residential area or near busy intersections.	Mott MacDonald - Engineering BBO - Transport Team HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	5	6	Option A: This site is situated in a residential area and access is off a high traffic road. The site works on this site will affect the immidiate neighbours the most. Option B: This site is situated in a residential area but with a bit more open spaces around it, access is off a low traffic road. The site works on this site will affect the immidiate neighbours and any park visitors. The amount of heavy traffic to site will be noticed more, due to the quiet roads.
		Public Distruption	15%	Score 6 - 7 - Low short-term impact. Site well-separated from residential properties and businesses and other sensitive receptors. Score 3 - 5 - Moderate short-term impact. Some disruption due to proximity of residential properties and businesses and other sensitive receptors. Score 1 - 2 - High to significant short-term impact due to dense residential surroundings and/or type of construction activity being more complex.	HCC - Planning Vibration and noise consultant (BBO consultant)	-	-	
		Traffic management requirements	20%	Score 6 - 7 - Traffic management requirements are simple and/or localised. Score 3 - 5 - Traffic management requirements are moderately complex and of moderate scale. Score 1 - 2 - Traffic management requirements are highly complex and widespread.	Mott MacDonald - Engineering Mott MacDonald - Planning HCC - Planning BBO - Transport	-	-	
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	Score 6 - 7 - Less than 1km pipeline construction length. Score 3 - 5 - Between 1km and 2km of pipeline construction length. Score 1 - 2 – Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Total Score		**Total Score**						

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Approved by:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework - Scoring and Commentary Template

Project Manager: Kat Jackson
Project Director: Blair Telfer

MOTT MACDONALD

Scored By: HCC Owner - Daniel Hishon

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Scoring Matrix	Scoring Team	Option A (111 Cambridge Road - Bowling Club Site)	Option B (Hillcrest Park)	Justification/Site Specific Comments
Operations	30%	Pump and pump station complexity or scale	45%	Score 6 - 7 Pump size less than 100 kW Score 3 - 5 Pump size between 100 kW to 200 kW Score 1 - 2 Pump size greater than 200 kW	Mott MacDonald - Engineering	-	-	
		Accessibility, including access to infrastructure for maintenance (sludge removal etc.)	10%	Score 6 - 7 Limited accessibility constraints. Score 3 - 5 Moderate accessibility constraints. Score 1 - 2 High to significant accessibility constraints.	HCC - Operations HCC - Maintenance HCC - Owner	5	4	Both sites have some level of access constraints. The Option A has a narrower access tract to the sites that should only be an issue during singnificant renewals activities that require large equipment movments. Option b has a singificantly larger space the lant that we will be drivign over will be the same. the site be option will likely result in a shared parth with the public as which will be restrictive as access for significant works will need cloasure permissions from parks and TMP to direct park users away from the access track. Option b will have a harder time justifying use of more parks land to accomidate turing radius for vehicals on site. Site B has more space around the tank however being partially burried and backed into a slope could cause access issues.
		Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	30%	Score 6 - 7 Less than 1km pipeline construction length. Score 3 - 5 Between 1km and 2km of pipeline construction length. Score 1 - 2 Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Facility operation impacts	15%	Score 6 - 7 No or low operational impact. Located away from residential properties. Score 3 - 5 Moderate to high operational impact, but manageable with mitigation. Score 1 - 2 High to significant operational impact resulting in public opposition.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	5	Site a is significantly closer to residential properties. Site be is further away hwoever being a much more open location it will be exposed to more members of the public without inclusion of screening.
		Sub Total	**100%**					
Resilience	20%	Network resilience (short term)	20%	Score 6-7 Less than 2,000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service. Scores 3-5 2,000 - 5,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Score 1-2 > 5000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service.	Mott MacDonald - Engineering	-	-	
		Future proofing	50%	Score 6 - 7 Sufficient space available for a second reservoir or expansion to meet demands beyond 2061 projections. Requires acquisition of more public/green spaces. Scores 3 - 5 Site constrained by space and zoning. Requires acquisition of more residential/private properties. Score 1 - 2 No viable space or planning provision for future expansion.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	4	5	There is more green space on the site however it may be challenging to justify the need as it remove the primary purpose and may cut off access through the park.
		Geotechnical resilience	30%	Score 6 - 7 Atop/crest of rolling hill with gentle slope gradient, very shallow instability features – no large-scale historical slips or evidence of other shallow rotational features during site walkover or from historical aerial photos. Score 3 - 5 Low-lying landform, with minor undulations and hummocky ground, requires detailed assessments. Score 1 - 2 Identified or obvious geohazard, including but not limited to gully head and scarp, erosional features and surface tension cracks, requires engineering intervention such as ground improvement.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Mana Whenua	20%	Whakapapa – Heritage, historical connection to site	20%	Avoid impacts on wāhi tapu, wāhi whakahirahira, wāhi tupuna and mahinga kai, while maintaining and enhancing the mauri of whakapapa, whenua, wai, ngā taonga, me ngā tāngata o te hāpori. Scoring	Mana Whenua	-	-	
		Mauri mana o te whenua - Lands, current, previous use	20%	7 - Transformational enhancement / restores mauri (and CP) 6 - Very strong positive alignments to CP	Mana Whenua	-	-	
		Mauri, mana o ngā wai - Receiving waters + -	20%	5 - Strong positive alignment to CP 4 - Moderate positive / well mitigated CP	Mana Whenua	-	-	
		Mauri o ngā taonga uku iho - Biodiversity, ecology, atmosphere + -	20%	3 - Neutral/ balanced 2 - Minor adverse (mitigation required to CP)	Mana Whenua	-	-	
		Ngā rauemi / putea - Infrastructure investment	20%	1 - Significant adverse on CP 0 - Severe cultural conflicts / impacts on CP	Mana Whenua	-	-	
		Te Ture Whaimana & Te Mana o Te Wai		The option could be acceptable to iwi as: It will contribute to the restoration and protection of the Waikato River. It will contribute to the restoration and protection of the relationship of the Waikato River, including economic, social, cultural, and spiritual relationships. It will contribute to the overall betterment of the Waikato River Catchment and to achieve the Vision & Strategy for the Waikato. The option would not undermine, or would not have any adverse effect on Te Ture Whaimana Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact	Mana Whenua	-	-	
		Heritage		Would effects on the below prevent the project going ahead? Site and places of cultural value. Sites and places of archaeological value. Sites and palces of valued heritage buildings, trees (with heritage values) and places. Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 : No or negligible impact"	Mana Whenua	-	-	
		Sub Total	**20%**					
Social Impact (Long term)	10%	Landscape effects	20%	Score 6 - 7 Low impact on landform and vegetation with opportunities for mitigation (6) or opportunities for enhancement and not positive effects (7). Score 3 - 5 Moderate to high impact on landform and vegetation with possible opportunities for mitigation. Score 1 - 2 Very high to significant impact on landform and vegetation and limited opportunities for mitigation.	Boffa Miskel	-	-	
		Visual Effects	40%	Score 6 - 7 Low impact on visual amenity with opportunities for screening (6) or opportunities for enhancement and not positive effects (7). Score 3 - 5 Moderate to high impact on visual amenity with possible opportunities for screening. Score 1 - 2 Very high to significant impact on visual amenity and limited opportunities for screening.	Boffa Miskel	-	-	
		Social Cohesion (operational)	20%	Score 6 - 7 No to low impact on social cohesion including connectivity and accesss to open space. Score 3 - 5 Moderate to high impact on social cohesion including connectivity and access to open space. Score 1 - 2 Significant impact on social cohesion including connectivity and access to open space.	Mott MacDonald - Planning HCC - Planning	-	-	
		Human health and Wellbeing	20%	Score 6 - 7 Nil to low impact on health and well-being. Score 3 - 5 Moderate to high impact on health and wellbeing. Score 1 - 2 Significant impact on health and wellbeing.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Environmental	10%	Ecology	50%	Score 6 - 7 No trees cleared or any at risk species removal avoided or relocated (6) and opportunities for ecological enhancement and net positive effects (7). Score 3 - 5 Indigenous or at-risk species present with moderate to minor potential habitat or tree clearance resulting in moderate ecological effects. Score 1 - 2 Indigenous or at-risk species present with significant to large potential habitat or tree clearance resulting in significant ecological effects.	Mott MacDonald - Planning HCC - Planning	-	-	
		Earthworks	25%	Score 7 - No terrain or topography issues, requiring negligible earthworks or no cut to waste volumes. Less than 1000m3. Score 5 - 6 - Some terrain or topography issues requiring some earthworks Some cut to waste volumes 1000m3 to 2000m3. Score 3 - 4 - Moderate terrain or topography issues, requiring moderate earthworks. moderate cut to waste volumes. 2000m3 to 3000m3. Score 1 - 2 - Significant terrain or topogaphy issues, requiring significant earthworks, retaining structures resulting in high cut to waste volumes. Over 3000m3.	Mott MacDonald - Engineering	-	-	
		Pre/post development considerations	25%	Score 6 - 7 - Negligible to low pre/post development changes to site. Score 3 - 5 - Low to moderate pre/post development changes to site. Score 1 - 2 - Moderate to significant pre/post development changes to site.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Planning Risk	5%	Land use restrictions	100%	Score 6 - 7 - Negligible to low land use restrictions impacting consentability. Score 3 - 5 - Moderate land use restrictions impacting consentability. Score 1 - 2 - Significant to major land use restrictions impacting consentability.	Mott MacDonald - Planning HCC - Planning	-	-	
-	-	**Sub Total**	**100%**					
Constructability (Short term)	5%	Impacts during construction staging (Phase Plan)	10%	Score 6 - 7 - Construction staging straightforward, site offers higher flexibility around construction staging. Score 3 - 5 - Low to moderate complexity in construction staging. Score 1 - 2 - Moderate to very high complexity in construction staging due to existing infrastructure, level of temporary works required etc.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	6	
		Critical design uncertainties/ adaptability	20%	Score 6 - 7 - No to low design uncertainties. Score 3 - 5 - Low to moderate design uncertainties, site less constrained to carry out further investigations. Score 1 - 2 - High design uncertainties, site constrained to carry out initial investigations.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	6	
		Main site access	20%	Score 6 - 7 - Site easily accessible with minimal disuption, located away from busy intersections or residential zones. Score 3 - 5 - Site access causes a moderate level of disruption due to surrounding land use/residential area. Score 1 - 2 - Site access caused high to significant level of disruption, located in dense residential area or near busy intersections.	Mott MacDonald - Engineering BBO - Transport Team HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	3	6	Access to both sites will be disruptive access to the hilcrest site will potentially require traffic management to manage disruptions on cambridge road. Access to the parks off mansel ave is quieter however it will be disruptive to people accessing and using the park for the duration of the construction.
		Public Distruption	15%	Score 6 - 7 - Low short-term impact. Site well-separated from residential properties and businesses and other sensitive receptors. Score 3 - 5 - Moderate short-term impact. Some disruption due to proximity of residential properties and businesses and other sensitive receptors. Score 1 - 2 – High to significant short-term impact due to dense residential surroundings and/or type of construction activity being more complex.	HCC - Planning Vibration and noise consultant (BBO consultant)	-	-	
		Traffic management requirements	20%	Score 6 - 7 - Traffic management requirements are simple and/or localised. Score 3 - 5 - Traffic management requirements are moderately complex and of moderate scale. Score 1 - 2 - Traffic management requirements are highly complex and widespread.	Mott MacDonald - Engineering Mott MacDonald - Planning HCC - Planning BBO - Transport	5	4	Ive rated the TMP for the park site as beeing more complex as it will need to focus on how to manage the trafic flow through a longer run of pipe and managing the padestrian access through the park. This site will also need a greater removal of soil an therfore more potential truck movements.
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	Score 6 - 7 - Less than 1km pipeline construction length. Score 3 - 5 - Between 1km and 2km of pipeline construction length. Score 1 - 2 – Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Total Score		**Total Score**						

Project:	Hillcrest Reservoir & WM Early Stage Support - Proposal Project
Prepared by:	Julie Chhour
Checked by:	Rebecca Ellery
Approved by:	Blair Telfer
Revision	A
Last Updated	20-Apr-26
Description:	MCA Framework - Scoring and Commentary Template

Project Manager: Kat Jackson
Project Director: Blair Telfer

MOTT MACDONALD

Scored By: Landscape and Visuals - Boffa Miskell

Main Criteria	Main criteria weighting	Sub Criteria	Sub criteria weighting	Scoring Matrix	Scoring Team	Option A (111 Cambridge Road - Bowling Club Site)	Option B (Hillcrest Park)	Justification/Site Specific Comments
Operations	30%	Pump and pump station complexity or scale	45%	Score 6 - 7 Pump size less than 100 kW Score 3 - 5 Pump size between 100 kW to 200 kW Score 1 - 2 Pump size greater than 200 kW	Mott MacDonald - Engineering	-	-	
		Accessibility, including access to infrastructure for maintenance (sludge removal etc.)	10%	Score 6 - 7 Limited accessibility constraints. Score 3 - 5 Moderate accessibility constraints. Score 1 - 2 High to significant accessibility constraints.	HCC - Operations HCC - Maintenance HCC - Owner	-	-	
		Maintenance including meters and diameters of new bulk and trunk main pipework to maintain	30%	Score 6 - 7 Less than 1km pipeline construction length. Score 3 - 5 Between 1km and 2km of pipeline construction length. Score 1 - 2 Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Facility operation impacts	15%	Score 6 - 7 No or low operational impact. Located away from residential properties. Score 3 - 5 Moderate to high operational impact, but manageable with mitigation. Score 1 - 2 High to significant operational impact resulting in public opposition.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	
		Sub Total	**100%**					
Resilience	20%	Network resilience (short term)	20%	Score 6-7 Less than 2,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Scores 3-5 2,000 - 5,000 properties have pressure <100 KPa (this is emergency supply consideration) during pump station out of service. Score 1-2 > 5000 properties have pressure < 100 KPa (this is emergency supply consideration) during pump station out of service.	Mott MacDonald - Engineering	-	-	
		Future proofing	50%	Score 6 - 7 Sufficient space available for a second reservoir or expansion to meet demands beyond 2061 projections. Requires acquisition of more public/green spaces. Scores 3 - 5 Site constrained by space and zoning. Requires acquisition of more residential/private properties. Score 1 - 2 No viable space or planning provision for future expansion.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	
		Geotechnical resilience	30%	Score 6 - 7 Atop/crest of rolling hill with gentle slope gradient, very shallow instability features – no large-scale historical slips or evidence of other shallow rotational features during site walkover or from historical aerial photos. Score 3 - 5 Low-lying landform, with minor undulations and hummocky ground, requires detailed assessments. Score 1 - 2 Identified or obvious geohazard, including but not limited to gully head and scarp, erosional features and surface tension cracks, requires engineering intervention such as ground improvement.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Mana Whenua	20%	Whakapapa – Heritage, historical connection to site	20%	Avoid impacts on wāhi tapu, wāhi whakahirahira, wāhi tupuna and mahinga kai, while maintaining and enhancing the mauri of whakapapa, whenua, wai, ngā taonga, me ngā tāngata o te hāpori. Scoring 7 - Transformational enhancement / restores mauri (and CP) 6 - Very strong positive alignments to CP 5 - Strong positive alignment to CP 4 - Moderate positive / well mitigated CP 3 - Neutral/ balanced 2 - Minor adverse (mitigation required to CP) 1 - Significant adverse on CP 0 - Severe cultural conflicts / impacts on CP	Mana Whenua	-	-	
		Mauri mana o te whenua - Lands, current, previous use	20%		Mana Whenua	-	-	
		Mauri, mana o ngā wai - Receiving waters + -	20%		Mana Whenua	-	-	
		Mauri o ngā taonga uku iho - Biodiversity, ecology, atmosphere + -	20%		Mana Whenua	-	-	
		Ngā rauemi / putea - Infrastructure investment	20%		Mana Whenua	-	-	
		Te Ture Whaimana & Te Mana o Te Wai		The option could be acceptable to iwi as: It will contribute to the restoration and protection of the Waikato River. It will contribute to the restoration and protection of the relationship of the Waikato River, including economic, social, cultural, and spiritual relationships. It will contribute to the overall betterment of the Waikato River Catchment and to achieve the Vision & Strategy for the Waikato. The option would not undermine, or would not have any adverse effect on Te Ture Whaimana Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers	Mana Whenua	-	-	
		Heritage		Would effects on the below prevent the project going ahead? Site and places of cultural value. Sites and places of archaeological value. Sites and palces of valued heritage buildings, trees (with heritage values) and places. Score 0 - 2 : Very significant impact - very offensive and damaging to cultural/iwi values. Eliminates one or more cultural/heritage sites Score 3 - 5 : High impact – Significantly impacts a cultural/heritage site through removal of culturally sensitive or heritage items. Specific management and consultation plans requiring major community inputs and iterations with wider group of external parties. Score 6 - 7 : Moderate impact - impacts to a cultural/heritage site that can be managed during both operations and construction. Specific management and consultation plans required and agreed with external parties. Score 8 - 9 : Slight impact - can be managed through engagement with existing council cultural and heritage liaison officers Score 10 - No or negligible impact	Mana Whenua	-	-	
		Sub Total	**20%**					
Social Impact (Long term)	10%	Landscape effects	20%	Score 6 - 7 Low impact on landform and vegetation with opportunities for mitigation (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on landform and vegetation with possible opportunities for mitigation. Score 1 - 2 Very high to significant impact on landform and vegetation and limited opportunities for mitigation.	Boffa Miskel	5	3	Option A (111 Cambridge Road - Bowling Club Site). The site is elevated (high point in surrounding lanscape) Site itself is relatively flat, reflecting its previous use as a bowling club. It contains an existing small reservoir, and the bowling club has recently been disestablished. The site is bounded by residential properties, characterised by a mix of fencing and established vegetation, with driveway access provided from Cambridge Road. Surrounding dwellings represent a range of residential styles, including more recent builds and estbalished homes. Vegetation within the site itself is limited, largely confined to small-scale shrub planting to the east of the existing tank, while more substantial vegetation is associated with adjoining residential properties. Earthworks will be required to facilitate construction; however, existing ground levels are generally expected to be retained, and no retaining walls are anticipated. The construction footprint is relatively constrained, particularly along the eastern boundary adjacent to 15 and 17 Masters Avenue, where space is limited. While there are some opportunities for mitigation planting, these are restricted in this area. Option Option B (Hillcrest Park) - Hillcrest Park is a relatively flat and open reserve, accommodating a range of recreational uses including a playground, cricket pitch, informal recreation space, and an area of Significant Natural Area (SNA) which divides the park. The introduction of a reservoir in this location would result in the loss of open grassed space and may necessitate the removal of existing mature trees. Retention of these trees would be important for maintaining amenity values and providing mitigation. While earthworks and landform modification are likely to be limited, the loss of open space represents a notable change to the character and function of the reserve. Although there are opportunities for enhancement planting, this is unlikely to fully offset the loss of open space or provide equivalent landscape amenity benefits. Due to the openness of the park, there are limited opportunities to visually integrate the reservoir without substantial planting, which in turn could further reduce the usability and openness of the park. One potential mitigation approach could involve extending the SNA and integrating planting to assist in screening; however, this would further mean loss of open space. There maybe some ecological benefits within enhanced area of planting within urban environment. While there are other reserve areas nearby, meaning the loss of open grassed space may be partially absorbed at a wider network level, localised effects would remain.
		Visual Effects	40%	Score 6 - 7 Low impact on visual amenity with opportunities for screening (6) or opportunities for enhancement and net positive effects (7). Score 3 - 5 Moderate to high impact on visual amenity with possible opportunities for screening. Score 1 - 2 Very high to significant impact on visual amenity and limited opportunities for screening.	Boffa Miskel	3	3	Option A (111 Cambridge Road - Bowling Club Site). - In terms of visual effects, the proposed 11 m high tank will be visible from several neighbouring properties, representing the most sensitive receivers. Visibility from Cambridge Road will be more limited due to the site's setback. Opportunities for effective screening are constrained, particularly for 15 and 17 Masters Avenue, due to proximity, limited space, and the height of the proposed structure. While additional fencing and planting within these properties may assist, visual effects for these two properties are anticipated to remain at a moderate and potentially high level of visual effects . Shading effects may also arise. Opportunities for given wall or treatment to side of newwnoir to help integrate into the site and reduce visual effects. For other surrounding properties, the presence of the existing tank, intervening vegetation, and increased separation distances provide greater opportunity for mitigation planting. Level of effects are anticipated to be moderate to low - moderate. The existing tank does provide visual context for these properties. Option Option B (Hillcrest Park) - In terms of visual effects, the open nature of the park and its surrounding residential context means the proposed reservoir would be highly visible. Residential properties along Mansel Avenue, Fenwick Crescent, and Masters Avenue would experience noticeable visual effects, with some properties particularly 43 Mansel Avenuelikely to experience high visual effects due to proximity and direct outlook. Mitigation options such as integrated planting or earth bunding (although this would contraints the flat topography) would take time to establish. As a result, visual effects are expected to remain moderate (adverse) .
		Social Cohesion (operational)	20%	Score 6 - 7 No to low impact on social cohesion including connectivity and access to open space. Score 3 - 5 Moderate to high impact on social cohesion including connectivity and access to open space. Score 1 - 2 Significant impact on social cohesion including connectivity and access to open space.	Mott MacDonald - Planning HCC - Planning	-	-	
		Human health and Wellbeing	20%	Score 6 - 7 Nil to low impact on health and well-being. Score 3 - 5 Moderate to high impact on health and wellbeing. Score 1 - 2 Significant impact on health and wellbeing.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Environmental	10%	Ecology	50%	Score 6 - 7 No trees cleared or any at risk species removal avoided or relocated (6) and opportunities for ecological enhancement and net positive effects (7). Score 3 - 5 Indigenous or at-risk species present with moderate to minor potential habitat or tree clearance resulting in moderate ecological effects. Score 1 - 2 Indigenous or at-risk species present with significant to large potential habitat or tree clearance resulting in significant ecological effects.	Mott MacDonald - Planning HCC - Planning	-	-	
		Earthworks	25%	Score 7 - No terrain or topography issues, requiring negligible earthworks or no cut to waste volumes. Less than 1000m3. Score 5 - 6 - Some terrain or topography issues requiring some earthworks Some cut to waste volumes 1000m3 to 2000m3. Score 3 - 4 - Moderate terrain or topography issues, requiring moderate earthworks. moderate cut to waste volumes. 2000m3 to 3000m3. Score 1 - 2 - Significant terrain or topography issues, requiring significant earthworks, retaining structures resulting in high cut to waste volumes. Over 3000m3.	Mott MacDonald - Engineering	-	-	
		Pre/post development considerations	25%	Score 6 - 7 - Negligible to low pre/post development changes to site. Score 3 - 5 - Low to moderate pre/post development changes to site. Score 1 - 2 - Moderate to significant pre/post development changes to site.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Planning Risk -	5% -	Land use restrictions	100%	Score 6 - 7 - Negligible to low land use restrictions impacting consentability. Score 3 - 5 - Moderate land use restrictions impacting consentability. Score 1 - 2 - Significant to major land use restrictions impacting consentability.	Mott MacDonald - Planning HCC - Planning	-	-	
		Sub Total	**100%**					
Constructability (Short term)	5%	Impacts during construction staging (Phase Plan)	10%	Score 6 - 7 - Construction staging straightforward, site offers higher flexibility around construction staging. Score 3 - 5 - Low to moderate complexity in construction staging. Score 1 - 2 - Moderate to very high complexity in construction staging due to existing infrastructure, level of temporary works requied etc.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	
		Critical design uncertainties/ adaptability	20%	Score 6 - 7 - No to low design uncertainties. Score 3 - 5 - Low to moderate design uncertainties, site less constrained to carry out further investigations. Score 1 - 2 - High design uncertainties, site constrained to carry out initial investigations.	Mott MacDonald - Engineering HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	
		Main site access	20%	Score 6 - 7 - Site easily accessible with minimal disruption, located away from busy intersections or residential zones. Score 3 - 5 - Site access causes a moderate level of disruption due to surrounding land use/residential area. Score 1 - 2 - Site access caused high to significant level of disruption, located in dense residential area or near busy intersections.	Mott MacDonald - Engineering BBO - Transport Team HCC - Operations HCC - Maintenance HCC - Planning HCC - Owner HCC - PM	-	-	
		Public Distruption	15%	Score 6 - 7 - Low short-term impact. Site well-separated from residential properties and businesses and other sensitive receptors. Score 3 - 5 - Moderate short-term impact. Some disruption due to proximity of residential properties and businesses and other sensitive receptors. Score 1 - 2 - High to significant short-term impact due to dense residential surroundings and/or type of construction activity being more complex.	HCC - Planning Vibration and noise consultant (BBO consultant)	-	-	
		Traffic management requirements	20%	Score 6 - 7 - Traffic management requirements are simple and/or localised. Score 3 - 5 - Traffic management requirements are moderately complex and of moderate scale. Score 1 - 2 - Traffic management requirements are highly complex and widespread.	Mott MacDonald - Engineering Mott MacDonald - Planning HCC - Planning BBO - Transport	-	-	
		GHG and Carbon Emissions based on length of new trunk and bulk main lengths.	15%	Score 6 - 7 - Less than 1km pipeline construction length. Score 3 - 5 - Between 1km and 2km of pipeline construction length. Score 1 - 2 – Greater than 2km.	Mott MacDonald - Engineering	-	-	
		Sub Total	**100%**					
Total Score		**Total Score**						

Appendix F – Mana Whenua Options Assessment Meeting Minutes

Meeting Minutes

Project:	Hamilton City Council Hillcrest Zone Implementation		WO Number:
Minutes:	Mana Whenua Wānanga – Options Assessment		
Date:	Thursday, 7th May 2026 – 2.00 pm		
Location:	Level 3 - Anglesea Room (VC), Hamilton City Council		
Invited:		Name	Company
	JC	*Jackie Colliar*	*IAWAI – Flowing Waters*
	MR	*Mari Richtman*	*Hamilton City Council*
	NH	*Norm Hill*	*Te Hira Consultants*
	CH	*Carolyn Hopa*	*Ngaati Wairere*
	MB	*Menzies Bradley*	*Ngaati Hauaa*
	HW	*Harry Wilson*	*Ngaati Korokii Kahukura*
	JK	*Jo Kukutai*	*Ngaa Uri o Maahanga*
	CD	*Chris Dawson*	*BBO*
Apologies:			
	KF	*Kahurimu Flavell*	*Waikato Tainui*
Copy to:	*all above via email* Hillcrest Reservoir email – hillcrestreservoir@iawai.co.nz		

Next Meeting: *TBC*

#	Item	Due	Action
1.	**General**		
1.1.	Project Team and Key Roles - Project Team - Mana Whenua	Note	All
2.	**Introduction**		
2.1.	Purpose - To discuss and evaluate the two shortlisted reservoir site options from a Mana Whenua perspective and identify key cultural, technical, social, environmental and resilience considerations to inform the site selection process.	Note	All
3.	**Project Background**		
3.1	Recap - The project team provided an overview of the Hillcrest Zone Implementation project. The Hillcrest water supply zone currently does not have an operating reservoir. - The existing reservoir at 111 Cambridge Road is no longer in operation and is too small to meet the current and future needs of the area. - At present, the Hillcrest area is supplied directly from the water treatment plant. This is not ideal from an operational or resilience perspective, as the system relies on direct pumping from the treatment plant to customers. - The project is intended to improve: → water pressure and level of service in the Hillcrest area; → operational efficiency of the water supply network; → resilience during outages or emergency events; → future servicing of the Hillcrest water supply zone. - The proposed infrastructure includes a new reservoir, pump station and associated bulk water mains. The anticipated reservoir size is approximately 14 million litres. - Norman Hill has met with representatives from Ngaati Wairere, Ngaati Koroki Kahukura and Ngaati Haaua to discuss and develop an appropriate cultural framework for the mana whenua to evaluate the options. These conversations have resulted in a number of draft criteria/lenses to support mana whenua evaluation of the options.	Note	All
4.	**Options Assessment**		
4.1.	Information - The purpose of the site selection process is to clearly document the reasons for the preferred option once selected, rather than simply defaulting to the existing reservoir site. - An initial options assessment was completed by Mott McDonald and used to identify potential locations for the new reservoir. Through this assessment, a long list of options were evaluated. - The process was then narrowed from a long list of possible locations to two shortlisted options. The two shortlisted options for discussion and evaluation today are: • Option A – 111 Cambridge Road / former Bowling Club site o This site includes the existing decommissioned reservoir and former bowling club land. • Option B – Hillcrest Park o This site is within Hillcrest Park, an existing public reserve with open space, mature trees, recreational use, and proximity to a Significant Natural Area.	Note	All

#	Item	Due	Action
4.2.	Technical Summary of the Two Options	Note	All
	4.2.1. Elevation and resilience - The project team noted that there is a significant elevation difference between the two options. - Option A is located at approximately 61 mRL, while Option B is located at approximately 43 mRL. - This elevation difference is important because reservoirs work best when located at higher points, as this allows more properties to be supplied by gravity if there is a power outage or pump failure. - Around 5500 properties will be serviced by the proposed Hillcrest demand management zone. Option A would allow 90% of the properties to be feed via gravity, 10% would require pumping. Option B could feed only ~10% via gravity, the rest of the zone would require pumping. -		
	4.2.2. Construction access and traffic - **Option A** is a more constrained site, with nearby houses, narrower access points, and potential construction access challenges. The team advised that preliminary tracking has been completed to understand how large construction vehicles could access the site. - **Option B** has more available space and may be easier to access from a construction perspective. However, the access would be through a quieter residential area and into a public reserve, which may create a different type of impact for residents and park users. - Construction traffic impacts would need to be carefully managed for either site, including timing of heavy vehicle movements, school and pedestrian movements, and disruption to surrounding residents.	Note	All
	4.2.3. Pipework and infrastructure requirements - It is noted that Option B would require a longer pipe route for the reservoir filling main than Option A (approximately 1200m more). This would result in additional trenching, traffic management, construction disruption, and disturbance to whenua. - Mana Whenua noted that the extent of pipework and ground disturbance should be considered as part of the cultural assessment, not only as a technical or cost matter. - Option A already contains existing water infrastructure and is a highly modified site.	Note	All
	4.2.4. Landscape and visual effects - Option A would have a more localised visual impact, particularly for immediately adjacent neighbours. Due to the size of the reservoir and the proximity of surrounding houses, screening opportunities may be limited. - Option B would have a broader landscape and visual impact because it would introduce a large above-ground structure into a public reserve. The group noted that Hillcrest Park is used by the local community and contributes to the open-space character of the area. It was also noted that Option B would have a significant impact on surrounding property owners aswell. - It was noted that Option B could change the way people experience and use the park.	Note	All
	4.2.5. Noise and operational effects - The completed reservoir would be relatively quiet during operation. The majority of noise effects would occur during construction, including piling, large concrete pours, truck movements and delivery of large components. - Mana Whenua noted that construction noise, vibration, hours of work and traffic management would need to be managed carefully.	Note	All

#	Item	Due	Action
	- It was noted that similar issues were managed on other reservoir projects through construction noise management plans, traffic management, timing restrictions, and engagement with nearby residents.		
	4.2.6. Geotechnical considerations - Option A is located on higher ground and is expected to have fewer geotechnical concerns based on the desktop work completed to date. - Option B is lower lying and sloping, with more uncertainty around ground conditions and a potentially greater earthworks requirement. Further geotechnical investigation would be required if this option progresses.	Note	All
	4.2.7. Ecology and open space - Option A is largely a modified site, being a former bowling club with a decommissioned reservoir and few ecological features. - Option B includes public open space, mature trees and proximity to a Significant Natural Area. - Mana Whenua noted that ecological matters such as trees, birds, bats, lizards, biodiversity, and wet or low-lying areas need further consideration.	Note	All
	4.2.8. Archaeologyc - The assessment did not identify known archaeological sites directly within either project footprint. - *ACTION*: Distribute Sian Keith Memo to attendees - Mana Whenua noted that archaeological information alone does not fully capture cultural history, whakapapa, wāhi tapu, wāhi tūpuna, wāhi taonga, or the wider cultural landscape. - Mana Whenua raised that kōiwi / bone finds have previously been identified in the wider Hillcrest area, and that this needs to be recognised as part of the cultural context. - Mana Whenua emphasised that their role as kaitiaki is to ensure that decisions appropriately consider whakapapa, mana, mauri, whenua, wai, taonga, and intergenerational responsibilities	Note 15.May Note	All HCC All
5.	**Mana Whenua Assessment Framework**		
5.1.	- An overview of the criteria developed in collaboration with Ngaati Haua, Ngaati Koroki Kahukura and Ngaati Wairere was provided. The key pou were: → Whakapapa – Heritage, historical connection to site → Mauri mana o te whenua – Lands, current, previous use → Mauri, mana o ngā wai – Receiving waters → Mauri o ngā taonga tuku iho – Biodiversity, ecology, atmosphere → Ngā rauemi / pūtea – Infrastructure investment → Ngā mana o ngā tāngata – People connection → Te Ture Whaimana & Te Mana o Te Wai – Vision and Strategy for the Waikato River & recognising the fundamental importance and authority/status of water → Ngā taonga tuku iho – Heritage - Rather than scoring each of the two options against the specific criteria and sub-criteria, a korero was held, and a relative comparison was discussed and completed.	Note	All
6.	**Key Discussion of Option A – 111 Cambridge Road**		
6.1.	The following matters were discussed in relation to Option A: - The site is already highly modified - The site contains existing water infrastructure, including the decommissioned reservoir - The former bowling club use has ended, and the site is not currently used as public open space in the same way as Hillcrest Park	Note	All

#	Item	Due	Action
	- The site is located at a higher elevation, which provides stronger water supply resilience and gravity-feed benefits - Construction and visual effects would be more localised, particularly affecting nearby neighbours - The site is close to residential properties, so neighbour impacts, visual screening, construction noise, vibration and access would need careful consideration - There may be wider historical and cultural context in the area, including that the site is a high point in the area, and is in moderate proximity to known heritage references, such as a redoubt/pā context, which requires cultural caution - Opportunities for restoration or cultural betterment may be less obvious on the site itself due to its modified nature, but should still be considered as part of the project either on or off site		
7.	**Key Discussion of Option B – Hillcrest Park**		
7.1.	The following matters were discussed in relation to Option B: - The site is located within an existing public park - The park is used by the community for recreation, walking, children's play, informal use and open-space amenity - The site includes mature trees and is near natural/ecological features - Development of the reservoir at this location would introduce a large above-ground structure into the park - There may be broader impacts on community use, public open space, landscape character and people's connection to the park - There would be localised impacts on neighbouring residential properties for Site B - The site is lower in elevation, which creates greater reliance on pumping and power, and reduces gravity-fed resilience in outage scenarios - The site may require a longer pipe route and more associated ground disturbance - The site is also being considered for wastewater storage, so if the reservoir is located here as well, it would have a cumulative impact that needs to be considered.	Note	All
8.	**High-Level Comparative Assessment Summary (preferred site)**		
8.1.	Summary of discussion on each of the sub-criteria:		

Sub Criteria	Justification - Site Specific Comments
Whakapapa Heritage, historical connection to site	Site B: Kōiwi/bone finds have been noted in the wider area near Site B (approximately 200–300m away), which indicates a need for cultural caution and further consideration. Site A: No known findings were raised directly on the site itself during discussion; however, the site is within the wider historical context of a pā / redoubt area (approximately 500m away) and should also be approached with appropriate cultural caution. Preference for Site A, one preferred Site B under this criteria.
Mauri mana o te whenua Lands, current, previous use	Site A: Already highly modified, being a former bowling club site with a decommissioned reservoir. Site B: Located within parkland with significant open green space and trees. Development at Site B may have greater implications for the existing landscape character and public open space values. For both sites, opportunities for restoration and enhancement should be considered where possible. Preference for Site A.

#	Item		Due	Action
	Mauri, mana o ngā wai Receiving waters	**Site A:** Opportunities for restoration and enhancement of receiving waters should be explored, particularly where works interface with wider catchment or gully systems. **This should be considered for both sites.** Site selection and design should seek to avoid unnecessary impacts on gully systems and associated water values.		
	Mauri o ngā taonga tuku iho Biodiversity, ecology, atmosphere	**Site B:** May offer stronger opportunities for ecological restoration and environmental enhancement given its parkland and biodiversity context, but it may also have greater potential to affect existing ecological values. **Site A:** Likely has fewer ecological constraints due to its already modified nature, but fewer immediate natural enhancement opportunities unless deliberately incorporated into the project. **Preference for Site A, but noted that potential restoration and offset opportunities could be explored within Fairfield Park.**		
	Ngā rauemi/pūtea Infrastructure investment	**Site A:** Already highly modified and contains existing infrastructure, which may reduce the extent of additional land disturbance required. **Site B:** May require a greater extent of new supporting infrastructure and associated disturbance, depending on final design and servicing requirements. **Preference for Site A**		
	Ngā mana o ngā tāngata People connection	**Site A:** Potentially more localised impacts on adjacent neighbours. **Site B:** May have broader impacts on people due to its location within a public park and its use by the wider community. From a resilience perspective, it was noted that in a power outage scenario fewer people may be affected if Site A is selected, due to its elevation and gravity-fed benefits. **Preference for Site A as lower community impacts and increased system resilience.**		
	Te Ture Whaimana & **Te Mana o Te Wai** Vision and Strategy for the Waikato River & recognising the fundamental importance and authority/status of water	Further site-specific assessment is required to identify how each option could support restoration, betterment, and protection of wai and associated cultural values.		
	Ngā taonga tuku iho Heritage	Further cultural and archaeological assessment may be required to better understand the heritage context of each site and confirm any implications for design, mitigation, or site selection.		

9. General Discussion Points

9.1. Te Ture Whaimana and Te Mana o Te Wai — Note — All

- The assessment should consider whether each option:
  - → protects and enhances wai and receiving environments
  - → avoids unnecessary impacts on waterways, gullies and catchments
  - → supports the health and wellbeing of water
  - → maintains the relationship of Mana Whenua with whenua, wai and taonga
  - → provides opportunities for restoration, betterment and environmental enhancement
  - → avoids outcomes that would undermine cultural values or freshwater outcomes
- Restoration opportunities should be considered regardless of which site is selected.

#	Item	Due	Action
9.2	**Restoration and Enhancement Opportunities** - Mana Whenua noted that infrastructure projects should seek to give back to the whenua and wai, not only take land for infrastructure. - Potential restoration and enhancement opportunities discussed included: → restoration or enhancement associated with the nearby Mangaonua gully system → planting and ecological betterment → protection or enhancement of receiving environments → improved cultural recognition through design → opportunities to strengthen the relationship between Mana Whenua and the whenua → consideration of wider catchment outcomes - It was noted that these matters should be carried forward into the next stage of design, consenting and cultural assessment.	Note	All
10.	**Cultural Values Assessment**		
10.1.	- It was discussed the need for a Cultural Values Assessment or a similar Cultural Assessment to support the project. - Mana Whenua values need to be assessed through a cultural lens, not only through technical MCA criteria. - It was noted that the detailed cultural assessment had not yet been progressed because the preferred site had not been confirmed. - The group agreed that once the site selection process progresses, the project team should work with Mana Whenua to confirm: → the appropriate cultural assessment process → who should be involved → what information is required → how the methodology should be documented → how mitigation, restoration and enhancement outcomes should be captured → how the assessment will inform the consenting / designation process - It was noted that the cultural assessment should capture the methodology and reasoning behind Mana Whenua feedback, so the process is clearly documented for future reference.	Note	All
11.	**Overall Outcomes**		
11.1	- Having worked through the relative assessment of each of the two options using the cultural framework, members summarised each of their preferences and key reasons why. - All representatives present identified Option A – 111 Cambridge Road as their preferred option. Some of the key reasons included: 11.1.1 **Option A** is more modified and has stronger technical resilience benefits, but has localised impacts on nearby neighbours 11.1.2 **Option B** has broader potential impacts on public open space, park users, landscape, ecology, and cultural values	Note	All
12.	**Actions**		
12.1.	Circulate the preliminary archaeological assessment to Mana Whenua, if not already provided.	**15.May**	**HCC**
12.2.	Book a Site Visit – Mana Whenua	**15.May**	**HCC**
12.3.	Discuss development of CVA and how mana whenua would like to be involved in the project going forward.	**15.May**	**HCC**

#	Item	Due	Action
13.	**Decisions**		
13.1.	It was agreed to proceed with **Option A – 111 Cambridge Road** as the preferred site.	Note	All
	End of Meeting		

- Meeting closed at 4.36pm.

Author:	*Mari Richtman*	**Date:**	*08.05.2026*
Email:	*To All*		
QA Check:	*Lucas Rhodes*	**Date:**	*12.05.2026*

Appendix G – Hillcrest Reservoir Site Selection Geotechnical Desktop Assessment

MOTT MACDONALD

Hillcrest Reservoir

Site selection desktop assessment

Hamilton City Council

Project:	Hillcrest Reservoir, Hamilton		
Our reference:	705100882-003	**Your reference:**	-
Prepared by:	Richard Cai	**Date:**	14 May 2026
Approved by:	Jared Jiang	**Checked by:**	Toby Zaege
Subject:	Site selection desktop assessment		

1 Introduction

Hamilton City Council commissioned Mott MacDonald to undertake a desktop study to inform the preferred site selection, the Project and Planning Assessment (PPA), consenting strategy and resource consent applications for a water reservoir in Hillcrest, Hamilton. The proposed development includes an above ground reservoir, a pump station and associated pipeline. The reservoir and pump station are currently proposed to be built on level ground. The structure importance level for both the reservoir and the pump station is assumed to be IL4 with a 100-year design life.

The study reviews publicly available data to identify potential site constraints and development risks associated with two sites identified through a multi-criteria assessment process. The sites are located at 111 Cambridge Road and 34 Masters Avenue. The review consists of published soil maps, historic ground investigations data, academic studies and Council GIS information.

Details of the two considered sites, including a redline site boundary mark-up, are provided in Table 1-1 below.

Table 1-1: Proposed reservoir site locations (Source: LINZ).

Site 1 – 111 Cambridge Road	**Site 2 – 34 Masters Avenue**
The site comprises three defunct lawn bowling greens, a recently demolished clubhouse and paved access roads. The site is generally level and sits atop a very gently sloped hilltop at approximately 62m reduced level.	The site comprises the western half of Hillcrest Park and is partially occupied by vegetation and a playground. The site sits at the eastern foot of a gently inclined hill at approximately 44m reduced level. The ground surface shows minor undulations.
Surrounding the site is predominantly residential housing.	Surrounding the site is predominantly residential housing.

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We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

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2 Geology and geomorphology

2.1 Historic investigations

A review of the New Zealand Geotechnical Database (NZGD)[1] shows multiple shallow hand augers undertaken within 300m of both sites. The investigation locations are included in the site overview images of Table 1-1. The investigations indicate the following ground conditions, Table 2-1:

Table 2-1: Inferred ground conditions.

Site 1 – 111 Cambridge Road	**Site 2 – 34 Masters Avenue**
Stiff to very stiff silty clay and clayey silt, encountered to depths of approximately 4.0mbgl. No deeper ground information is available.	Very stiff clay and silty clay, encountered to depths of approximately 3.0mbgl. No deeper ground information is available.
No groundwater was encountered in the published investigations.	No groundwater was encountered in the published investigations.

2.2 Geology and geomorphology

Figure 2.1 shows the soil map[2] of Hamilton City with a mark-up of the two site options in red. Both sites are located within the Low Rolling Hills geomorphic zone, with soils indicated to predominantly comprise Kainui Silt Loam. Towards the eastern property boundary of Site 2, the soil transitions to Rotokauri Clay Loam, followed by soils of the alluvial plain outside the designated site boundary.

Both Kainui Silt Loam and Rotokauri Clay Loam are generally characterized by being cohesive, clay-rich and with a low permeability. Kainui Silt Loam typically comprises a silty, tephra-derived cover layer overlying a more clay-rich, strongly weathered subsoil developed on Hamilton Ash, with evidence of impeded drainage at depth[3]. The Rotokauri Clay Loam is a heavy-textured soil that forms on colluvium derived from Hamilton Ash and is typically imperfectly to poorly drained.

[1] New Zealand Geotechnical Database, Ministry for Business, Innovation and Employment (https://nzgd.org.nz/)

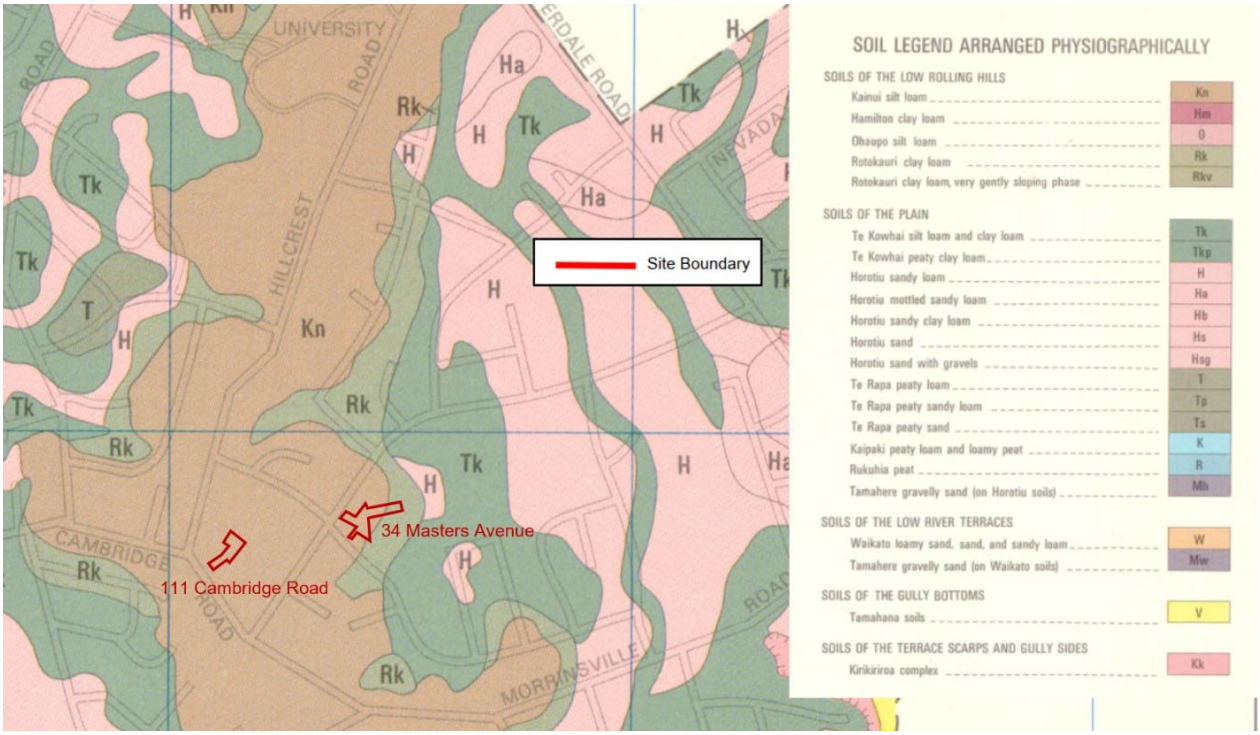
[2] Bruce, J.G. 1979: Soil map of Hamilton City. North Island, New Zealand.

[3] Lowe, D.J. 2008. Stop 2 Kainui silt loam and Naike clay, Gordonton Rd [Hamilton Basin]. In: Lowe, D.J. (ed), Guidebook for Pre-conference North Island Field Trip A1 “Ashes and Issues”, 28-30 November, 2008. Australian and New Zealand 4th Joint Soils Conference, Massey University, Palmerston North. New Zealand Society of Soil Science, Christchurch. Pp.55-72.

The overall terrain of the Low Rolling Hills geomorphic zone is characterised by gentle hills. Due to the elevated ground compared to adjacent alluvial plains and low permeability soil, groundwater levels close to the hilltops are generally deep. Towards the base of the hills, at the transition to alluvial plains, groundwater becomes increasingly shallow. No information on actual groundwater depths on site were available though.

The inferred depth to bedrock is greater than 20m, indicating subsoil class D as per NZS1170.5:2004. The nearest identified active fault is Kerepehi Fault, located roughly 40km to the east.

Figure 2-1: Soil map of Hamilton City 1979.



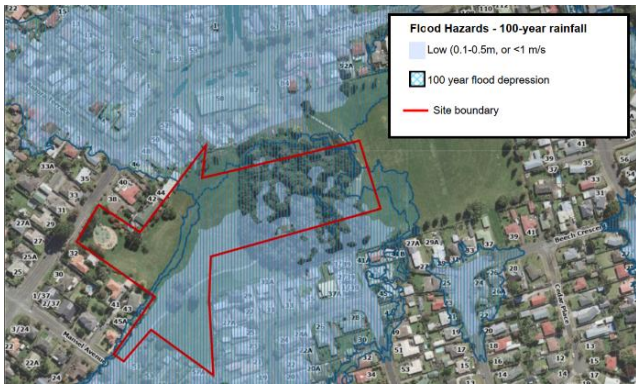
2.3 Hydrology

The nearest surface water body to either site is Waikato River, roughly 800m south of the two sites.

According to the Hamilton City Council Floodviewer[4], no flood hazard is mapped for Site 1 for 100yr ARI rainfall events, see Table 2-2. The flood hazard during 100yr ARI rainfall events is mapped as low for a zone along the southern boundary of Site 2. Low hazard is defined as a flood depth of up to 0.5m and a flood water velocity of no more than 1m/s.

[4] Flood mapping – FloodViewer, Hamilton City Council (https://maps.hamilton.govt.nz/floodviewer)

Table 2-2: 100yr ARI rainfall flood extents.

Site 1 – 111 Cambridge Road	Site 2 – 34 Masters Avenue
	

3 Geohazards

Table 3-1 provides a summary of potential geohazards identified for the site. These are based on a desktop review only and need to be verified via site-specific testing.

Table 3-1: Site geohazards.

Geohazard	Impact	Site	
		Site 1 – 111 Cambridge Road	**Site 2 – 34 Masters Avenue**
Groundwater table	High static groundwater table can increase buoyancy on buried structures and seepage into excavation during construction leading up to undercutting of battering slopes	The average groundwater level and its seasonal fluctuations are unknown. The impact of groundwater table on buried structures such as the proposed pipeline cannot be determined. Due to Site 2 being within a low lying landform in proximity to the Alluvial Plain, groundwater is assumed to be at shallower depth.	
Seismicity – Liquefaction	Seismically induced liquefaction causes soil loss of strength and may lead to structural building damage.	Due to the unknown groundwater level, the liquefaction risks for either side is undetermined. An assessment of liquefaction damage potential for an assumed static groundwater level of 4.0mbgl indicate 'none to minor' damage for the SLS and ULS case. Due to the assumed higher groundwater table at Site 2, the liquefaction risk may be elevated.	
Flooding – 100yr ARI rainfall	Flooding can result in loss of soil strength and bearing capacity through increase in porewater pressure.	No flood hazard is assigned to the site.	Parts along the southern site boundary have a low flood hazard risk assigned.
Slope instability	Slope instabilities may cause land movement damaging structures and threatening human safety during and post construction.	Both sites are flat to gently inclined. A review of aerial images and contour lines indicates no soil movement. Slope instability is not considered as a major risk at each site.	
Unknown or varying ground conditions	Unknown or variable ground conditions may lead to unforeseen variations in soil behaviour, potentially impacting	Site 1 is located on a hilltop within the Rolling Hills geomorphic zone, ground conditions are generally assumed to be uniform. Site 2 sits at the bottom of a hill, in the transition zone between Rolling Hills and Alluvial Plain. Ground conditions may vary across the site.	

Geohazard	Impact	Site	
		Site 1 – 111 Cambridge Road	**Site 2 – 34 Masters Avenue**
	foundation performance, constructability, and project cost.		
Settlement	Clay-rich soils are prone to consolidation settlement under loading. Excessive total and differential settlement may cause structural damage to buildings.	As per the available geological information, both sites are underlain by clay-rich soils with the potential of intolerable settlement. The settlement potential under loading needs to be assessed in detail.	
Expansive soils	Ground swelling and shrinking due to changes in moisture content of clayey soils can impact serviceability of structures.	Based on available geological information, the soils underlying both sites are clay-rich. There is a risk of excess expansivity which needs to be assessed through detailed investigation.	
Earthworks	Inclined, uneven terrain may require re-grading or the installation of retaining structures to enable construction and ensure operability over the structure's design life.	Ground surface is flat, no re-grading or retaining structures are expected to be required. Pipeline installation can be achieved via open-cut with temporary shoring support.	Ground surface is gently sloped. Minor re-grading is required to form a level platform. Pipeline installation can be achieved via open-cut with temporary shoring support.

4 Gap analysis

The following gaps in available site-specific information are identified. These need to be addressed via investigations and assessments to further support the design process and mitigate the identified geohazards.

- Site investigation data to inform soil classifications, engineering properties and geological unit extents.
- In-situ and laboratory testing to determine design parameters, soil expansivity, liquefaction and settlement risk etc.
- Groundwater level and long-term groundwater monitoring to inform design groundwater levels for buoyancy and ingress evaluations.
- CPT-derived liquefaction parameters.

5 Summary and recommendations

Following a desktop study of publicly available information, both sites are generally deemed suitable for the proposed development. The ground conditions at Site 1, 111 Cambridge Road, are overall considered more favourable, due to Site 2, 34 Master Avenue, being located within a low-lying area at the transition zone to the Alluvial Plains and associated potential for varying ground conditions and elevated groundwater as well as 100-year ARI flood hazard.

Both sites share constraints such as clay soils with potential for significant consolidation settlement and expansivity, as well as overall uncertain groundwater conditions.

The likelihood of liquefaction at each site is considered low, primarily due to the underlying clay soils with a high plasticity index, which reduces liquefaction risk.

Targeted investigations will be necessary to close information gaps and address geohazards in design. A site-specific seismic hazard assessment should be conducted to determine the return period applicable to the proposed IL4 structures and provide guidance to structural designers regarding seismic design actions.

These comments are preliminary and reflect the current proposed information, assigned importance level, and anticipated design life at the time of this report. Updates will be required once a preferred site is selected and as the design evolves.

6 Site selection criteria

The site suitability should be evaluated with consideration of existing geohazards and long-term operability. As such, uniform and predictable ground conditions with deep groundwater are beneficial. Additionally, sites located outside identified hazard zones are to be considered more suitable.