



CLUTHA MATA AU HYDRO SCHEME – LAKE HĀWEA SECURITY OF ELECTRICITY SUPPLY - FAST TRACK REFERRAL APPLICATION

LANDSCAPE AND NATURAL CHARACTER EFFECTS SUMMARY REPORT

26 June 2025

Introduction

1. Contact Energy Limited (Contact) owns and operates the Clutha / Mata-Au Hydro Scheme (the Scheme/CHS). Lake Hāwea is one of three large feeder lakes to two downstream hydro-electric power stations (Clyde and Roxburgh) (refer **Figure 1**). Lake Hāwea has a control structure on its outlet (Hāwea Dam) that was constructed in the mid-1950s and commissioned in late 1958. The Hāwea Dam increased the depth of the lake by an average of 15.2 m and the area by 28.5 km². (refer **Figure 2**).

Background

2. Aotearoa New Zealand is undergoing rapid decarbonisation and electrification as existing thermal generation is replaced with renewable generation. Aotearoa New Zealand has a large supply of hydroelectricity and geothermal resources that contribute to approximately ~80% of New Zealand's electricity supply. New Zealand has three key South Island storage lakes; one being Lake Hāwea which provides 300 GWh of water storage.
3. Contact holds existing consents that enable the operation of the CHS for each of the lakes and associated dams that form part of the CHS. This includes Lake Hāwea, the primary water storage reservoir of the CHS. The normal consented operating range for Lake Hāwea is between 338m asl and 346m asl. Contact is also able to lower the lake to 336m asl in exceptional circumstances, when there are power shortages and national electricity demand requires that more electricity needs to be generated from the CHS. This is determined by Transpower as the National Grid owner and System Operator.
4. The existing CHS consent conditions were attached to consents granted in 2007 in an electricity system that has since changed significantly. The conditions were developed for an electricity system where firming was generally met by thermal plants (i.e. gas and coal). Therefore, there was a lesser need for hydro assets to be flexible within the broader generation system. With an ongoing decline in thermal generation, and growing demand for

renewable electricity, there is a need to find alternative methods to firm the growing proportion of intermittent renewable generation¹.



Figure 1 Clutha / Mata-Au River Hydro Scheme Overview

¹ Wind and solar energy are expected to provide the bulk of the growth in future renewable generation.



Figure 2 Lake Hāwea Landscape Context

Previous Lake Level Reductions

5. Prior to the creation of the culvert gate structure to control the level of Lake Hāwea to feed the Roxburgh dam in 1958, the natural water level was 20m lower than that currently provided by the existing consent, at approximately 318m asl.
6. Prior to impoundment in 1958, annual fluctuations in lake levels were approximately two metres. Following regulation this fluctuation increased, with low levels occurring in 1965 (330 m), 1976 (327 m) and 1977 (330 m). A consequence of the low levels in the lake in 1976 and 1977 was that the maxima during the intervening year was only 336 metres, and the lake spent a prolonged period at low levels. In 1978 the lake was operated without a draw down to let it refill.
7. Since 1980, lake levels have not experienced lows to these levels, with much reduced variation. The lake was at a minimum during the 1980's in 1982 when it reached 337.5 m and in 1989 when it reached 338 m. In the 1990's it fell below 340 m on three occasions (October 1993, 339.6 m; August 1997, 338.3 m; August 1999, 335.6 m). Between 2000 and 2025 the lake level has regularly lowered to below 340 m (during 18 of the 25 years), with these annual minima typically in the range of 338-339 m.
8. The maximum annual variation in depth since 1980 has been 9.6 m (1982). Lowest levels in the lake are typically associated with the winter following a drought year. Lake levels on average are low in winter and early spring, with the lake largely full for the remainder of the year. The time taken for the lake to refill after a draw down depends on the level to which the lake is dropped.
9. In 1977, the level of Lake Hāwea was dropped to 327.6 m. **Figure 3** is a photograph taken from a point close to the camping ground boat ramp, at the southern end of Lake Hāwea during this time.



Figure 3 Lake Hāwea at a level of 327.6m asl in November 1977. The proposed lake levels **will not be** this low. Operating minimum lake level is proposed to be 336m (some 8.4m higher) and for contingency storage events a minimum of 330m (asl) is proposed) and that is solely in an extreme electricity shortage (which has not occurred under the current consents granted in 2007) as explained below.

The Proposal

10. As electricity demand increases, and intermittent renewables (such as wind and solar generation) replace thermal generation in the market, Aotearoa New Zealand will need to ensure there is enough flexibility in electricity generation to ensure demand is met. Hydro generation accompanied with water storage is a valuable form of firming that can flexibly support balancing the electricity system in the long term.
11. Contact is seeking to be referred under the Fast-track Approvals Act 2024 (FTAA) to obtain new consents, as well as consequential changes to its existing consent conditions, to allow the operation of the CHS in a way that supports the changing demands of Aotearoa New Zealand's electricity market. The new consents seek the normal minimum operating level of Lake Hāwea to be lowered to 336m. In addition, Contact is seeking to enable the contingent storage level of Lake Hāwea to be lowered to 333m and 330m when specific triggers are met (discussed further below).

Clutha Mata au Hydro Scheme New Consents Sought

12. As noted above, Contact holds a suite of resource consents that enable the operation of the CHS. This includes consent to dam water in Lake Hāwea (2001.383). This consent specifies the normal operating range for Lake Hāwea, as well as the contingent storage operating range for Lake Hāwea. The conditions of this consent relevant to this Project are listed below, along with the proposed new consents sought. Collectively, the proposal will contribute to increasing the security of electricity supply in New Zealand. The potential effects on landscape and natural character associated with the proposed consents sought are assessed further in the sections below.

Lake Hāwea operating lake level

13. The purpose of this consent is to maintain lake levels within the specified range to balance the purpose of the lake (water storage for power generation) with effects of level changes. The operating range specified in the existing consent conditions and the proposed new consent as part of this project are as follows:
 - Existing consented operating range: 338-346m asl
 - Proposed new consent operating range (this project): 336-346m asl
14. The new consent sought will increase the ability for Contact to generate electricity during dry periods (reducing dry period volatility), improve system security, reduce spill and increase the renewable electricity generated from the CHS.

Lake Hāwea minimum level for contingent storage

15. The purpose of this condition is to define the minimum allowable lake level when contingent storage is required. The existing consent conditions and proposed new consents are as follows:
 - Existing consented contingent storage minimum lake level: 336m asl.
 - Proposed new consent contingent storage minimum lake level (this project):
 - i. Contingent storage to 333m asl to be available at alert level (4% Energy Risk Curve (ERC²)) (this is the current Contingent Storage Release Boundary (CSRB³) for Lake Hāwea).
 - ii. Contingent storage to 330masl to be to be available at the 8% ERC.
16. This new operating regime will contribute to increased system security by enabling Contact to have access to increased electricity generation during defined low storage contingency events, as defined by the system operator (i.e. only when Transpower considers there is a real risk of New Zealand running out of electricity if the contingent storage is not accessed).

Purpose of this Report

17. This report provides an initial assessment of the potential landscape and natural character effects of the proposal by Contact to seek new consents to provide for changes to the normal operating range and contingent storage levels of Lake Hāwea and identifies any potential opportunities to avoid, remedy or mitigate the potential effects of those changes.

Methodology

18. Briefing meetings have been held with the project team to confirm the approach and the extent of the landscape, visual and natural character effects to be considered.
19. Field work has not been undertaken for the initial assessment for the FTAA Referral application process as the authors are familiar with the CHS and its' landscape context, having undertaken several projects in the area, including the consideration of landscape, visual and amenity effects of the existing operations of the CHS. Further, more comprehensive, assessment will be undertaken as part of the Substantive Application.
20. The following methodology has been used to assess the landscape and visual amenity values of Lake Hāwea and the potential effects of the project on those values. The assessment methodology is based on Te Tangi A Te Manu Aotearoa New Zealand Landscape Assessment Guidelines Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022 and this section outlines the process that has been undertaken:

² ERC – Energy Risk Curve - % chance of an energy shortage as modelled by Transpower. Currently Lake Hāwea contingent storage is available once the ERC 4% chance of the system having insufficient energy (this is the Alert level) – this level has not been triggered since the current consents were granted (2007). ERC is modelled and determined by Transpower.

³ CSRB – Contingent Storage Release Boundary – the trigger for access to contingent storage – current triggers are the 4% ERC (Alert status) and the 8% ERC (Consumer savings campaign)

- i. A desktop review of the project site area (Lake Hāwea), including a review of relevant documents and statutory provisions;
 - ii. Reference to photographs and records from several site visits, including to the surrounding roads and areas. Site visits have been made to the general area during and since 2016;
 - iii. An assessment and description of the existing landscape context of Lake Hāwea and the surrounding area;
 - iv. An analysis of the landscape character and values of Lake Hāwea;
 - v. An assessment of the potential landscape (including visual) effects of the project on the landscape context; and
 - vi. Assessment of the effects of the project on the natural character values of Lake Hāwea.
21. A change in a landscape does not in itself mean that a proposal will result in an adverse effect on the values of that landscape:
- “Change itself is not an effect: landscapes change constantly. It is the implications of change for a landscape’s values that is the effect.”⁴*
22. A detailed description of the work undertaken for each process listed above is contained under the relevant headings throughout the report.
23. A full landscape, visual and natural character effects assessment will be completed for the substantive application that will be made under the FTAA.

Existing Environment – Landscape Context for Lake Hāwea

24. Lake Hāwea is one of the lakes that provides the natural catchment for the Clutha Mata au River. The Clutha Mata au River is a landscape system that spans from the mountains to the sea – from (almost) one side of the South Island - Te Waipounamu to the other⁵. While the mountains, catchments, tributaries and rivers cross territorial boundaries, from a Te Ao Māori perspective the landscape system is all connected and is acknowledged as a single system which includes and encompasses the interconnected idea of mountains to sea.
25. The te reo name ‘Mata au’ which is given to both the northern branch at its lower reaches and to the river itself means a current or eddy on the surface of water,⁶ referencing the swirling waters of the river for most of its length. The entire area is ancestral land to many whānau within the iwi of Kāi Tahu whānui and as such is of cultural significance.

⁴ Refer 6.03 - Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines.

⁵ The upper catchments of Lakes Wānaka and Whakatipu are approximately 25km from the west coast of the South Island and drain to the Pacific Ocean, almost 250km (as the crow flies – the river length is 338km) to the southwest at the mouths of the Clutha Mata au Koau and Matau Branches.

⁶ <https://teara.govt.nz/en/1966/clutha-river>

26. The Clutha Mata au River is connected to other identified outstanding natural features and landscapes throughout its catchments, including Mount Alpha, the Remarkables, Dublin Bay, Lake Whakatipu, Lake Wānaka, Lake Hayes, the Kawarau River, the Shotover River (Kimi Ākau), Lake Dunstan (Te Wairere) and the Roxburgh Gorge. While each feature or landscape is distinctive and recognisable in its own right, they are a relatively small part of a much larger and overall system that is connected to and by the Clutha Mata au River.

Clutha Hydro System

27. Within the broad landscape and river context of the Clutha Mata au River as described above, the CHS includes the culvert gate structure that controls flows from Lake Hāwea into the Hāwea River, the Clyde and Roxburgh dams and the respective Lakes Dunstan and Roxburgh. Of the 338km length of the Clutha Matau Au River system, the dammed lakes hold water within approximately 60km of the length – approximately 30km at Lake Dunstan and 30km at Lake Roxburgh. The lakes retain the long, enclosed lineal characteristics of a river system, however, the waters are calmer and flatter, as the waters widen towards the head of the dams. The Clutha Mata au River is a highly modified environment due to the modification associated with the construction of the CHS.

Lake Hāwea

28. Lake Hāwea is a large (143.6km²), deep (maximum depth 384m) glacial lake. The main section of Lake Hāwea is oriented approximately north-south and is on average 5km wide and 20km long. The Hunter Valley Arm extends a further 25km to the north-east, to meet the broad, braided riverbed of the Hunter River. Another smaller arm extends east-west approximately halfway up the lake, close to a feature commonly known as the “Neck”, which is a narrow area of land separating Lake Hāwea from Lake Wānaka.
29. To the south of the lake is a terminal moraine formation which created the original lake. Here the settlement of Lake Hāwea has grown, with residents taking advantage of the northerly aspect and views over the lake.
30. Along the western shoreline is State Highway 6, which is the main route to Makarora and the West Coast.
31. Some 50 streams discharge into Lake Hāwea, over half of which are tributaries to the Hunter River. The most notable water courses flowing into the lake are the Hopwood River, the Dingleburn, Timaru Creek and Johns Creek.
32. Lake Hāwea is bounded on three sides by high mountains. To the east are Breast Hill (1577 m asl), Dingle Peak (1833 m asl) and Mount Arnold (1973 m asl). To the west are Mount Maude (1315 m asl), Mount Burke (1402 m asl) and Terrace Peak (2027 m asl). These mountains create an overall impression of the dominance of natural elements and processes. The human-influenced elements – houses, roads and some modified agricultural landscapes – are secondary (but complementary) features.

33. The landscape includes Lake Hāwea, (refer to **Figures 4 to 6**), gravel embankments, steep mountains, walking and cycling paths and the township of Lake Hāwea. This landscape forms the natural character of the area and provides recreation enjoyment to the local community and visitors for activities such as fishing, boating, jet-skiing and swimming.
34. The waters of Lake Hāwea are clear and are in good ecological condition, similar to natural reference conditions, with high conservation value systems.⁷ The water colour and clarity is notable when experiencing the landscape of Lake Hāwea.
35. The Lake Hāwea Control Structure, which includes the Hāwea Dam, is situated at the south-western corner of the lake. The Hāwea Dam is 30m high, earth-filled and includes a concrete control structure with four radial gates to control the outflow.

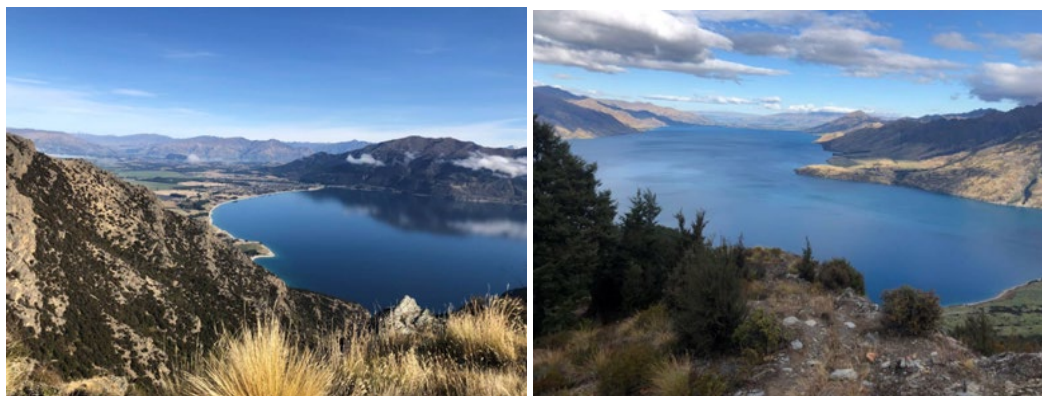


Figure 4 Lake Hāwea Aerial Photos

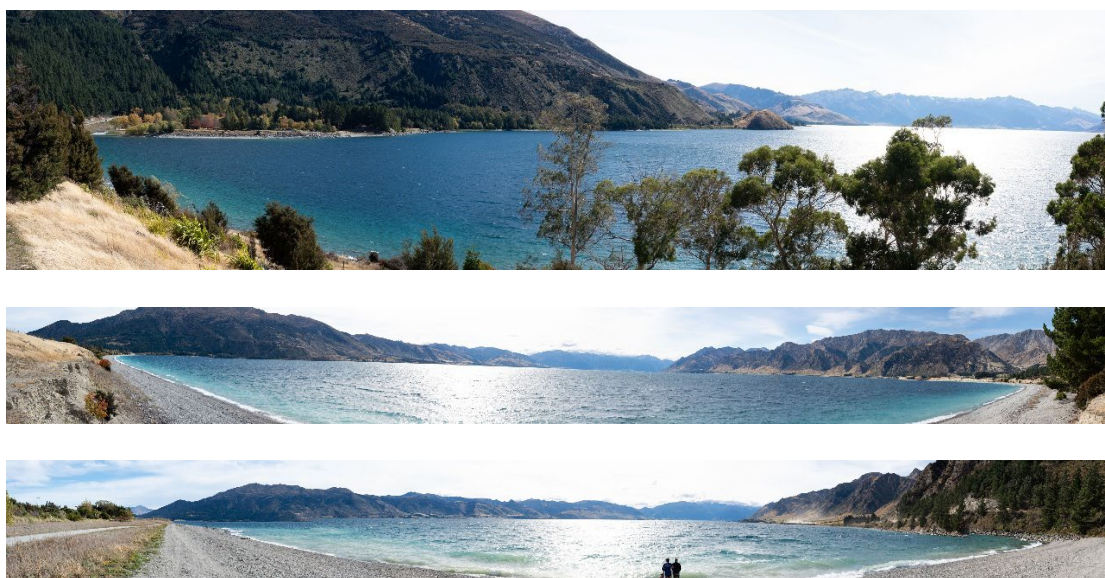


Figure 5 Lake Hāwea from the southern shores.

⁷ Clutha Hydro Scheme Lake Hāwea Operating Range. A summary of potential effects on ecological values. Greg Ryder Consulting. 2025. Page 17.

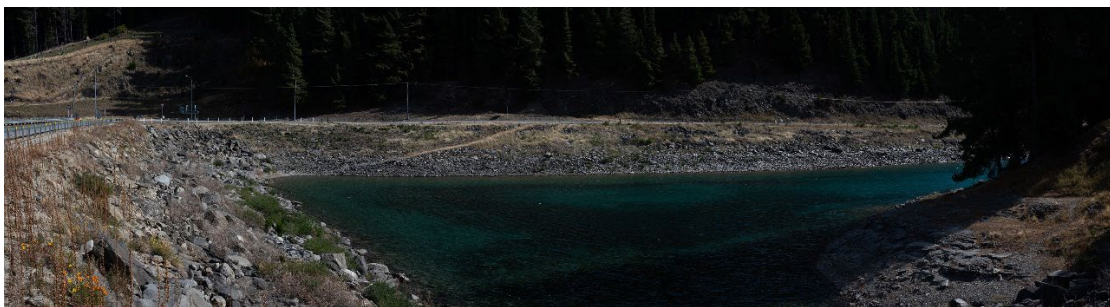


Figure 6 Lake Hāwea outlet and earth dam.

Landscape and Natural Character Values

Landscape Values

36. TTatM recommends the following definition of landscape in an Aotearoa New Zealand context⁸:

Landscape embodies the relationship between people and place. It is the character of an area, how the area is experienced and perceived, and the meanings associated with it.

37. In an Aotearoa New Zealand context landscape is conceptualised as the intersection or overlap of three dimensions: physical, associative and perceptual⁹:
- i. 'Physical' means both natural and human features and the action (and interaction) of natural and human processes over time.
 - ii. 'Associative' means intangible things that influence how places are perceived – such as history, identity, customs, laws, narratives, creation stories, and activities specifically associated with the qualities of a landscape.
 - iii. 'Perceptual' means both direct sensory experience and broader interpretation through the senses. While sight is the sense most typically applied to landscape assessment, direct sensory perception importantly includes all of the senses.
38. TTatM lists a range of typical factors that might be considered under the physical, associative and perceptual dimensions in a landscape assessment.
39. Landscapes also have character and values that relate to the three dimensions. Values are the various reasons a landscape is valued – the aspects that are important, or special, or meaningful. In the case of the Lake Hāwea water levels the relevant landscape to be assessed is the Lake itself and the littoral areas that will be physically affected by changes to the water levels. Areas of the catchment that are further away from the immediate area of

⁸ TTatM. Page 76.

⁹ TTatM. Pages 72 and 79.

the lake and its' margins will not be affected by the proposal to alter the operational and contingent water storage levels.

40. The specific combination of the physical, associative and perceptual values that contribute to the valued landscape of Lake Hāwea and its margins are:
- i. The open, clear water body of Lake Hāwea;
 - ii. The geological history and process of the glaciation which formed the Lake Hāwea valley and the terminal moraine that dammed the south end of the valley, creating the natural lake;
 - iii. The fisheries and bird communities that live within and on the edges of the Lake;
 - iv. The rise and fall of the water level of the lake within the operational range and the subsequent exposure and covering of the gravel beaches in the littoral area.
 - v. The ability to access the Lake and its' edges for recreational activities, including fishing, water skiing, swimming, walking (Lake Hāwea Foreshore Track and Lake Hāwea Access Track) and camping (Lake Hāwea Holiday Park and Kidds Bush).¹⁰
 - vi. The ability to access the lake and the beach directly from the Lake Hāwea foreshore.
 - vii. The history of the construction of the dam and outlet structure at the south end of the lake in the 1950's and the subsequent rise and then control of the water levels. The associated history of electricity generation at the Clyde and Roxburgh hydroelectric dams which partly controls the changes in water levels in Lake Hāwea.
 - viii. The settled and developed area at the south end of the Lake at Hāwea in contrast to the relatively undeveloped and raw lake shore around the rest of the lake.
 - ix. According to Te Ao Māori creation stories Hāwea (the lake) was dug by the Waitaha explorer Rākaikautū with his kō (Polynesian digging stick) named Tūwhakaroria. Manuhāea was traditionally a kāinga mahinga kai (food-gathering place) and kāinga nohoanga (settlement) located on the eastern side of 'The Neck' – the narrow isthmus of land separating lakes Hāwea and Wānaka. Turihuka is the Māori name for Silver Island located in Lake Hāwea. Turihuka is a Waitaha ancestor who is a direct descendant of the explorer Rākaikautū who dug the freshwater lake of Te Waipounamu.¹¹
 - x. The atmospheric conditions that create changes in the light and the 'mood' of the lake (clear blue-sky days, cloudy, rainy conditions, the sun or moon setting or rising over the lake, the predominant wind that is channelled along the lineal lake valley). The Lake Hāwea landscape is raw and perception of the Lake is affected by weather – the sun on your face, the cold wind across the lake or the sound of the waters lapping at the shore.

¹⁰ Source: [Outdoor Access Map](#) Herengaanuku.govt.nz

¹¹ Source – The Ngāi Tahu cultural atlas – Kā Huru Manu. [Atlas | Cultural Mapping Project](#)

- xi. Views of the Lake and its bold surrounding landscape, particularly the enclosing mountains of Mount Burke, the Young Range and the Huxley Range, from its' edges and in particular from the settlement of Hāwea at the south end.
41. The landscapes of the Queenstown Lakes District are rich with values and associations. Approximately 96% of the District is identified within the District Plan as being an outstanding natural feature or landscape. Lake Hāwea is one of the less developed and settled of the main lakes in the district.¹² Lake Hāwea is valued for its raw landscape values as described above.

Natural Character Values

42. Natural character has specific application in Aotearoa New Zealand because s6(a) of the RMA provides, as a matter of national importance, for¹³;

the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development.

43. TTatM adopts the interpretation that:

Natural character is an area's distinctive combination of natural characteristics and qualities, including degree of naturalness. Natural character and naturalness is not the same thing.

44. Further guidance is given in the NZCPS 2010 in relation to the matters that should be taken into consideration in the identification of the natural character of the coastal environment. In the context of Lake Hāwea and the surrounding area, the consideration of natural character is specific to the Lake and its' tributaries, the Hāwea River and their margins.
45. The physical characteristics and attributes of the Lake and the surrounding area are described above. The ecological and natural values of the Lake are described in the Ryder Ecological Assessment.
46. The characteristics and qualities of natural character are generally identified as being abiotic (landform and water, hydrological processes, geomorphology, climate) and biotic aspects (flora and fauna, ecology).
47. The specific combination of the abiotic and biotic characteristics and qualities that contribute to the natural character of Lake Hāwea and its margins are:
- i. The naturally impounded Lake behind the moraine dam at the south end of the Lake;
 - ii. The earth dam and control structure that was constructed in the mid 1950's and commissioned in 1958;

¹² In comparison with settlements and towns on the shores of Lakes Whakatipu, Wānaka and Dunstan.

¹³ TTatM Page 205.

- iii. The increased water levels (approximately 20 metres above pre dam mean natural Lake level of 327.7m (with annual variation of 2m)) of the Lake and control of the levels using the dam and control structure;
 - iv. The exposed littoral area of gravel beaches between the minimum and maximum operating levels (between 338m asl and 346m asl under normal circumstances);
 - v. The subsequent changes in land use and vegetation patterns on the margins of the operating levels of the Lake, including terrestrial vegetation, lake edge reserves and structures; and
 - vi. In terms of the ecological health of Lake Hāwea and its' margins, the Ryder Ecological Assessment¹⁴ finds that Lake Hāwea is in good to excellent ecological health, supporting salmonid fisheries in good condition, although not diverse, native fish are very mobile and are adaptable, bird communities are in good health and are also adaptable.
48. Despite the construction of the dam and outlet structure and the fluctuation in water levels, Lake Hāwea retains a high level of natural character which is enjoyed by the local community and visitors to the Lake.

Landscape and Natural Character Effects

49. A summary of the potential landscape and natural character effects of the proposal are outlined in the following sections, along with identification of the potential measures to avoid or mitigate any residual effects.
50. As described above, there is some overlap between landscape values and effects and natural character values and effects. This is particularly the case with Lake Hāwea as the lake is a feature that is within a much broader landscape, including the surrounding mountains and ranges. The landscape and natural character effects of the operational and contingent water level proposals are assessed against the values that have been identified above.

Lake Hāwea operating lake level

51. The lowering of the minimum normal operating level of Lake Hāwea by 2m would lead to an increased width and depth of gravel beaches around the edge of Lake Hāwea. The existing operating levels of 338-346m asl (eight vertical metres) would be increased by 25% to ten vertical metres. The community at Hāwea would be the most affected by the decrease in the lake levels, with a wider beach and further distance to reach the waters' edge. Shallower beaches at the Neck and the Kidds Bush Reserve Camping area would be affected. The northern and eastern side of the lake catchment is much steeper, so less horizontal land would be exposed.

Landscape Effects

¹⁴ Clutha Hydro Scheme Lake Hāwea Operating Range. A summary of potential effects on ecological values. Greg Ryder Consulting. 2025.

52. As there is no physical construction required to change the operational lake level, there will be no additional structures or changes to the physical landscape on the edges of the Lake (other than any consequential construction that might be recommended for mitigation).
53. Lake edge vegetation is unlikely to be affected in any way by the reduction in the operational water levels.
54. The effects on the natural values of the Lake (water quality and habitat values) are assessed below in relation to natural character values.
55. Increased and more regular periods (during late winter/early spring) of lower water levels increases the dust generation during windy conditions, although noting this will be dependent on weather conditions at the time. Extended periods to refill the lake from lower lake levels from the natural tributaries (the Hunter River) would lead to longer periods of lake level draw down and refill. Wide gravel beaches are an existing characteristic around the lake edge, regularly up to 50-60 metres to the waters edge at the Hāwea foreshore.
56. Lower operating levels could affect the ability of people to access the water for recreational activities. If boat ramps are not accessible getting onto or into the lake may become difficult. Boat ramps are available at the Lake Hāwea Holiday Park and at The Neck. In other places around the shores of Lake Hāwea small boats and watercraft are launched from the beach. Boat ramps and boat launching beaches will need to be checked to ensure that they can still be used at a reduced operational water level by 2 metres at 336m. Extensions to boat ramps at the Lake Hāwea Holiday Park and The Neck may be required to ensure access during the lower operating water levels.
57. The ability to access the edges of the Lake for walking and hiking or to walk across the wider beaches to reach the water's edge will be retained.
58. The Te Ao Māori creation stories and history of occupation at Lake Hāwea will not be affected by the changes in operational water levels.
59. Similarly, the history and associations with the construction of the dam and the use of Lake Hāwea as storage for the hydroelectric dams on the CHS will also not be affected by the changes in the operational water levels, other than to add another layer in the history of the Lake and its' place in supporting the CHS and renewable electricity generation.
60. Lower operating levels will affect views of the lake from the edges (See **Figures 4 to 6** above). The lake will appear less 'full' with a wider gravel beach framing views of the lake, particularly from the south end at Hāwea and at The Neck. The existing operational water levels, with a variance of eight (vertical) metres has an existing effect on views of the lake. This change to the views of the lake is already experienced by the local community at Hāwea and visitors to the lake. An additional 2 metres of operational range will lead to an extension of this existing visual effect, however it will not be a new effect.
61. The main landscape effects of the proposal are the potential restrictions to access to the Lake, the generation of dust and the changes to the views of the Lake, which are essentially amenity effects on the local community and visitors to the lake. The existing CHS conditions

of consent require Contact to prepare and implement a Foreshore Landscape Management Plan (FLMP) for the Hāwea foreshore. The FLMP manages the effects of the CHS (and the fluctuation water levels) on the landscape values of the foreshore area in front of the settlement, including to the east to the Gladstone Gap and Johns Creek. The FLMP will continue to be used to monitor and manage the effects of the CHS on this area.

Natural Character Effects

62. The lake itself will be smaller in size and will sit at a level two metres lower but it will not otherwise fundamentally change as a result of the reduced operational levels. A reduced operational water level by a further two metres will not affect the good to excellent ecological health of the lake as the fish and bird communities that live in or on the edge of the lake are mobile and adaptable and will move to occupy new feeding or habitat locations.
63. The wider gravel beaches and longer periods of exposure could create more habitat on the edges of the Lake for shore birds, but could also change the feeding locations for birds within the edges of the lake itself.
64. The Ryder Ecological Assessment finds that the fish and bird communities within and on the edges of Lake Hāwea are mobile and have adapted to the current operational water level changes and are generally in a healthy condition. The fish and bird communities would be likely to adapt to a relatively small (25% or two metre) change in the operational water levels.
65. The change in the operational water levels will not affect the community's ability to appreciate the shore bird and fish communities within and on the edges of the Lake.
66. In a broad sense, the natural character of the Lake is largely maintained with the reduced operating level, with the wider beaches and increase in silty lake margins being natural elements in the wider context of the Lake and surrounding mountains. Although these may be considerable changes to the appearance of particular areas, they do not significantly alter the natural character in the wider context.

Lake Hāwea minimum level (change to Contingent levels)

Landscape Effects

67. The three (4% ERC) and six (8% ERC) metre lower contingent lake levels would lead to a broader area of exposed gravel beach and an expansion of the potential effects of the lowering of the operating lake levels as assessed above.
68. The reduction in the minimum lake level to 330m asl would be much less regular¹⁵, but with such a large reduction (up to an additional six metres) the amenity and visual effects during the use of contingent storage levels would be considerable, particularly on the Hāwea community. This increase in the level of effect does however need to be considered in light of the likely frequency of reduction to minimum levels, noting that the 4% ERC has not been

¹⁵ Noting above, that 4% ERC has not been triggered since the current CHS consent conditions have been in place (2007).

triggered since the current conditions of consent have been in place – 2007. Climate change and electricity demand may change the likely frequency of a 4% ERC.

69. As there is no physical construction required to change the contingent water levels, there will be no additional structures or changes to the physical landscape on the edges of the Lake (other than any consequential construction that might be recommended as mitigation).
70. The effects on the natural values of the Lake (water quality and habitat values) are assessed below in relation to natural character values.
71. The landscape effects of the lowering of the contingent lake levels as described above would lead to an extension or increase of the effects already identified above in relation to the increased operational lakes levels. Effects relating to increased dust, wider beaches, potential impaired access to the water at boat ramps and boat launching beaches, potential reduced access at beaches and views of the reduced lake levels will all be outcomes of the lowering of the contingent lake levels. In conjunction with these physical effects, a longer period to refill after a contingent draw down of the lake levels is likely to mean that the effects identified above could occur over a longer period of time. However, as previously noted, the contingent lake levels will be much less frequent than the operational level draw downs and will only occur during electricity emergency events, as determined by Transpower.
72. As identified above, lake edge vegetation, the access to lakeside walking tracks and reserves, the Te Ao Māori creation stories and history of occupation at Lake Hāwea and the history and associations with the settlement at Hāwea and the construction and operation of the CHS will not be affected by the infrequent increased contingent lake level draw down.
73. The main landscape effects of the contingent lake levels proposed include the potential restrictions to access to the Lake, the generation of dust and the changes to the views of the Lake, which are essentially amenity effects on the local community and visitors to the lake. As noted above, the existing CHS conditions of consent require Contact to prepare and implement a Foreshore Landscape Management Plan (FLMP) for the Hāwea foreshore. The FLMP manages the effects of the CHS (and the fluctuation water levels) on the landscape values of the foreshore area in front of the settlement, including to the east to the Gladstone Gap and Johns Creek. The FLMP will continue to be used to monitor and manage the effects of the CHS on this area and will be updated to reflect the new consents sought in this application to ensure the appropriate management measures are in place to address these potential effects.

Natural Character Effects

74. The lake itself will be smaller in size and will sit at a level as much as six metres lower than the operational level but it will not otherwise fundamentally change as a result of the reduced contingent levels. A reduced contingent water level by a further six metres will not affect the good to excellent ecological health of the lake as the fish and bird communities that live in or on the edge of the lake are mobile and adaptable and will move to occupy new feeding or habitat locations.

75. The wider gravel beaches and longer periods of exposure could create more habitat on the edges of the Lake for shore birds, but could also change the feeding locations for birds within the edges of the lake itself.
76. The Ryder Ecological Assessment finds that the fish and bird communities within and on the edges of Lake Hāwea are mobile and have adapted to the current water level changes and are generally in a healthy condition. The fish and bird communities would be likely to adapt to a very infrequent change in the contingent water levels.
77. The change in the contingent water levels will not affect the communities' ability to appreciate the shore bird and fish communities within and on the edges of the Lake.
78. In a broad sense, the natural character of the Lake is largely maintained with the reduced contingent level, with the wider beaches and increase in silty lake margins being natural elements in the wider context of the Lake and surrounding mountains. Although these may be considerable changes to the appearance of particular areas, they do not significantly alter the natural character in the wider context.

Proposed Mitigation

79. The proposed changes to the operational water levels will likely primarily generate adverse effects on the amenity of the lake edge, particularly at the Lake Hāwea foreshore. Those effects are mainly related to dust generation, access to the lake at boat ramps and the shore and visual effects. The effects of the changes to the operational water levels can be managed through the existing Hāwea FLMP in response to any issues that arise from the proposal. It is recommended that Contact ensures appropriate access to the lake margin at the existing boat ramps is maintained to mitigate any potential effects on access to the lake.
80. The lowering of Lake levels during 4% and 8 % ERC events, by up to 3 m and 6 m respectively, is expected to have an increased effect on landscape, visual amenity and natural character, beyond the normal operational water level range.
81. There will be considerable visual effects associated with the lowering of the Lake to these levels, however this will occur very infrequently, as noted above, Contact has not been required to access the contingent storage since the current conditions were put in place in 2007. Therefore, specific mitigation has not been proposed at this stage of the assessment and potential mitigation options will be investigated further and proposed as part of the substantive application. As the main effect will be on visual amenity and boat ramp access, conversations will also be undertaken with the community to inform the proposed mitigation measures. This may include improving access to the lake, enhancing public amenities in the area, and if required, specific mitigation to properties within the Lake Hāwea township.
82. In addition to the above, an assessment of the dust effects will be completed as part of the substantive application, and this will likely require the preparation and implementation of a dust management plan for the project, outlining the appropriate methods for Contact to implement during these events.

Conclusions

83. The CHS includes the culvert gate structure that controls lake levels and flows from Lake Hāwea into the Hāwea River¹⁶, and subsequently through the Clyde and Roxburgh dams via the respective Lakes Dunstan and Roxburgh behind the dams.
84. The CHS sits within the large (regional) scale mountains to sea landscape system of the Clutha Mata au River and its' catchments. Parts of the Clutha Mata au River have been turned into impounded lakes with flat sheets of water providing storage for the Clyde and Roxburgh dams. While significantly different from its' original natural state, the Clutha Mata au and the CHS retain elevated landscape values.
85. Included within the Clutha Mata au River system is Lake Hāwea, which is bound by high mountains (Breast Hill, Dingle Peak and, Mount Arnold), State Highway 6 to the west and the settlement of Lake Hāwea to the south. Lake Hāwea provides recreational enjoyment to the local community and has high natural character, despite the impounded and controlled levels.
86. The existing infrastructure of the CHS is well managed by Contact and is valued by the local community.
87. The existing operational range of the water levels of Lake Hāwea is 338m asl to 346m asl – a range of eight vertical metres. The proposal includes a broadening of the operational range to 336m asl to 346m asl or a range of ten vertical metres. The fish and bird communities at Lake Hāwea and the residents at Hāwea have adapted to an operational range of eight metres and are likely to adapt similarly to a further two metres of water level change in the Lake on a regular basis.
88. The proposal will increase the security of electricity supply and support the evolving renewable electricity generation profile for Aotearoa, which is an efficient use of the landscape and water storage resource.
89. Allowing a reduction in the minimum normal operating level of Lake Hāwea will result in infrequent local effects which will not significantly alter the appearance of the natural landscape or the Lake itself.
90. The reduction in contingency level of Lake Hāwea to 333m at 4% ERC and 330 m at 8% ERC will have considerable landscape and natural character effects on Lake Hāwea and the surrounds, however, this will occur very infrequently. Additional mitigation measures will be investigated and included as part of the substantive application process.

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¹⁶ Control of flows out of Lake Hāwea effectively turns Lake Hāwea into storage for the rest of the hydro scheme.

Isthmus
26 June 2025