

ENVIRONMENTAL IMPACT STATEMENT
RAA 3883

Kia Ora Hut and Toilet Replacement

Overland Track

Cradle Mountain – Lake St Clair National Park



Acknowledgements

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Department of Primary Industries, Parks, Water and Environment

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Executive summary

The proposal is to replace the public hut and toilet at Kia Ora overnight node on the Overland Track (OLT). The OLT is Australia's premier multi-day alpine walk. It is promoted as a five (5) night – six (6) day walk through the Tasmanian Wilderness World Heritage Area (TWWHA). Kia Ora is a designated area for overnight stays and contains visitor accommodation facilities. The node includes an existing public hut, toilet, tent platforms and helipad. The proposed replacement buildings will maintain sustainable management practices, introduce consistent building standards and improve walker experiences on the OLT.

Visitor facilities are provided on the OLT for sustainable management purposes. The OLT is a popular walk and a booking system was introduced in 2005 to prevent overcrowding. Visitor accommodation facilities are provided to concentrate walkers on hard stands and prevent sprawling impacts from unrestricted camping and waste dispersal. The proposal is a capital renewal project for the purpose of managing visitor impacts in the TWWHA.

The existing hut and toilet at Kia Ora are both ageing structures that no longer meet the expectation of walkers. The OLT attracts up to 10,000 walkers annually. Most walkers use the track during the booked season between October and May, where a maximum of 34 independent walkers may start the track each day. The OLT exit surveys show walkers consistently rate Kia Ora hut less than other larger huts on the track. The proposed hut is consistent in size with larger huts and will accommodate 34 independent walkers.

The proposed new hut and toilet will be consistent with contemporary building standards and sustainable management practices. Kia Ora overnight node is a remote site subject to severe alpine weather conditions and potential bushfires. The proposed hut design will allow for a high level of thermal performance inside the hut as well as external materials resistant to ember attack from bushfires. The proposed new toilet will be an upgrade to a full-capture waste management system to avoid any environmental discharge.

This Environmental Impact Statement (EIS) outlines the proposal, its environment and potential impacts. The site of the proposed hut and toilet can avoid impacting known natural and cultural values in the area, and the proposed buildings are also visually discrete so will not detract from the wilderness quality of the TWWHA. Construction works pose a risk to the area and management controls are listed to reduce these risks to an acceptable level. The EIS also identifies the statutory approval pathway for the proposal and its compliance with relevant legislation.

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Glossary and abbreviations

AH Act 1975	<i>Aboriginal Heritage Act 1975</i>
AHT	Aboriginal Heritage Tasmania
AS	Australian Standard
BAL	Bushfire Attack Level
BHMP	Bushfire Hazard Management Plan
BT	Bushwalking Tasmania
CEMP	Construction Environmental Management Plan
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EPBC 1999	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
FMZ	Fuel Modified Zone
NC Act 2002	<i>Nature Conservation Act 2002</i>
NCC	National Construction Code
NCH	Natural and Cultural Heritage
NPRM Act 2002	<i>National Parks and Reserves Management Act 2002</i>
NPWAC	National Parks and Wildlife Advisory Committee
OLT	Overland Track
PCAB	Policy and Conservation Assessment Branch
PWS	Tasmania Parks and Wildlife Service
RAA	Reserve Activity Assessment
TFS	Tasmanian Fire Service
TNPA	Tasmanian National Parks Association
TSP Act 1995	<i>Threatened Species Protection Act 1995</i>
TWWHAMP 2016	Tasmanian Wilderness World Heritage Area Management Plan
UDP	Unexpected Discovery Plan
WFV	Waterfall Valley

1. Introduction

1.1 Overview

The OLT is Australia's premier alpine walk and the Tasmanian and Federal Governments have committed to improving visitor facilities on the track. The proposed hut replacement is part of the larger Overland Track Hut Redevelopment Project (Project). The Project aims to re-develop three of the five main OLT huts. The huts need to be replaced due to their small capacity and poor building health and condition. The Project has constructed a new public hut at Waterfall Valley and planning approvals are completed for a new hut at Windermere, with construction scheduled during the 2021-22 summer period. Kia Ora is the last hut to be considered for re-development.

The existing hut and toilet facilities at Kia Ora overnight node do not meet contemporary building and environmental management standards. The hut also has a nominal capacity of 16 that is too small to accommodate the current daily departure number of 34 walkers. Both the hut and toilet structures are at the end of their functional lives and need to be replaced.

The proposed new public hut and toilet will improve amenity and capacity and upgrade overall standards at the site. Subsidiary works include improving the greywater system, solar panels and batteries and linking tracks. The existing camping platforms and helipad will be retained and continue to be used in their current state. The storage apple near the current toilet will be removed and the existing Rangers Quarters in the public hut will be retained, with the potential of being refurbished in the future.

1.2 Objectives and outcomes

The management objective for presentation in the TWWHAMP 2016 is:

“To provide a diversity of visitor experiences in a manner that is consistent with conservation of natural and cultural values.”

To facilitate this objective, the objectives of the OLT Hut Redevelopment Project are:

- Complete the redevelopment of huts within budget and funding milestones.
- Increase capacity, thermal performance, building health and amenity of huts.
- Ensure specifications for hut redevelopment encompass energy efficiency and sustainability outcomes.
- Reduce negative environmental impacts within the overnight node.
- Engage with key stakeholders early in the planning process to maximise their input into planning and delivery and to build support for project objectives and outcomes.
- Minimise the footprint and area of disturbance caused by the construction process.
- Minimise the impact of the construction program on the walker experience.
- Integrate planning for all projects at each site to ensure works are sequenced to minimise onsite storage requirements, ground disturbance and cumulative impacts on walkers.

The objectives of replacing toilet infrastructure:

- Improve environmental standards and waste management with full-capture system.
- Reduce workplace hazards by eliminating manual handling of waste.
- Maintaining consistent service and infrastructure standards OLT.

Outcomes of the proposal:

- Improved walker accommodation at the Kia Ora overnight node;
- Improved management of walker and staff impacts on the environment; and
- Maintain a wilderness experience for walkers.

1.3 Alternatives

Several alternatives have been considered as part of the development planning for this proposal. The key ideas are described in the table below.

Table 1: Description of alternatives

Alternative	Description and comments
Eliminate the huts	OLT is a hut-based walk, and huts are part of the visitor experience and sustainable management of the track. Huts are environmental management tools to concentrate walkers on hard-stands and protect sites from overuse.
No change	Existing hut is an aging building with insufficient capacity and poor building health. Reoccurring mould infestations are deteriorating the building fabric and are a potential risk to walker health. Current hut conditions are unpleasant, particularly during inclement weather when the high moisture loads inside the hut from overcrowding begin to condensate inside the building. Current toilet building is in satisfactory condition although beginning to deteriorate with age and the waste management system poses a work health safety risk to staff.
Upgrade existing hut	An engineering assessment of the existing hut identified poor compliance with health and safety requirements of the National Construction Code (NCC). The entire structure needs to be replaced for compliance with NCC. The existing hut is constructed of pine and plywood timbers that are not easily salvaged or repurposed like hardwood timbers. The location of the existing hut would require substantial vegetation and tree clearing to establish a suitable bushfire hazard management area round the building of up to 20m radius, as well as replacing external cladding and substructures to comply with building standards in bushfire prone areas. The proposed new hut location can optimise energy efficiency and compliance with contemporary building regulations, while limiting environmental impacts and vegetation clearance.
New hut location	Kia Ora Site Concept Plan 2021 considered three possible hut sites – the existing hut site, and two sites east and west of the button grass near the helipad.

The existing hut site was not suitable due to tree coverage and surrounding tarns limiting footprint increase and grey water management. The bushfire risk would require significant understory clearing and ongoing maintenance.

The site adjacent the helipad and east of the button grass is located closer to Kia Ora Creek and localised tarns. This site was also not preferred by the Bushfire Practitioner and required significant clearing and potentially annual reduction of button grass fuels.

The proposed site west of the button grass was the preferred site due to the reduced bushfire risk, substrate and views of Cathedral Mountain.

New hut design

The design of the proposed Kia Ora hut is similar to WFV and Windermere huts, with the concept of two main pavilions (communal and sleeping), the difference being at Kia Ora these pavilions will be under a single roof. Similar materials will be used inside and outside the three huts.

The new Kia Ora hut design will maintain a difference between huts and sites that is part of the character of the OLT. WFV hut design referenced Barn Bluff and the historic old WFV hut with pitched roofs and Windermere responds to the sloping lie of the site and the wooded environment. Kia Ora will be a traditional square design to fit the small site. The hut design will feature an extended skillion roof to provide views of Cathedral Mountain and shelter the wrap around decks.

Kia Ora hut site is surrounded by mountains - Mount Ossa, Mount Massif, Falling Mountain and Cathedral Mountain and the beginning of Du Cane Range. To arrive at Kia Ora from either north or south is to descend into a natural 'amphitheatre'. The vegetation screens some of these views but the strong impression remains. The hut design intends to maintain this sense of being nestled at the base of these great mountains.

New toilet location

The proposed new toilet needs to be located at a different site to the current toilet. The waste material in the batching system must be left in-situ to compost for 12 months before being extracted. Providing temporary toilets for walkers during construction such as Port-a-loos, is not considered suitable at a remote site. These systems have high risk of over filling onsite and potential spills when extracted by helicopter.

The proposed toilet site is preferred for its central location between high use features (hut and platforms), good solar access for panels and is located in slight depression that lessens the visual height of the building.

The Kia Ora overnight node is visually discrete from the main track and screened by surrounding woodland. The rear end of the toilet building that houses the runway and queued pods will be screened by building facia and surrounding scrub.

1.4 Status of the proposal

The proposal is subject to statutory approvals from multiple authorities, as outlined in the table below. The Environmental Impact Statement (EIS) must be completed and approved by the Director Tasmania Parks and Wildlife Service (PWS). Works must be in accordance with both the TWWHAMP 2016 and the Tasmanian Planning Scheme - Meander Valley. The National Construction Code (NCC) sets standards for different building classes. Unusual proposals such as remote wilderness huts require performance solutions that are assessed by the Building Surveyor and Tasmania Fire Service (TFS).

Table 2: Statutory approval pathway

Approval or Permit	Agency or Authority	Documentation and process	Status
Archaeology Survey	AHT	AHAR has been prepared for the proposal. Consultation has commenced with community and Aboriginal Heritage Council. AHT will determine if permit is required or not.	Complete
Natural Values Survey	NCH	NCH conducted a Natural Values Survey of the site (field and desktop) and identified no threatened species or critical habitats. One threatened vegetation community will be avoided on-site. No permit applications recommended.	Complete
Visual Analysis	PWS	Visual Impact Assessment (VIA) has been prepared by consultants, Inspiring Place.	Complete
Concept building plans	PWS	Concept building plans prepared by the Architects in accordance with design briefs. Toilet plans prepared for Class 10 buildings by PWS Engineer.	Complete
TWWHAMP 2016	PWS	3. Use and Development Controls and 3.3.1 Additional assessment criteria regarding potential impacts to Outstanding Universals Values (OUV).	Complete
MNES	PWS	Matters of National Environmental Significance (MNES), self-assessment in accordance with Guidelines.	Complete
Draft - Environmental Impact Statement (EIS)	PWS	Surveys, reports and plans prepared to: - describe the proposed development, - address relevant legislation, and - assess potential impacts and proposed management.	Complete
Public consultation	PWS	Four-week public consultation period seeking comment on the draft EIS, EIS available on PWS website.	Complete
EIS assessment	PWS	EIS is finalised following public consultation and submitted for assessment. Environmental Assessment Report (EAR) and Statement of Reasons prepared for Deputy Secretary to consider endorsing.	Current
EIS Publication	PWS	EIS, EAR, Statement of Reason and Decision published on PWS website.	Not commenced
Planning Permit	Meander Valley Council	Development application is required by Meander Valley Council to assess the proposal against their Tasmanian Planning Scheme – Meander Valley.	Complete
Bushfire Hazard Management Plan (BHMP)	TFS	AS-3959 - Construction of buildings in bushfire prone areas.	Preliminary advice and ongoing

		<p>Tasmania Fire Service is the permit authority under the Tasmanian <i>Building Act 2016</i> for assessing developments that do not comply with the Standard.</p> <p>A Bushfire Hazard Practitioner endorsed by TFS prepares the BHMP that includes building conditions and site mitigation.</p> <p>Strategies for visitor safety and building protection that also limit disturbance to the wilderness area are under-development.</p> <p>These will be finalised with detail building drawings and before a Certificate of Likely Compliance is issued by the Building Surveyor.</p>	analysis of alternatives
Certificate of Likely Compliance	Building Surveyor	<p>Building Surveyors are the delegates under the Tasmanian <i>Building Act 2016</i> for assessing building designs to ensure compliance with NCC, AS and the Act.</p> <p>The Building Surveyor will assess the detailed building drawings and engineering designs to ensure compliance with NCC, the Act and relevant Australian Standards before issuing the Certificate of likely Compliance.</p>	Preliminary advice and ongoing discussions with Architects.
Building Permit	Meander Valley Council	<p>Meander Valley Council is the permit authority under the <i>Building Act 2016</i> and will issue a Building Permit, on receipt of the Certificate of Likely Compliance from the Building Surveyor.</p>	Not commenced
Plumbing Permit	Meander Valley Council	<p>Greywater design upgrade has been prepared by a suitably qualified engineer and compliant with AS1547 for submission to the permit authority.</p> <p>Meander Valley Council is the permit authority under the <i>Building Act 2016</i> for issuing Special Plumbing permits (i.e. any system not connected to reticulated services).</p>	Not commenced
Grant of Authority	PWS	<p>Authority under the NPRM Regulations 2019 to disturb vegetation, soils and remove infrastructure. Authority issued to contractor as part of procurement process.</p>	Not commenced
Landing Authorities	Director PWS	<p>Landing aircraft and longline deliveries require an authority under the TWWHA Management Plan 2016.</p>	Granted

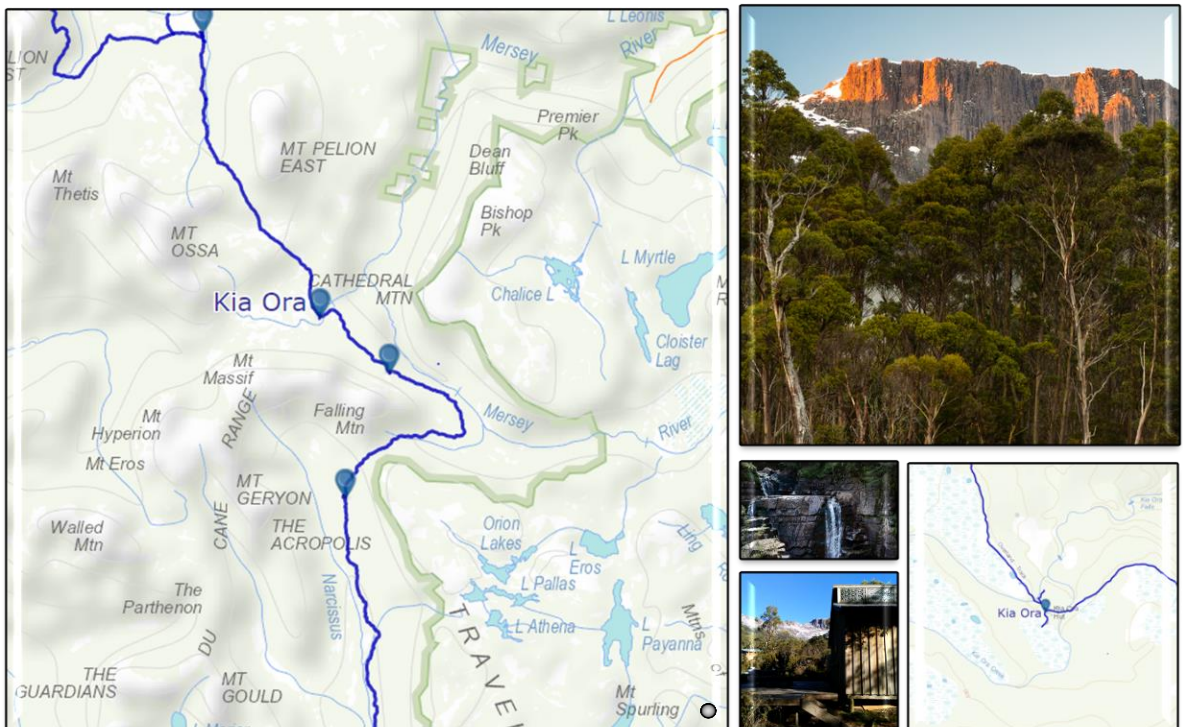
2. Proposal description

2.1 Location

The proposal is within the Cradle Mountain-Lake St Clair National Park at the Kia Ora overnight node on the OLT, as shown on the map below. Kia Ora is located 850m above sea level, in a natural amphitheatre surrounded by some of Tasmania’s highest mountains - Mount Ossa, Mount Massif, Falling Mountain and Cathedral Mountain and the beginning of Du Cane Range. Kia Ora overnight node is adjacent Kia Ora creek and waterfalls.

Kia Ora overnight node can only be accessed by walking tracks. The primary track is the OLT, particularly during the booked season between October and May each year. The OLT Usage Guidelines also allow the site to be accessed via the Lees Paddocks – Never Never – Junction Lakes walking track loop. However, overnight stays at Kia Ora by walkers not booked on the OLT are discouraged during the booked season to prevent overcrowding. There is no helicopter access for visitors at Kia Ora.

The overnight node contains existing walker facilities including a public hut that includes the Ranger’s quarters, composting toilet, helipad and tent platforms. The existing hut is semi-open plan with adjoining bunk platforms for 16 walkers and a common area, plus undercover porch, and rainwater tanks outside. The site also contains camping platforms for independent walkers and a group platform for tours, schools, and expeditions. The Kia Ora Site Concept Plan 2021 describes the existing visitor facilities at the site and is provided as Appendix 1.



Map 1: Location of Proposal

2.2 Need

2.2.1 Public hut

The OLT attracts around 10,000 walkers per annum. Most complete the OLT in five nights - six days, staying at Waterfall Valley, Windermere, Pelion, Kia Ora and Bert Nichols overnight nodes. There are also smaller public huts at Scott Kilvert, Narcissus and Echo Point. The five main huts have been built over different decades and vary considerably in their design, capacity, condition and overall amenity.

The need to address inconsistencies between huts has been identified through walker exit surveys and engineering assessments. OLT walker exit surveys are conducted every three years and comment cards are always available at Visitor Centres. Feedback indicates walker experiences are diminished in the older huts that contain less communal space and bunk capacity. Kia Ora hut only accommodates 16 of the 34 independent walkers booked on the track each day. Walkers consistently rate the quality of Kia Ora hut less than Pelion and Bert Nichols which were built more recently and have larger floor areas and bunk capacity.

Kia Ora hut also has poor building health. The hut has no insulation and poor heating. Overcrowding in the small hut generates large unventilated moisture loads from cooking, wet clothes and cramped conditions. Cold overnight temperatures condense moisture in the hut, creating a microclimate for propagating mould. Active mould growth stains the walls and ceilings black and deteriorates the building condition.

2.2.2 Toilet

The OLT 10 Year Works Program has prioritised replacing toilet infrastructure to improve environmental management and work health safety standards and eliminate the risk of accidental environmental discharge. Toilets with the composting or batching system need replacing as the buildings are aging and the system poses a hazard to the environment and staff.

The proposed new toilet will improve environmental standards of waste management. The new system will be a full-capture pod system, where the pods are flown out of the National Park for processing at a suitable facility. Toilets have been replaced at WFV and Scott Kilvert overnight nodes, with Windermere and Kia Ora the next priorities.

The current toilet building is well over 15 years old and deteriorating in the harsh alpine conditions. Replacing the hut and toilet buildings together can generate budget efficiencies. Plus, focusing construction works in one location on the OLT minimises impacts on the overall walker experience.

2.3 Developments

2.3.1 Overview

Overall, the proposed developments will significantly increase the built footprint in the Kia Ora overnight node as shown in Table 3 below. The total built footprint of the proposal will be 533m², an increase of 333m² on the current 200m².

Table 3: Change to the built footprint

	Hut, decks & tanks	Toilet	Rangers quarters	Total built footprint
Current	~150m ²	50m ²	(in hut 9.2m ²)	~200m ²
Proposed	331m ²	50m ²	~90m ²	~471m ²
Difference m²	181m ²	0	~90m ²	271m²

The existing public tent platforms and group platform will be unchanged by the proposal. The current public hut is planned to be re-purposed for use as a Rangers Hut in the future. The current Rangers quarters in the hut can continue to be used until refurbishment plans and funding become available. The footprint of the existing hut will remain unchanged by this proposal.

The proposal will create a bushfire hazard management area (HMA) around the proposed hut. The HMA will be approximately 1200m² in area. The HMA limits the risk of bushfire approaching the hut by removing flammable understorey vegetation and ground fuel. The standing trees in this area will be retained and native grasses or marsupial lawn propagated underneath as non-flammable ground cover.

The toilet replacement in terms of footprint will be like-for-like, with built footprint of about 50m². The proposed structure is built according to PWS standard drawings, adapted to the natural features of each site. The former toilet site will be allowed to regenerate naturally.

A linking track will also be required as part of the proposal. The walking track will link the new hut and toilet to main OLT. The track will be approximately 100m in length. The track will be elevated and constructed of FRB with black stained timber framing.

The built footprint of the proposed hut will be almost three times larger than the current hut and more than double the capacity. The proposed hut will accommodate the 34 walkers with only a modest increase in area per-person, shown in the Table 4 below. The proposed hut is consistent in size and scale as other huts on the OLT that accommodate 34 walkers including WFV, Pelion and Bert Nichols.

Table 4: Current and Proposed hut differences.

Huts	Public hut	Area per person	No. people	Decks
Current Hut	~50.8m ²	3.2m ²	16	90m ²
Proposed Hut	149m ²	4.3m ²	34	182m ²

2.3.2 Public hut

The primary purpose of public huts is to concentrate use on one hard stand and protect the environment from expansive informal camping areas. The OLT service model includes huts and tent platforms to manage walker impacts and walker experiences. There are no restrictions on how many days walkers may choose to complete the OLT. Walkers can choose to remain at an overnight node for more than one night. As such, bunks in huts are not guaranteed (or booked) in

huts. The proposed hut capacity and existing tent platforms are considered reasonable to accommodate booked OLT walkers and their chosen itinerary.

The proposed hut design must deliver capital improvements while maintaining a wilderness experience and walkers' perception of risk and actual risk. Walkers on the OLT must be self-reliant and prepared to camp due to natural hazards and/or injury preventing them from reaching a hut. Walkers must carry their own sleeping, cooking and camping equipment. The proposed hut will continue to provide walkers with basic facilities, contained in structure designed to endure the alpine conditions.

The location of the proposed public hut was identified from desktop and on-site surveys when developing the Kia Ora Site Concept Plan 2021. The proposed site has a number of advantages including:

- improved visitor experience (the proposed hut location would have minimal impact on the primary arrival sequence, positive outlook to the broader landscape from the hut including a focused view to Cathedral Mountain and foreground views to adjacent low vegetation);
- better solar orientation;
- adequate space to house new purpose-built public sleeping and living facilities;
- minimal environmental impact (some minor clearing of existing vegetation); and
- better potential to address bushfire concerns.

The proposed hut location and building design will overcome many of the issues in the current hut, as described above in section 2.2.1.

The proposed public hut will contain simple facilities consistent with those provided in other OLT huts. The floor plans and elevations of the proposed hut are provided in Appendix 2. Bunk platforms will be provided to accommodate 34 walkers. A bunk room will adjoin the communal area to maximise thermal gains in one section, which is particularly useful during colder months. The remaining sleeping area will accommodate seasonal fluctuations in walker numbers. The communal area will contain bench style seating with no cooking equipment provided. The decks, tables and benches will have stainless steel surfaces, suitable for cooking on with either gas or fuel stoves.

The new hut will incorporate modern structural design to promote building health and longevity. The hut design will include an insulation envelope in the floor, walls and ceiling. Insulation maintains a constant building temperature to minimise structural warping as well as preventing condensation inside the building. Heating will include passive sources (i.e. solar orientation, cooking and general walker activity inside hut), plus a gas heater to ensure a minimum temperature is maintained during colder months when fewer walkers are using the hut.

The proposed hut will also include general utility systems. Electricity will be required to power emergency lighting and smoke alarms prescribed by the NCC, plus interior lighting, and thermostats and timers where necessary to maintain building health. It is proposed to mount solar panels on the roof of the new toilet and house the batteries under the cubical. Preliminary toilet design is provided in Appendix 3. Greywater will be collected below the rainwater tanks, with a series of grease traps and filtering, likely to be located under the decks and just south of the hut to maintain a gravity feed through system. A waste-water system design is provided as Appendix 4 and described in section 2.3.4 below.

The hut is designed as a habitable building in a bushfire prone area. A hazard management area (HMA) will be required around the building and a preliminary design is provided in Appendix 5. The

HMA must prevent flames reaching the building and is usually twice the length of adjacent ground or understory vegetation heights, standing trees are retained. The HMA is proposed as native grasses and herb fields, often referred to as marsupial lawns. These lawns will be established with native vegetation as part of rehabilitating the construction area.

2.3.3 Toilet

The proposed toilet will replace the existing composting toilet for the reasons discussed in section 2.2.2. The proposed location is on a sloping, open patch of low growing coral fern (*Gleichenea microphylla*). The proposed split level (two storey) toilet design is well suited for this type of sloping terrain. The grade will allow for access to the toilets without stairs and the service area at the rear of the structure.

Location of the toilet is central to use in the node as shown in the Kia Ora Site Concept Plan 2021. Toilets need to be a convenient distance from facilities for walkers to be more likely to use them. The proposed toilet location is within 50m of the OLT, proposed hut and group platform and less than 100m from individual tent platforms.

The proposed toilet building will be a standard three cubical design. The toilet design is provided in Appendix 3. The design includes a two-storey building with 800 litre pods under the toilets and deck at the rear to store pods. The deck provides a suitable work surface for Rangers to winch pods in and out of the building as well as longline pods in and out of the park via helicopter. The toilet building will also house the solar panels and batteries.

2.3.4 Greywater system

The greywater system proposed for the hut will improve wastewater management at the site. A site plan and system design is provided in Appendix 4. The location of system elements has been prepared with consideration to hut design and sphagnum bog to the south east of the hut. The system design is simple and avoids mechanical components. The greywater management system removes solids and particulates from wastewater, before release into the environment.

The greywater collected at public huts is relatively clean wastewater from handwashing and the washing of cooking equipment. The solids and particulates usually include food scraps, fats or oils, toothpaste, some detergents and potentially mud from washing boots or other dirty items. The volume of wastewater is also low, estimated at 2-3 litres per walker per day.

The proposed system includes grease traps to remove solids and a sand filter to capture particulates. The first grease trap, located under each water tank, will contain an extractable solids trap that is cleaned routinely by Rangers. The second grease trap allows heavy solids and grease to settle and is inspected regularly and emptied when required to maximise performance of the system. Finally, the water goes through the Bottomless Sand Filter (BSF) before being released to ground. The BSF is inspected annually for clogging and sand is replaced as required.

2.3.5 Future works

Future works created by the proposal (although not part of this proposal) include:

- retaining the ranger's quarters and future refurbishment, and
- removing the existing toilet building and remediating the site. (after 12 months)

The existing public hut that contains the Rangers quarters will be retained. The current Rangers quarters can continue be used as the building is suitable for single occupancy. The moisture loads and mould problems caused by overcrowding will no longer be problem if not used by walkers. The

Rangers quarters currently contains a gas stove and heating, two bunks and solar power for charging radio batteries.

In the future, the building will be refurbished as a Rangers hut. The standard internal layout of Rangers huts includes four bunks, cooking area, office area and charging station, plus workshop/storage area. The current footprint can accommodate this layout. The thermal performance of the building can be improved to reduce the use of gas heating and increase the longevity of the building. The built footprint of this building is unlikely to change, only the internal layout.

The existing toilet system and building will be remediated in stages. Firstly, the toilet will be closed, and the waste left to compost for 12 months. Once composted, the waste will be removed by a suitably qualified contractor. The building will then be demolished and removed from the National Park. The natural ground level will be re-established as far as practical and the site allowed to regenerate naturally. Some mulch may be available to assist from the new hut construction.

3. Current environment

3.1 Legislation

3.1.1 EPBC Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC) provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places—defined in the EPBC Act as Matters of National Environmental Significance (MNES). MNES include World Heritage Properties. As such the EPBC Act 1999 is applicable to actions in the Tasmanian Wilderness World Heritage Area (TWWHA).

Approval from the Federal Minister is required under the Act, if an action will have, or is likely to have, a significant impact on a MNES. The test for 'significant impact' requires a MNES to be degraded, altered or modified. An assessment report of potential impacts to the Outstanding Universal Values (OUV) of the TWWHA is provided in Appendix 6 and self-assessment of significant impact to MNES in Appendix 7. The assessments did not identify significant impacts. The proposal is not considered to be a significant impact to MNES and no further assessment under the Act is required.

3.1.2 NPRM Act 2002

The *National Parks and Reserves Management Act 2002* (NPRM) delegates managing authority to the Director PWS to manage land designated as one of eight types of parks and reserves. Schedule 1 of the Act lists management objectives for each reserve type including the National Park in which this proposal is located.

The proposal is in accordance with the management objectives for National Parks as it is designed to be in accordance with TWWHAMP 2016. The primary purpose of National Parks is to protect and conserve natural and cultural values. Tourism, recreation and enjoyment of National Parks is also promoted insofar as it is compatible with conservation objectives. This proposal is considered an acceptable balance of these objectives to protect natural and cultural values while at the same time providing for recreation and tourism, and preserving the natural, primitive and remote character of the wilderness area.

The NPRM Act also sets out the process for enacting statutory Management Plans and Regulations. The TWWHAMP 2016 and *National Parks and Reserve Management Regulations 2019* have been enacted in accordance with the NPRM Act 2002 and are applicable to the proposal. The TWWHAMP 2016 is discussed in section 3.2.1 below. The PWS must provide written authority under the NPRM Regulation 2019 to the building contractor, to permit works that would otherwise be prohibited under the Regulations.

3.1.3 Other relevant legislation

Table 3: Other Relevant Legislation

Legislation	Permit Required	Possible permit	No permit required	Not Applicable	Details:
National Parks and Reserves Management Regulations 2019		✓			<ul style="list-style-type: none"> - Assessment or performance criteria - Permit, approval or authority <p>Prescribes permitted and prohibited actions in reserves, and attributes fines to offences. Authority required under the Regulations to disturb natural environment, issued by PWS.</p>
Nature Conservation Act 2002			✓		<p>Schedule 3A - Threatened native vegetation communities Threatened community to be avoided.</p>
Threatened Species Protection Act 1995				✓	<p>Taking known threatened species is unlawful. No threatened species identified at the site</p>
Aboriginal Relics Act 1975			✓		<p>Disturbing aboriginal relics is prohibited. AHAR completed and assessed by AHT.</p>
Historic Cultural Heritage Act 1995				✓	<p>Lists heritage buildings and places to be protected. No listed heritage items at the site.</p>
Land Use Planning and Approvals Act 1993	✓				<p>Delegates' authority to Local Government to control use and development in municipal areas. Planning permit is required under the Act, see Table 2 for more details.</p>
Environmental Management and Pollution Control Act 1994				✓	<p>Management of controlled actions and environmental nuisances. Proposal will not be a controlled action and it will not produce environment risk at a scale to trigger assessment under the Act.</p>
Water Management Act 1999 / State Policy on Water Quality Management 1997				✓	<p>Applies to surface, coastal and ground waters. No use of water proposed to trigger assessment under the Act or Policy.</p>
Fire Service Act 1979				✓	<p>PWS is responsible under this Act and the <i>Fire Service (Miscellaneous) Regulations 1996</i> for all aspects of fire management within the reserve system, including prevention and suppression, subject to the Inter-Agency Protocol 2007. The proposal will not change emergency response, detailed in the OLT Emergency Response Plan 2020.</p>
Forest Practices Act 1985				✓	<p>Regulates the use and harvest of timber resources, including clearing of native forests for all land uses. Volume and scale of vegetation clearing too small to trigger Forest Practices Plan.</p>
Mineral Resources Development Act 1995				✓	<p>Controls the exploration, extraction and use of mineral resources. Mineral resource exploration or extraction is prohibited in National Parks and under the TWWHAMP 2016</p>

**Building Act 2019,
Building Regulations
2019 (includes
plumbing)**

✓

Building Act 2019 and associated regulations and determinations, control the scale of building and plumbing works and compliance with the NCC.

BHMP being prepared for assessment by TFS

Building specification being developed for assessment by Building Surveyor.

Grey-water management system being designed for assessment by Council.

Please refer to Table 2 for more details.

3.2 Planning

3.2.1 TWWHA Management Plan 2016

The Tasmanian Wilderness World Heritage Area Management Plan 2016 (TWWHAMP 2016) is a statutory plan applicable to the proposal. The Plan outlines the vision and management objectives for the World Heritage Area and also restricts use and development in specified Zones.

The vision for the TWWHA is to 'identify, protect, conserve and present' the world heritage values, now and into the future. Management objectives are categorised into six themes. The proposal is guided primarily by the Natural Values and Presentation theme objectives. The proposal seeks a balance between providing for a diversity of visitor experiences, while protecting and conserving biodiversity and natural landscapes.

The Plan prescribes four management zones and the OLT is located in a Recreation Zone. The Recreation Zone is characterised as a corridor providing access for a range of recreational activities in a natural setting. Typical infrastructure in the Zone is described as walking tracks, toilets, huts, camping areas and signs as well as trailhead facilities such as vehicle access and car parking. The proposed replacement buildings are consistent with facilities in the Zone.

The Table of Use in the Plan lists the permitted uses and developments in different Zones. The Recreation Zone permits the following developments:

- Existing public or historic huts and associated infrastructure.
- Visitor Accommodation (new) including huts.

The proposal to replace the public hut is a permitted activity in the Recreation Zone. The new toilet is not specified in the Table of Use, although the Zone description lists it as a usual development. As such, the proposed hut and toilet are considered permitted.

An example assessment and approvals process is described in the Section 3.3.1 of the Plan. The process includes the Reserve Activity Assessment (RAA). This EIS has been prepared for assessment in accordance with a Level 3 EIA process prescribed by PWS, and is consistent with the RAA process described in the Plan.

The Plan also lists additional assessment criteria in Section 3.3.1. This criteria requires an assessment of potential impacts to world heritage values. The impacts can be direct, indirect, or cumulative. A report is provided in Appendix 6 that evaluates potential impacts from the proposal to world heritage values. No significant impacts were identified.

The Plan also lists a series of Key Desired Outcomes (KDO) for management. The KDOs are assigned some management actions and evaluation methods. The KDOs relevant to the proposal

are also addressed in Appendix 6. The proposal is designed in accordance with the KDO's and furthers the management intentions of the TWWHAMP 2016.

3.2.2 Overland Track Recreation Zone Plan 2014 (draft)

The Overland Track Recreation Zone Plan has been in draft form since its first release in 2005. Internally within PWS, this plan has been updated and revised regularly. The current version has been a useful guide for general works internally and informed the Kia Ora Concept Site Plan 2021 that is discussed below.

A KDO of the TWWHAMP 2016 is to prepare Recreation Zone Plans (RZP) for walking tracks including the OLT, listed below:

KDO 6.4 A range of recreational walking experiences is provided and maintained in the TWWHA through the provision of appropriate levels of corresponding track infrastructure and management.

- Develop Recreation Zone Plans for the South Coast Track, Frenchmans Cap and Overland Track.

The OLT RZP project plan and discussion paper is under development. The RZP will guide the sustainable management of the track.

3.2.3 Kia Ora Site Concept Plan 2021

The Kia Ora Site Concept Plan 2021 is an operational plan for the purpose of guiding developments in the overnight node. The Site Plan is provided as Appendix 1. The Site Plan aims to implement provisions of the TWWHAMP 2016 and maintain consistent service standards on the OLT. This Plan is consistent with site concept plans developed for WFV, Windermere and Scott Kilvert overnight nodes on the OLT, and also responds to the site-specific features of Kia Ora.

The Kia Ora Site Concept Plan 2021 was prepared in consultation with the key OLT stakeholder groups. Interested parties were engaged in discussions regarding the future of the whole overnight node to avoid ad hoc or incremental development. The plan is a guide for current and future development in the node.

This proposal is in accordance with the Kia Ora Site Concept Plan 2021. The proposed new hut and toilet are located on the sites identified in the Plan, as shown in the maps in Appendix 1. The proposal will maintain the same visitor facilities and level of service expected on the OLT.

It is noted in the Site Plan that a tourism operator has expressed an interest in developing additional tourism services and facilities on the OLT. The public track and facilities are the responsibility of PWS to maintain and the recreation is an approved activity under the management plan. Any additional developments will require the proponent to demonstrate, that their cumulative impacts on established recreation and tourism is acceptable within the TWWHA and at the OLT nodes.

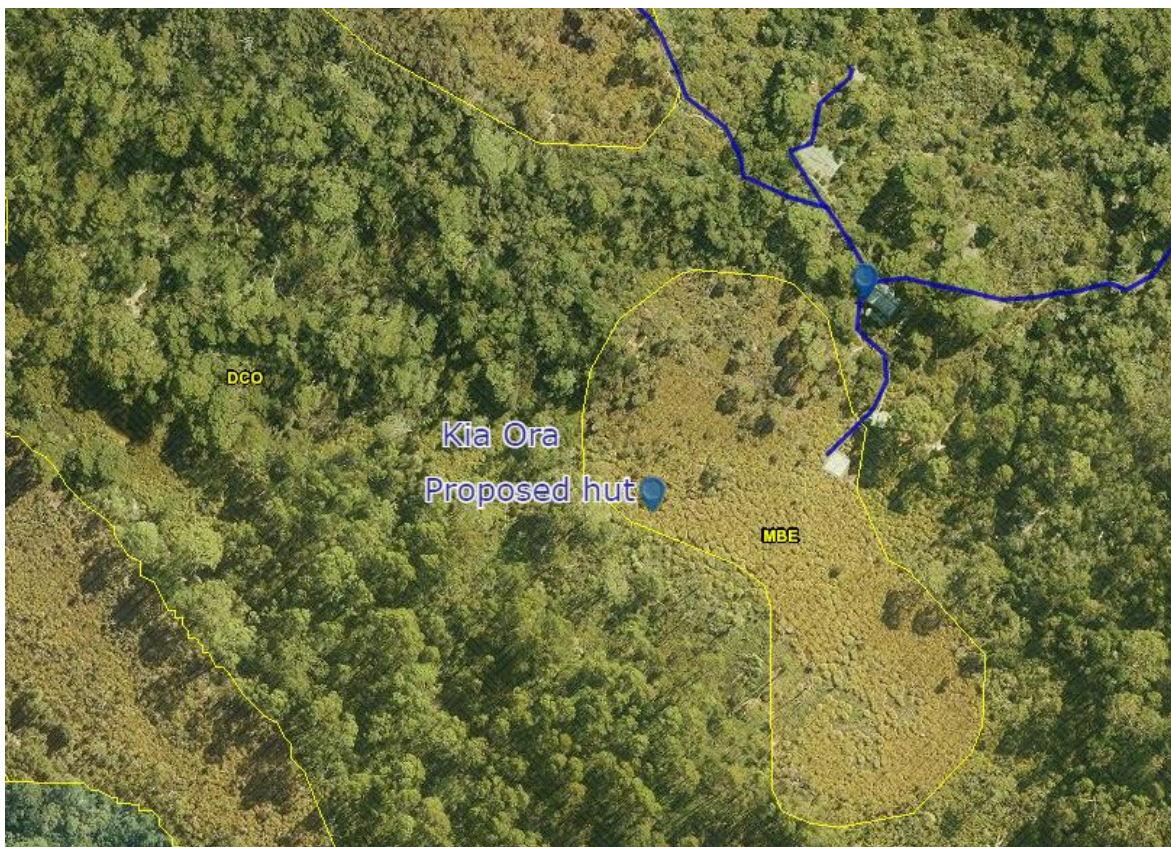
The PWS apply a Wilderness Quality Assessment (WQA) tool to rate wilderness quality in the TWWHA. The WQA attempts to quantify physical wilderness and the relative remoteness of sites from human developments. Kia Ora is rated as high-quality wilderness on a scale of 1-20, where >12 is high quality. Kia Ora is valued for its recreational use as an overnight node on the OLT and its remote location from other human development.

3.3.2 Flora and fauna

A Natural Values Survey (NVS) of the Kia Ora overnight node was conducted in 2020 and is provided in Appendix 8. Two main vegetation communities identified during the on-site survey. *Eucalyptus coccifera* woodland (DCO) and eastern buttongrass moorland (MBE) are interspersed around Kia Ora Creek as shown in Map 3 below. *Eucalyptus subcrenulata* forest and woodland (WSU) were also identified in wetter positions. The woodlands are established on morainal ridges with peat and buttongrass infilling between the moraines.

Initially the hut site was proposed 30 meters southeast of its current location. The on-site survey found sphagnum bog. At this site, it may be considered part of the ecological community – *Alpine Sphagnum bog and associated fen*, which is a nationally threatened ecological community listed under the *Environmental Protection and Biodiversity Conservation Act 1999*. As such the hut site was relocated north to avoid impacting the threatened community.

There were also abundant signs (scats) of grazing marsupials (common wombat, Bennett's wallaby, Tasmanian pademelon) throughout the area. No denning sites or potential denning sites for threatened *Dasyurids* were observed during the survey. All other threatened fauna species known from the region are unlikely to be directly impacted by the proposed works.



Map 3: TASVEG 4 communities, outline and code (source: ListMap)

A Natural Values Atlas (NVA) search for raptor nests and nesting habitat was also conducted. Two known wedged-tailed eagle nests were identified approximately 1.5km east of Kia Ora overnight node, above the Mersey River. The main vista from the nest is north with Kia Ora overnight node in the western peripheral view. Line-of-sight mapping also confirms that the Kia Ora site is not visible from the nests as it is screened by surrounding vegetation and terrain. Maps are provided in Appendix 9.

The predictive model for wedged tailed eagle nest habitat identifies high potential nesting habitat within a 5km radius of the site. Most of this potential nesting habitat is behind the mountains surrounding Kia Ora overnight node. High potential nesting habitat was identified 1 km north of Kia Ora in a strip of *Eucalyptus delegatensis* forest and opposite the known nests. Given the range boundaries and territorial nature of the species it is possible, but considered unlikely, for wedge-tailed eagle nests to be established on opposing sides of a river valley. This area was surveyed for eagle nests in April 2019 by NCH and no nests were identified. The survey results are recorded in Nature Conservation Report 19/2.

3.3.3 Geology

The Cradle Mountain – Lake St Clair National Park is a glacial landscape. Kia Ora overnight node is surrounded by significant glacial features and geo-conservation sites. These include roche moutonnée on the Labyrinth plateau, fluted moraines in Narcissus Valley, glacial striae at Lake Helios and the glacial river valley at Lees Plains. Geo-conservation features provide evidence of recent glaciation and contribute to the OUVs of the TWWHA.

A segment of the Western Tasmania Blanket Bogs geo-conservation is located adjacent the proposed development area. Blanket bogs develop in response to high rainfall, high humidity, and low evaporation. Western Tasmanian Blanket bogs are the most extensive organosol terrain (soil with high content of organic matter) in Australia and the Southern Hemisphere. The soils are mapped across the full extent of Western Tasmania and are considered globally significant and also contribute to the OUVs of the TWWHA.

Kia Ora overnight node contains glacial moraines. Moraines are unconsolidated soil and rock deposits left behind by receding glaciers. It appears from the vegetation communities and terrain that Kia Ora overnight node is situated at the eastern edge of a large moraine field covering several square kilometres. Although part of the glacial history of the National Park, the site is not recognised as a geo-conservation area.

3.3.4 Cultural

The TWWHA is culturally significant to Tasmanian aborigines both from a landscape perspective and heritage sites. Tasmanian aborigines were the southern-most people in the world during the last glacial period, and part of the first expansion of modern humans across the globe. Artefacts show the hunting and gathering lifestyle of the people occupying these high southern latitudes when the climate was much more variable. Although Kia Ora is part of the occupation landscape, no artefacts or heritage sites were identified during the archaeological survey.

The Aboriginal Heritage Assessment Report (AHAR) describes the Kia Ora overnight node to part of the lands of Big River Nation. Big River Nation lands extended north to Cradle Mountain, south to Derwent River near New Norfolk and west around the Western Tiers. The Big River Nation was believed to have two trade routes running north out of their country. The most used path went past the Great Lake and through a pass in the Great Western Tiers near Quamby Bluff. A second, lesser used path ran along their western boundary from near Lake St Clair, past Cradle Mountain and Lake Dove, to south of Black Bluff. This track has similarities to the OLT and potentially close

proximity to Kia Ora overnight node. The AHAR is noted in Appendix 10 but is not publicly available.

3.3.5 Recreation

The OLT is the main recreation in the area. The OLT is Australia's premier alpine walk and attracts about 10,000 walkers a year. Kia Ora is the fourth overnight node on the multi-day walk. The OLT Usage Guidelines allow for Kia Ora to be accessed via Lees Paddocks – Never Never – Junction Lakes walking track loop. Although, overnight stays at Kia Ora by walkers not booked on the OLT are discouraged during the booking season.

The OLT booking system was introduced in 2005, in response to increasing popularity of the track. The sensitive alpine environment was being damaged and wilderness experience of walkers diminished by the number walkers in peak periods. The booking system involves:

- regulating daily departures of independent walkers and groups of walkers,
- capping the maximum number walkers in a group to 13,
- all walkers traveling north to south, and
- a booking fee for a place on the track.

Walker numbers are capped at 60 per day, with 34 independent walkers and two groups with up to 13 walkers in a booking. The group bookings include the private hut tours. The booking system limits the number of walkers per day from October - May. Walkers do not need to book for the remaining months; however, the weather conditions restrict track use to experienced walkers.

3.3.6 Commercial

Commercial use of the OLT is permitted and managed by the booking system. Commercial use of the Kia Ora overnight node is restricted to commercial tour groups booking the group platform site. Private hut tours do not usually stop at the Kia Ora public site as their private hut facilities are located nearby. All commercial tours are required to be licenced operators with PWS and must adhere to the 'Leave no trace' principles of bushwalking.

4. Engagement

4.1 Site planning

The Kia Ora Site Concept Plan 2021 was prepared in consultation with the key OLT stakeholder groups. The intent of consultation was to engage interested parties in a discussion regarding the whole Kia Ora overnight node and future development in the node.

The consultation process was a targeted stakeholder approach and conducted by both PWS and the consultants, Inspiring Place. Stakeholders included:

- bushwalking associations and clubs,
- conservation advisory committee and advocacy group (NPWAC & TNPA),
- commercial lease holder.

Each group was offered a face-to-face meeting to discuss the draft and three stakeholder groups participated in meeting. Written submissions were received from these three groups. All stakeholder submissions were supportive of the Concept Site Plan.

4.2 Development planning

This proposal has benefited from recent development planning for WFV and Windermere replacement huts. Many lessons have been learnt through these projects and the community feedback received during planning and following construction. Stakeholders, community groups and clubs have participated in Site Planning, hut designs and environmental impact assessments for the three huts in as many years.

Stakeholders and the broader Tasmanian community have had several opportunities to participate in development planning for these huts. Both the WFV and Windermere hut proposals were advertised publicly on the PWS 'have your say' webpage and also by the West Coast Council during their planning permit application assessment. Kia Ora hut and toilet replacement were also made public available by PWS and the Meander Valley Council.

5. Potential impacts

5.1 Natural and cultural values

5.1.1 Biodiversity, flora and fauna

Aspect	Source	Significance	Determinant
Biological diversity	NPRM Act 2002	Statute	Schedule 1 (a) to conserve natural biological diversity; (addressed by the TWWHAP 2016)
	TWWHAMP 2016	Objective	To identify, protect, conserve, and restore natural biological and geological diversity and processes in the TWWHA.

The statutory objectives of National Parks (summarised above) and the Management Plan, require the protection of biodiversity (biological diversity). The proposal will clear and convert an additional 333m² of land to recreational facilities and the HMA will modify the understory vegetation of a 1200m² area, while retaining standing trees. The scale of the disturbance is a negligible impact to TWWHA and is considered a low risk to biodiversity.

Aspect	Source	Significance	Determinant
Flora, Fauna	EPBC Act 1999	Statute	Threatened species and communities, and threatening processes
	<i>TSP Act 1995</i>	Statute	Threatened species and critical habitat listings
	<i>NC Act 2002</i>	Statute	Threatened vegetation community listings.
	FPA	Policy	Technical Note 1: Eagle nest management
	DPIPWE	Standard	Guidelines for Natural Values Surveys

The relevant statutes and polices for the conservation of flora and fauna species are summarised above. The Natural Values Survey (NVS) was completed in accordance with DPIPWE survey guidelines and identified no threatened species, critical habitats or threatened communities in the development area. The NVS did not recommend any further actions or assessments under the *Threatened Species Protection Act 1995*.

The NVS recommended avoiding the Alpine Sphagnum bog and associated fen community, listed under the EPBC Act 1999. The proposed hut and wastewater system have been located north east of the community to avoid potential impacts. The proposal is considered a low risk to listed threatened flora, fauna, critical habitats and threatened vegetation communities.

The Wedged tailed eagle, a listed threatened species under TSP Act 1995, is also unlikely to be disturbed. Wedge tailed eagles are most vulnerable to disturbance during their breeding season from July to January. The Forest Practices Authority (FPA) technical note recommends no works within 1km or line-of sight of an active nest. The proposed works site at Kia Ora is >1.5km from two known nests and screened from view by terrain and vegetation.

Potential wedged tailed eagle nesting habitat within 1km of the proposed hut site at Kia Ora was surveyed in April 2019. Nature Conservation Report 19/2 prepared by NCH documents the eagle nest survey conducted in the TWWHA. The purpose of the survey was to better understand the importance of the TWWHA for the conservation of threatened species. The survey identified 30 new nests sites within the TWWHA.

Helicopters and wedged-tailed eagles are an equal threat to each other. The flight path between Kia Ora and staging areas will need to avoid the known nests and scattered pockets of potential nesting habitat. The staging area could be located at Cradle Mountain, Lake St Clair or Arm River. Avoiding eagles is a standard operating procedure for pilots as interactions can be hazardous for the bird and helicopter, and is part of the fly neighbourly advice for the TWWHA.

Commitment 1 – Avoid the Alpine Sphagnum bog and associated fen vegetation community

Commitment 2 – Implement fly neighbourly advice for the TWWHA.

Commitment 3 - Identify flight paths to avoid known nests, potential nesting habitat and eagle interactions.

5.1.2 Biosecurity

Aspect	Source	Significance	Determinant
Weeds	Weed Mgt Act 1999	Statute	Declared weeds and prescriptions to prevent spread of weeds
	TWWHAMP 2016	KDO	5.5 Manage biosecurity risks
	DPIPWE	Standard	Weed Planning, Hygiene Guidelines

Biosecurity is a risk to the values of the TWWHA and there are set standards to manage weeds and pathogens summarised in the table above. The NVS identified no declared weeds or exotic plant species at the site. Maintaining this weed free status of TWWHA is a high priority during construction projects.

Construction works could introduce weeds to the site without suitable hygiene controls. Many weeds species have the potential of establishing at the site. The site is particularly vulnerable when naïve vegetation is removed, and soils are exposed. The water borne pathogen *Phytophthora cinnamomi* and aquatic disease Chytrid fungus (*Batrachochytrium dendrobatidis*) are a low risk at 1000 elevation. The key weed vectors will be dirty equipment, tools, boots and machinery as well as imported building materials such as rock, gravel and sands.

Standard weed planning must be applied to imported materials and hygiene guidelines applied during construction. These standards must be included in procurement specifications, for the successful contractor to apply in their Construction Environmental Management Plan (CEMP) and implement during works.

Commitment 3 - Standard weed planning and hygiene guidelines to be include in tender specifications during procurement for contractors to allow additional costs and time in their estimates

Commitment 4 – Rock materials to be sourced from recently certified phytophthora and weed-free quarries and be of a similar parent material to the existing environment, to be included CEMP and implemented by contractor.

Commitment 5 – All equipment, machinery, boots, temporary building pads and objects entering the works site must be washed down and arrive clean to the work site. The washdown controls must be included in CEMP and implemented by contractor.

Commitment 6 – Retain all excavated soils and cleared vegetation on-site for use during rehabilitation.

5.1.3 Aboriginal heritage

Aspect	Source	Significance	Determinant
Aboriginal	AH Act 1975	Statute	14. Protection of relics
	TWWHAMP 2016	Objective	To identify, protect, conserve and restore cultural values in the TWWHA.
	AHT	Guideline	Aboriginal heritage standards and procedures

The proposal is low risk to aboriginal heritage as assessed by Aboriginal Heritage Assessment Report (AHAR) prepared in accordance with Aboriginal Heritage Tasmania's (AHT) procedures listed in the table above. The location of a recorded heritage artefact was identified as outside the works area during the on-site survey. No other heritage items were identified in the area.

The AHAR analysed the potential heritage significance from ethno-history and predictive modelling. The report concluded there are no specific areas of elevated archaeological potential or suspected Aboriginal cultural features. It is concluded that there is generally a low to very low potential for undetected Aboriginal heritage sites to occur within the development footprint.

Also, in accordance with AHT procedures, the AHAR was sent to community members for comment. AHT considered community comments and AHAR in their assessment of the proposal's compliance with the Act. AHT have determined no permit is required under the Act and supports the recommendations of the AHAR. Please note the AHAR is not publicly available with this EIS, although listed as Appendix 10.

The OUVs of the TWWHA include cultural values. The TWWHA Management Plan 2016 requires potential impacts to world heritage values (as a subset of the OUV's) to be assessed in section 3.3.1. The Additional Assessment Criteria report considers the potential for impacts to cultural values and is provided in Appendix 6. The MNES also includes the assessment for potential significant impacts to cultural values and is provided in Appendix 7. No significant impacts were identified under the TWWHA Management Plan 2016 and or MNES guidelines.

Commitment 7 – Comply with Unexpected Discovery Plan if aboriginal heritage is uncovered or suspected during works.

5.1.4 Aesthetics

Aspect	Source	Significance	Determinant
Visual	NPRM Act 2002	Statute	Schedule 1 (j) to preserve the natural, primitive, and remote character of wilderness areas
	TWWHAMP 2016	KDO	5.8 Aesthetic qualities are maintained or improved.
	FPA	Standard	A Manual for Forest Landscape Management c1990

The management objectives for National Parks requires the general aesthetics of the area to be maintained to preserve the natural and remote qualities as listed in the table above. The Visual Impact Assessment (VIA) of the proposal was prepared in accordance with the standard method for landscape management with some additional considerations given the character of the area. The VIA is provided in Appendix 11 and shows the proposal is considered visually acceptable in terms of scale, location and anticipated use.

The VIA supports the visual mitigation measures proposed. These include the:

- small hut design with a single roof sloping away from the main Viewfield from Cathedral Mountain, and
- use of dark building colours and stains to create a 'shadow' effect in the landscape.

The VIA notes the importance surrounding high vegetation and trees are for screening the proposed development in the landscape and on the arrival to the site.

The VIA supports the proposed sighting and design of the development. The proposed buildings are unlikely to be viewed by walkers until within 40ms of the site due to the stand of *Eucalyptus coccifera* forest and woodland to the north of the hut. Views of the proposed and existing facilities from the summit of Mount Ossa and Mount Pelion East and to the south from Cathedral Mountain, is likely to be minimal due to the distance and vegetation coverage. Walkers approaching Kia Ora are expecting to see the buildings which offsets their contrast in the wilderness landscape.

The VIA concludes the proposal is low -moderate visual impact that is acceptable at the proposed site. The incorporated mitigation measures to minimise visual impact are supported including architectural form and mass, use of dark and non-reflective building materials, plus standing trees around the buildings being retained in the BHMA (discussed in section 5.3.1) and during construction (discussed in section 5.4.2).

5.1.5 Wilderness

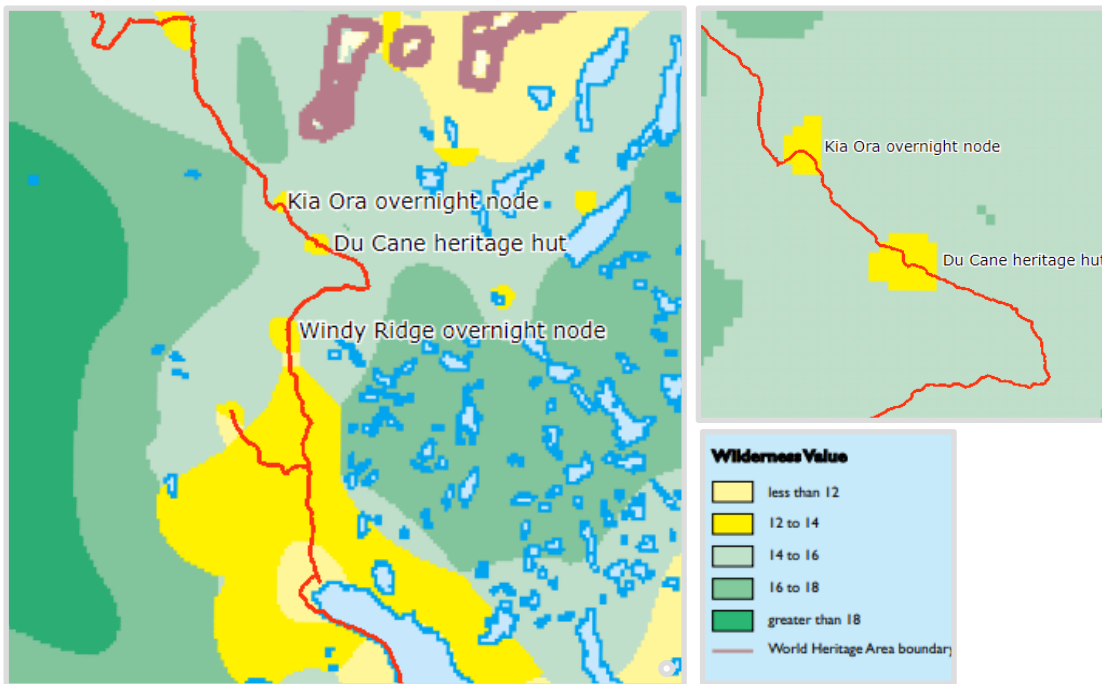
Aspect	Source	Significance	Determinant
Wilderness	NPRM Act 2002	Statute	Schedule 1 (j) to preserve the natural, primitive and remote character of wilderness areas
	TWWHAMP 2016	KDO	8.3 Wilderness values are managed and assessed
	PWS	Standard	Wilderness Quality Assessment

The proposal is a low risk to wilderness values as assessed under the TWWHA Management Plan 2016 and WQA method outlined in the table above. Currently, the wilderness quality rating of the OLT averages is:

- 14-16 for the track component and;
- 12-14 for the overnight node components.

This is depicted in the Map below, with yellow at hut sites and high use areas (Pine Valley and Lake St Clair), and then increasing darker shades of green with increasing wilderness quality. Please note blue depicts water, the red line is the OLT and brown colour is the TWWHA boundary.

The WQA method defines wilderness quality by the sum of four factors outlined in table below. Each factor is rated out of five (5), with a maximum score of 20. A rating of 12 and above is considered high-quality wilderness.



Map 4: Wilderness Quality Assessment (Source: Map 7, TWWHA Management Plan 2016)

Table 4: Wilderness Quality Assessment

Wilderness Quality Assessment	Measures
Apparent Naturalness (AN)	Remoteness from features that impinge on the perception of naturalness such as settlements, roads, impoundments and transmission lines. How 'wild' or 'undeveloped an area might seem to a visitor.
Remoteness from Settlement (RS)	Measure of distance from towns, settlements and isolated residences.
Time Remoteness (TR)	Walking times from points of mechanised access such as roads, airstrips, motorised vessels. Assigned to one of 4 categories: 'Non remote', 'Half-day' (3-6 hours of travelling time), 'One-day' (6-12 hours) and 'Two-day' (>12 hours).
Biophysical Naturalness (BN)	The extent to which a defined area (the 1km grid square) is free from evidence of changes caused by modern technological society

The proposal cannot change the current ratings of each factor. The Remoteness from Settlement (RS) and Time Remoteness (TR) measures are external to the proposal and will not change. The VIA concludes that the small scale development will blend sufficiently into its location, so the proposal is unlikely to change the Apparent Naturalness (AN) of the landscape. The Biophysical Naturalness (BN) is also unchanged at a scale of 1km grid as the proposal will replace existing facilities in a designated overnight node. Overall, the physical attributes of the landscape and perceived remoteness of the site will not change with this proposal.

The social or intangible concepts of wilderness are more difficult to quantify and assess as these are opinion based. Some people will consider the intrinsic value of exclusive conservation to be more important than the values of wilderness-based recreation. Individuals who participate in

wilderness recreation will consider different levels of services or facilities to be more acceptable than others.

The proposed hut at Kia Ora is a change to the traditional bushwalking hut. This is mainly due to it being difficult to build a simple structure for public use that complies the NCC, bushfire hazard management and building health standards. The older huts on the OLT are also a negative impact on many walkers' experiences, as noted in Section 2.2 that describes the need for a new hut. The size of the proposed hut is consistent with Waterfall Valley, Pelion and Bert Nichols (and Windernere hut design) that accommodate up to 34 walkers. It is acknowledged however that the new huts are a change to the wilderness experiences of some walkers, particularly experienced Tasmanian walkers.

5.2 Presentation

5.2.1 Overland Track

Aspect	Source	Significance	Determinant
Use	NPRM Act 2002	Statute	Schedule 1 (h) encourage and provide for tourism, recreational use and enjoyment
	TWWHAMP 2016	Objective	To provide a diversity of visitor experiences in a manner that is consistent with the conservation of natural and cultural values.
	PWS	Standard	OLT Usage Guidelines 2005

The proposal will maintain current OLT service standards as described by the management plan and guidelines listed above. Walkers will continue to have the option to complete the track in as many days as they are prepared to travel. This may include visiting all eight huts and/or staying in a hut more than one night. Walkers book a place on the track, not bunks in huts. There will be some disruption to walker experiences in the 2021/22 season during construction.

The OLT is promoted as a five night – six day walk. The OLT walker exit survey shows about 80% of walkers stay at the five main overnight nodes and less than 25% stay at the other hut nodes. Kia Ora overnight node can be accessed via the upper Mersey valley area and Never Never loop, although overnight stays at Kia Ora are discouraged during the booking season to prevent overcrowding.

The proposed site capacity is considered reasonable to accommodate booked OLT walkers and their chosen itinerary, as well as non-booked walkers if necessary. Walker safety is priority in remote areas such as Kia Ora and the public facilities are available for all walkers during serve weather, fatigue or injury. Walkers booked on the OLT must be self-reliant and prepared to camp as bunks are not guaranteed in huts and natural hazards or injury can prevent walkers reaching a hut. The Kia Ora overnight node contains both tent platforms and the hut to accommodate walkers.

5.2.2 Commercial lease or licenses

Aspect	Source	Significance	Determinant
Use	NPRM Act 2002	Lease or Licence	Commercial operator's lease and licence conditions and mutual obligations.

Several private companies operating in Tasmania offer a guided walking experience of the OLT under legal arrangement listed in table above. Accommodation options are either camping in tents on the group tent platforms or staying in private huts. The companies offering guided camping tours require a licence to book the group platform and the Tasmanian Walking Company has the only lease to operate private huts on the OLT. The proposal will not change these lease and licence agreements. The proposal will change the walking experience in and around Kia Ora during construction are discussed below.

5.2.3 Walker experiences

Walker experiences will be impacted by the proposal, both during the construction works and on-going use of the site. The construction sequence will be designed to maintain the OLT service standards throughout the build. It is anticipated that all existing facilities can remain open until their replacements are complete.

The construction site could negatively impact walkers' wilderness experiences. The construction works will generate environmental nuisances such as mechanical noises, smells of fuels and the sight and noise of frequent helicopters deliveries. These nuisances are likely to feel amplified in a wilderness setting. It is imperative that walkers are made aware of the proposed works and potential impacts to their experience before they book for the walk.

A business continuity plan will be prepared to minimise disruption to the OLT. The plan will address notification methods for independent walkers, groups and commercial licence holders. Walkers will be notified of the works before booking their place on the track to ensure they accept the disruptions and anticipate the work site before commencement.

The proposal will have positive impacts on walker experiences, once complete. The aim of the proposal is to improve standards at Kia Ora and overall consistency of facilities on the OLT. The proposal will bring Kia Ora overnight node in line with site capacities and building standards of WFV and Windermere (to be constructed).

Commitment 9 – Business Continuity Plan to be prepared by PWS to maintain services and minimise disruption to independent walkers and commercial operators.

5.3 Natural hazards

5.3.1 Bushfire

Aspect	Source	Significance	Determinant
Bushfire	NPRM Act 2002	Statute	Functions include 30.3(ca) preventing and controlling bushfires Schedule 1 (g) protect and rehabilitate from bushfire.
	TWWHAMP 2016	KDO	8.1 Fire planning and public safety, including regional plans
	PWS	Plan	OLT Bushfire Response Plan 2017

PWS is a responsible agency for bushfire prevention, response and rehabilitation as noted in the table above. The key bushfire threat on the OLT is from lightning strikes as there are few neighbouring land use threats and the OLT is designated as a fuel stove only area. The highest bushfire danger ratings coincide with the peak booking period on the OLT. Upwards to 300 walkers could be at risk on the remote 65km track on any given day.

Bushfire response is prioritised to protect people in the first instance and then assets secondly (including natural, cultural and built assets). The OLT Bushfire Response Plan 2020 outlines a strategic decision-making process to protect walkers in multiple fire scenarios. Walkers may be redirected away from a predicted fire path by either walking ahead, back tracking or exiting on an alternative track. Walkers may also need to be evacuated and the track closed for period of time. The proposal will not change the application of this plan for walkers.

The construction site could be a potential bushfire ignition source. The construction site will contain flammable substances including fuels, solvents and gas. Works and equipment will create flames, sparks, electricity and heat, with the potential to ignite surrounding vegetation under the right conditions.

Bushfire prevention and response will need to be managed during the construction phase. The elevated risk must be specified in procurement documentation to ensure potential contractors are aware of the risks. The CEMP documents will need to address how bushfire ignitions will be mitigated as well as response strategies for different scenarios.

Commitment 10 - Bushfire risks and controls to be specified in procurement documents and CEMP and implemented during works.

Commitment 11 - Business Continuity Plan prepared by PWS to assess any additional emergency response strategies required for walkers during construction.

5.3.2 Building in a bushfire prone area

Aspect	Source	Significance	Determinant
Building	Building Act 2016	Statute	Hazardous areas and additional information requirements.
		Statute	Building Director's Determination - Requirements for Building in Bushfire-Prone Areas

It is mandatory to comply with the Directive for buildings in bushfire prone areas, listed in the table above. The Directive is the Tasmanian application of Australian Standard AS 3959:2018, Construction of buildings in bushfire-prone areas. The Directive is applicable to habitable buildings in the NCC classes 1, 2, 3, 8 and 9. Bushfire prone areas are defined as areas containing contiguous vegetation including grasses and shrubs (and not including maintained lawns, parks, golf courses or horticulture).

The proposed public hut is a class 3 building in a bushfire prone area. The building design must comply with Bushfire Attack Levels (BAL) as described in AS 3959:2018. The hut is designed to prevent fire entering the building by using non-flammable external cladding (cement sheet, black butt timber, steel or stone), ember proofing under the floor and all vents and expansion joints sealed with fine steel mesh. A fuel modified zone around the perimeter of the hut is required to prevent fire approaching the hut as well as using non-flammable walkway materials including steel or FRP that link to the building.

A Bushfire Hazard Management Plan (BHMP) will be prepared in accordance with the Directive. An indicative map of the bushfire hazard management area has been prepared for the EIS and is included as Appendix 5. The BHMP is proposed to retain standing trees as ember shields and will modify the understorey species to native grass and herb-field that will become a marsupial lawn and assist fire management. As outlined in Section 1.4, the TFS will assess the complete BHMP and the Building Surveyor will ensure the building designs comply with NCC, including AS

3959:2018. The designs intend to balance the need to maintain walker safety and a wilderness landscape.

Commitment 12 -Obtain all relevant permits and approvals before works commence.

5.3.3 Other hazards

The proposal is unlikely to be impacted by other natural hazards, such as:

- Flooding,
- Coastal inundation or erosion,
- Contaminated land or
- Landslip.

The site can be subject to serve weather conditions including high winds and snow. The risks posed to construction will be addressed as part of the work/health safety aspects of the construction planning.

5.4 Construction Phase

5.4.1 Aircraft

Aspect	Source	Significance	Determinant
Helicopters	TWWHAMP 2016	Statute	6.3.3 Authorisation from Director.
	Fly Neighbourly	Voluntary	TWWHA Fly Neighbourly Advice 2001

The use of helicopters during construction may be a negative impact to walker experiences and flights are restricted by the methods listed in the table above. The sound of helicopter engines can be an environmental nuisance to many walkers.

The construction phase of the proposal will require regular helicopter landings of people, supplies and materials. Helicopter operations will occur on average for one full day, once a week, for a period of six months. The flight paths may vary depending on the location of the staging area (Cradle Mountain, Lake St Clair or Arm River). A walker booked on the OLT is likely to be disturbed by helicopter, for brief periods during one of their 6 days walking the track.

Helicopter landings in the TWWHA are controlled by the Director of PWS, in accordance with the prescription of the Management Plan 2016. Landings must be at designated locations. Landings include the setting down of the machine as well as landing any supplies and materials via long lines. The use of helicopters in the TWWHA is also guided by the Fly Neighbourly Advice.

The use of helicopters will be economised wherever possible due their cost and potential noise disturbance. Kia Ora is a designated landing area in the Management Plan. Authorisation from the Director will be obtained for the project, and to further minimise noise disturbance, pilots will be required to generally comply with the fly neighbourly advice.

Commitment 12 -Obtain all relevant permits and approvals before works commence.

Commitment 13 - Pilots generally comply with Fly Neighbourly advice.

5.4.2 Construction site

The Construction site has the potential to impact a greater area than necessary. The site components will include:

- Footprints of the proposed buildings and linking tracks,
- Temporary accommodation and crib area for contractors,
- Storage areas for materials, equipment, and waste,
- Plus, general access around buildings, storage, and accommodation areas.

The construction site layout will need to accommodate these components.

The construction site layout must endeavour to retain native vegetation and prevent dieback. Native vegetation is the best defence against weeds colonising disturbed or bare ground. The construction site boundary must be marked onsite to limit incremental growth during works. Plus, components within the site must minimise contact with the ground to protect native vegetation.

Temporary components must be elevated (where possible) to minimise ground disturbance and the risk of weeds establishing on site. Accommodation buildings will need to be placed on temporary stumps or elevated footings rather than standard hardened pads. The storage of materials is to be minimised on site by scheduling works with corresponding deliveries. While on-site, materials should be kept on pallets or some other elevated platform to minimise contact with the ground. This will include the proposed buildings as construction progresses.

Commitment 14 – Site Plan for construction site to be prepared as part of CEMP and implemented by contractor.

Commitment 15 – Construction site boundary to marked onsite to limit incremental growth during works.

Commitment 16 – All temporary buildings and storage areas are to be elevated where possible to limit ground disturbance and die-back of native vegetation.

5.4.3 Sediment, pollutants and waste

The construction works have the potential to impact beyond the boundary of the construction site. Sediment loss is most likely during excavation works and serve weather events. Construction materials could contaminate the site from poor storage and handling of pollutants. Construction wastes could also spread beyond the boundary of the site if not collected and stored appropriately and removed regularly.

Construction works can cause sediment loss usually through natural drainage. Sediment loss is most likely during excavation works, before exposed soils are stabilised and covered by flooring. Extreme wind and rain events can increase the rate of sediment loss.

Pollutants stored on site could include fuels, solvents, paints, solder, batteries and other chemicals. Chemicals have the potential to cause localised contamination if spilt or disposed of poorly. Although, these chemicals do not pose a significant risk to biodiversity, contamination of the TWWHA is to be avoided.

Construction wastes could include timber cut-offs and sawdust, cement slurry, metal trimmings and solder as well as general packaging, plastics, and excess materials. These waste materials have

the potential to be easily spread by wind and extreme weather events. To avoid contaminating the TWWHA the construction site must retain all waste within its boundary.

Work practices must prevent the impacts spreading beyond the construction site boundaries and causing contamination. These work practices must be included in procurement specifications, for the contractors to address in their Construction Environmental Management Plan (CEMP) and implemented in the actions during works. CEMP work strategies could include:

Commitment 17 - Excavation, footings and flooring works completed quickly and in dry weather conditions, to minimise risk of sediment loss.

Commitment 18 - Erosion and sediment control for construction site included in CEMP and implemented on-site by contractor.

Commitment 19 - Chemical storage, handling and spill management included in CEMP and implemented on-site by contractor.

Commitment 20 - Waste collection and storage, and transport of different wastes types included in CEMP and implemented on-site by contractor.

5.4.4 Walker hazards

The construction site could be hazardous to walkers. The construction site is located within the overnight node. Construction site hazards could include trips and falls, electrical and chemical accidents or crush injuries from building materials.

It is highly likely walkers will wish to view building progress up close and from within the construction site, particularly when it is unattended. Walkers will be entering and exiting the node each day and staying overnight adjacent to the worksite. Walkers will have an opportunity to interact with the construction site if they choose.

The construction site will need to be managed to limit walker interactions with potential hazards. Work practices and safety procedures will be required to prevent access on to the construction site, as well as general hazards within the site, when operational and unattended.

Commitment 21 - Procedures to limit hazards to walkers specified in procurement and CEMP documents, and implemented during works.

5.5 Rehabilitation

5.5.1 Construction site

Rehabilitation of the construction site will be necessary at the completion of works. Rehabilitation will include dismantling and removing the construction site, returning the ground to natural surface levels and ensuring all waste materials have been collected and removed.

Natural surface levels will need to be re-established following the removal of construction items. Any divots, post holes or similar ground indentations will need to be filled and natural contours levelled with stockpiled sediments and soils on site. Some ripping of compacted areas around hut and toilet may be required to improve soil permeability.

Commitment 22 - All temporary components of the construction site removed at completion of works.

Commitment 23 – Stockpile soils onsite to be used for rehabilitation works.

Commitment 24 - Re-establish natural surface levels using on-site soil, with some ripping of compacted areas to improve permeability and grips to improve drainage.

5.5.2 Bare-ground and exposed soils

Bare ground and exposed soils will need to be rehabilitated at the completion of works. Areas of bare ground and exposed soils will likely be present around the proposed hut and toilet buildings. Promoting the growth of native vegetation will return the area to a more natural state and reduce the risk of weeds establishing at the site.

Regeneration of native vegetation will be actively promoted on all bare ground and exposed soils. Ground cover in the BHMA must have low fuel load, such as a native grass and herb-field that will become a marsupial lawn. Advice will be taken from an ecologist on the best method to achieve a marsupial lawn and a rehabilitation plan prepared for this site.

It is likely rehabilitation areas will need to be protected from trampling and browsing wildlife. Once the bare ground is covered, browsing animals will likely keep the lawns well cropped into the future. The lawn will also be able to sustain some intermittent trampling by walkers.

Commitment 25 – Prepare a rehabilitation plan informed by advice from NCH ecologists.

Commitment 26 - Fence rehabilitation areas from walkers and browsing animals while native vegetation regenerates.

5.5.3 Ongoing works program

Ongoing maintenance, inspection and rehabilitation works at Kia Ora will be incorporated into the OLT works program. The OLT track works program includes routine tasks and maintenance. OLT Rangers clean and maintain facilities every few days during the peak season and less regularly during winter months when sites become less accessible. Emptying and cleaning grease traps is an established routine task. OLT Rangers will also be tasked with maintaining the fencing around rehabilitation sites until suitable ground cover is established.

The regular presence of Rangers on the OLT can also identify emerging problems or complaints that may require further assessment. This will include:

- monitoring the operation of the greywater system and reporting any suspected blockages or clogging i.e. bad smells, and
- Monitoring the rehabilitation sites and reporting any potential weeds that may require treatment.

These problems can be rectified by standard operating procedures or may need further assessment during annual inspections. It is also likely an ecologist from NCH will also monitor the site annually and rehabilitation plan be revised accordingly.

The works program also includes regular, annual, or multi-year assessments of assets and facilities. These include:

- annual engineering assessments of buildings, elevated structures, and waste management systems.
- walking track condition reporting every three years, and
- three yearly OLT visitor exit surveys.

These assessments investigate operational issues, monitor asset conditions and walker issues, and identify maintenance tasks and rehabilitation works. This information is used to prioritise works in the rolling OLT 10 Year Works Program.

Remediating the current toilet site will become part of the OLT 10 Year Works Program and planned for the 2022/23 season. The works include extracting the waste and demolishing the building. The site will then be left to regenerate naturally with some fencing while ground cover is established.

6. Commitments

Table 4: Summary of Commitments

Number	Commitments	Phase
1	Avoid the Alpine Sphagnum bog and associated fen vegetation community	Planning Construction
2	Implement fly neighbourly advice for eagle nests..	Planning
3	Identify flight paths to avoid known nests, potential nesting habitat and eagle interactions.	Planning Construction
4	Standard weed planning and hygiene guidelines to be include in tender specifications during procurement for contractors to allow additional costs and time in their estimates.	Procurement
5	Rock materials to be sourced from recently certified phytosphthora and weed-free quarries and be of a similar parent material to the existing environment, to be included CEMP and implemented by contractor.	Procurement Construction
6	All equipment, machinery, boots, temporary building pads and objects entering the works site must be washdown prior to use and arrive clean to the work site, the washdown controls must be included in CEMP and implemented by contractor.	Procurement Construction
7	Retain all excavated soils and cleared vegetation on-site for use during rehabilitation.	Construction Rehabilitation
8	Comply with Unexpected Discovery Plan if aboriginal heritage is uncovered or suspected during works.	Planning Construction
9	Business Continuity Plan prepared by PWS to maintain services and minimise disruption to independent walkers and commercial operators.	Planning Construction
10	Bushfire risks and controls to be specified in procurement documents and CEMP and implement during works.	Procurement Construction
11	Business Continuity Plan prepared by PWS to assess any additional emergency response strategies required for walkers during construction.	Planning Construction
12	Obtain all relevant permits and approvals before works commence including <ul style="list-style-type: none"> - Planning, Building and Plumbing Permits, - Helicopter landing permits. 	Planning
13	Pilots comply with Fly Neighbourly advice.	Construction
14	Site Plan for construction site to be prepared as part of CEMP and implemented by contractor.	Construction

15	Construction site boundary to be marked onsite to limit incremental growth during works.	Construction
16	All temporary buildings and storage areas are to be elevated where possible to limit ground disturbance and die-back of native vegetation	Construction
17	Excavation, footings and flooring works completed quickly and in dry weather conditions, to minimise risk of sediment loss.	Construction
18	Erosion and sediment control for construction site included in CEMP and implemented on-site by contractor.	Construction
19	Chemical storage, handling and spill management included in CEMP and implemented on-site by contractor.	Construction
20	Waste collection and storage, and transport of different wastes types included in CEMP and implemented on-site by contractor.	Construction
21	Procedures to limit hazards to walkers specified in procurement and CEMP documents, and implemented during works.	Procurement Construction
22	All temporary components of the construction site removed at completion of works.	Rehabilitation
23	Stockpiled soils onsite to be used for rehabilitation works.	Rehabilitation
24	Re-establish natural surface levels using on-site soil, with some ripping of compacted areas to improve permeability and grips to improve drainage.	Rehabilitation
25	Prepare a rehabilitation plan informed by advice from NCH botanists.	Rehabilitation
26	Fence rehabilitation areas from walkers and browsing animals while native vegetation regenerates.	Rehabilitation

7. Conclusion

The proposal to replace the hut and toilet at Kia Ora overnight node has demonstrated it is a low risk to the OUVs of the TWWHA and environment of the site. The proposal will have a negligible impact on biological diversity and will not impact threatened species, communities, or critical habitats. The site contains glacial moraines that are part of the area's history although not a geo-conservation site. No cultural heritage has been identified at the site and there is low likelihood of heritage items being in the area. The proposed buildings are small and discretely located at the site and unlikely to impact the wilderness landscape.

The proposal supports the sustainable management of the OLT through its intent to reduce the negative impacts of use. The proposed toilet will be an upgrade to a full capture system and removes the need for manual handling of human waste. The proposed hut will accommodate 34 independent walkers, and in combination with tent platforms, the site will accommodate up to 50 independent walkers on hard stands. This is considered reasonable site capacity to accommodate walkers, their personal preferences (camping or huts) and chosen itineraries. The node facilities will also have the capacity to shelter walkers in this remote location, particularly during severe weather, injury, or emergencies.

The proposal has also demonstrated statutory compliance and the ability to comply with future assessments. The statutes, management plans and standards applicable to the proposal were outlined in Section 5. The proposal is compliant or consistent with their prescriptions. The statutory pathway outlined in Section 1 shows the future assessments and requirements for the proposal, before works can commence.

The proposal is considered a suitable development at the site if undertaken in accordance with a list of commitments in Section 6 of the EIS. Construction works have inherent risks and site-specific risks of causing negative impacts. The list of commitments provided is considered suitable to protect environmental values in the area and contain disturbance to inside the construction site boundary. Rehabilitation of disturbed ground and HMA will form part of the OLT works plan and be regularly monitored by Rangers.

8 Appendices

1 Kia Ora Site Concept Plan 2021

2 Hut Plans and Render

3 Toilet Plans

4 Grey Water System Site Plan and Design

5 Preliminary Bushfire Hazard Management Area

6 Additional Assessment Criteria

7 Matters of National Environmental Significance

8 Natural Values Survey

9 Line of Sight Maps

10 Aboriginal Heritage Assessment Report

11 Visual Impact Assessment Report

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