NOTICE OF MEETING

Meeting:	General Meeting
Date:	Wednesday 14 October 2026
Location:	Council Chambers, Georgetown
Councillors:	Cr. Hughes Cr. Royes Cr. Tincknell Cr. Ryan Cr. Carroll

Agenda Attached

Louise Knol
CHIEF EXECUTIVE OFFICER

Local Government Act 2009

Section 4(2) of the *Local Government Act 2009* state that the local government principles are:

(a) transparent and effective processes, and decision-making in the public interest; and

(b) sustainable development and management of assets and infrastructure, and delivery of effective services; and

(c) democratic representation, social inclusion and meaningful community engagement; and

(d) good governance of, and by, local government; and

(e) ethical and legal behaviour of councillors, local government employees and councillor advisors.

Local Government Regulation 2012

Section 254J Closed meetings:

(1) A local government may resolve that all or part of a meeting of the local government be closed to the public.

(2) A committee of a local government may resolve that all or part of a meeting of the committee be closed to the public.

(3) However, a local government or a committee of a local government may make a resolution about a local government meeting under subsection (1) or (2) only if its Councillors or members consider it necessary to close the meeting to discuss one or more of the following matters –

(a) the appointment, dismissal or discipline of a chief executive officer;

(b) industrial matters affecting employees;

(c) the local government's budget;

(d) rating concessions;

(e) legal advice obtained by the local government or legal proceedings involving the local government including, for example, legal proceedings that may be taken by or against the local government;

(f) matters that may directly affect the health and safety of an individual or group of individuals;

(g) negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government;

(h) negotiations relating to the taking of land by the local government under the *Acquisition of Land Act 1967*;

(i) a matter the local government is required to keep confidential under a law of, or formal arrangement with, the Commonwealth or a State;

(j) an investigation report given to the local government under chapter 5A, part 3, division 5 of the Act.

(4) However, a local government of a committee of a local government must not resolve that a part of a local government meeting at which a decision mentioned in section 150ER(2), 150ES(3) or 150EU(2) of the Act will be considered, discussed, voted on or made to be closed.

(5) A resolution that a local government meeting be closed must –

(a) state the matter mentioned in subsection (3) that is to be discussed; and

(b) include an overview of what is to be discussed while the meeting is closed.

(6) A local government or a committee of a local government must not make a resolution (other than a procedural resolution) in a local government meeting, or a part of a local government meeting, that is closed.

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1 OPENING OF MEETING

2 PRAYER

3 ATTENDANCE, APOLOGIES, AND LEAVE OF ABSENCE

4 CONDOLENCES AND CONGRATULATIONS

5 DECLARATION OF CONFLICTS OF INTEREST

6 CONFIRMATION OF MINUTES

6.1 Confirmation of Previous General Meeting Minutes 16 September 2026

Recommendation
That Council confirm the minutes of the September General Meeting dated 16th September 2026 as a true and accurate record of the meeting.

ETHERIDGE SHIRE COUNCIL



UNCONFIRMED MINUTES

GENERAL MEETING OF
ETHERIDGE SHIRE COUNCIL
HELD AT COUNCIL CHAMBERS, GEORGETOWN
ON WEDNESDAY 16 SEPTEMBER 2026
COMMENCING AT 9.00AM

ETHERIDGE SHIRE COUNCIL
MINUTES OF THE GENERAL MEETING
HELD AT COUNCIL CHAMBERS, GEORGETOWN
ON WEDNESDAY, 16 SEPTEMBER 2026

ATTENDANCE

Cr. Barry Hughes
Cr. Ian Carroll
Cr. Laurell Royes
Cr. Seven Ryan
Cr. Ian Tincknell

OFFICERS PRESENT

Mrs. Louise Knol. Chief Executive Officer
Mr. Alan Clark, Director of Engineering Services
Mrs Renee Bester, Director Corporate Services digital link (Teams) from 10:41am to 11:08am.
Miss. Gemma Bethel, Executive Assistant to the Chief Executive Officer

OPEN GALLERY

The Mayor declared the meeting open at 9:00am and welcomed all in attendance.

PRAYER

"We ask that today you give us wisdom to make good decisions to benefit our communities. Help us see what will benefit our shire and give us hearts to serve others. Amen".

ATTENDANCE, APOLOGIES, LEAVE OF ABSENCE

Attendance:

Apologies:

Leave of Absence:

CONDOLENCES AND CONGRATULATIONS

Condolences:
Council wish to send their condolences to the family of the Late Mr Owen Schmidt.

Congratulations:
Council wishes to congratulate the 2026 Debutantes and the Debutante Ball Committee and volunteers on the outstanding success of the 2026 Debutante Ball. Council acknowledges and appreciates the dedication, hard work and commitment of all involved in planning and delivering this memorable community event and extends its best wishes to the debutantes and their families.

DECLARATION OF CONFLICTS OF INTEREST

Cr Royes
Cr Royes informed the meeting of a possible Material Personal Interest (MPI) in agenda item 11.4 RADF Advisory Meeting Confirmation of Minutes due to Cr Royes' daughter (Ms Josie Prior) being a RADF committee member. In accordance with S150ED(2) of the *Local Government Act 2009*, the MPI does not apply in relation to a councillor's interest in a matter if the interest of the councillor, or an associate or related party of the councillor, is no greater than the personal interests in the matter of a significant proportion of persons in the local government area. Therefore an MPI does not exist. .

Cr Ryan

Cr Ryan informed the meeting of a possible Material Personal Interest (MPI) in agenda item 11.4 RADF Advisory Meeting Confirmation of Minutes due to Cr Ryan's daughter (Ms Sascha Young) being a RADF committee member. In accordance with S150ED(2) of the *Local Government Act 2009*, the MPI does not apply in relation to a councillor's interest in a matter if the interest of the councillor, or an associate or related party of the councillor, is no greater than the personal interests in the matter of a significant proportion of persons in the local government area. Therefore an MPI does not exist.
6. Confirmation Of Minutes

General Meeting Minutes – Wednesday 12th August 2026

RESOLUTION
That the Minutes of the General Council Meeting held at Georgetown on Wednesday 15th July 2026 be confirmed including the following amendments:

- Mayor Hughes leave of absence to be amended from NWQROC to FNQROC.
- Aerodrome Fencing – Georgetown and Forsayth, confirm map attachment due to a reference in the resolution

MOVED: Cr. Royes **SECONDED**: Cr. Tincknell

CARRIED
RESOLUTION #26.09.01
5/0

7. BUSINESS ARISING FROM GENERAL MINUTES

Cr. Ryan:
26.06.05 – Letter to Minister McBain re DRFA changes
26.08.08 – BESS CBA
26.08.13 – Independent Housing
26.05.16 – Wet & Dry Hire/Fuel Levy

Cr. Royes:
SP5.04.06 – DRFA Management Structure within Council

Cr Tincknell:
Flying Fox Management

8. MAYORAL UPDATE

RESOLUTION
That Council receives the Mayoral Update as presented.

MOVED: Cr. Ryan **SECONDED**: Cr. Carroll

CARRIED
RESOLUTION #26.09.02
5/0

ADJOURNMENT
Council adjourned for morning tea at 10:14am

RESUMPTION
Council resumed the meeting at 10:31am

CONSIDERATION OF OPEN SESSION REPORTS

Chief Executive Officer

10.1 Chief Executive Officer Briefing Report

RESOLUTION
That Council receives and notes the Chief Executive Officers Briefing Report for the period August 2026.

MOVED: Cr. Carroll **SECONDED**: Cr. Royes

CARRIED
RESOLUTION #26.09.03
5/0

10.2 Guideline for Councillor and Chief Executive Officer Attendance at Meetings, Events and Functions

EXECUTIVE SUMMARY
Council is asked to consider adopting the Guidelines for Councillor and Chief Executive Officer Attendance at Meetings, Events and Functions. These guidelines provide a framework to assist Councillors and the Chief Executive Officer (CEO) in determining attendance at meetings, events, functions, community activities and stakeholder engagements on behalf of Council.

RESOLUTION
That Council adopt the Guidelines for Councillor and Chief Executive Officer Attendance at Meetings, Events and Functions as presented with this Officer Report as amended, Item 7.

MOVED: Cr. Ryan **SECONDED**: Cr. Royes

CARRIED
RESOLUTION #26.09.04
5/0

10.2 Country University Centre (in Principle Support)

EXECUTIVE SUMMARY
Council has the opportunity to participate in the development of a North West Queensland Regional University Study Hub/Country University Centre model being coordinated through NWQROC Regional University Study Hub Project. The project is investigating a regionally appropriate hub-and-spoke approach aligned with the Australian Government's Regional University Study Hub (RUSH) Program and the Country Universities Centre (CUC) model.

The proposal presents an opportunity to improve access to tertiary education, workforce development, upskilling, career progression and lifelong learning opportunities across the Etheridge Shire while supporting broader regional collaboration across North West Queensland.

At this stage, the project remains in a planning and funding-readiness phase. No commitment is sought regarding funding, property, governance arrangements or ongoing operational costs. Rather, the report seeks Council's in-principle support for continued participation and development of the concept through NWQROC.

RESOLUTION
That Council:

1. Provides in-principle support for the continued development of the North West Queensland Regional University Study Hub / Country Universities Centre opportunity through NWQROC;
2. Supports further investigation of an Etheridge Shire hub-and-spoke model comprising Georgetown as the principal hub, with Forsayth, Einasleigh and Mount Surprise considered as potential spoke locations;

3. Notes that the Chief Executive Officer will continue discussions and collaboration with NWQROC, Country Universities Centre representatives, government agencies, education providers, industry stakeholders and community representatives regarding the development of the proposal;
4. Notes that Council's in-principle support does not constitute approval of any financial, property, governance or ongoing operational commitment; and
5. Requests that a further report be presented to Council following completion of the NWQROC development process, including governance options, funding pathways, facility requirements, risks and indicative costs for Council consideration.

MOVED: Cr. Carroll **SECONDED**: Cr. Royes

CARRIED
RESOLUTION #26.09.05
5/0

ATTENDANCE
Renee Bester joined the meeting via Teams at 10:41am

CONSIDERATION OF OPEN SESSION REPORTS

Director of Corporate Services

11.1 Director of Corporate Services Briefing Report August 2026

RESOLUTION
That Council receives and notes the Director of Corporate Services Briefing Report for the month of August 2026.

MOVED: Cr. Tincknell **SECONDED**: Cr. Carroll

CARRIED
RESOLUTION #26.09.06
5**/0**

11.2 Financial Performance as at 31 August 2026

EXECUTIVE SUMMARY
In accordance with section 204 of the *Local Government Regulation 2012*, a monthly finance report is required to be presented to Council stating the progress made in relation to the budget for the period of the financial year as near as practicable to the end of the month before the meeting held.

RESOLUTION
That Council receives the financial statements for the period ended 31 August 2026 pursuant to, and in accordance with section 204 of the *Local Government Regulation 2012*.

MOVED: Cr. Ryan **SECONDED**: Cr. Royes

CARRIED
RESOLUTION #26.09.07
5/0

11.3 Independent Audit Committee Chairperson EOI

EXECUTIVE SUMMARY
This report provides Council with information on the proposed Expression of Interest process to identify suitably qualified candidates for appointment as an independent Chairperson of Council's Audit Committee, strengthening governance, independence and alignment with legislative and sector guidance.

RESOLUTION
That Council:

1. Notes the proposed commencement of an Expression of Interest process to seek suitably qualified candidates for appointment as an independent Chairperson of Council's Audit Committee;
2. Notes that the Expression of Interest process will include public advertising across appropriate public platforms, assessment against a skills matrix, shortlisting and interviews;
3. Notes that $10,000 has been budgeted as a stipend for meeting attendance by the independent Chairperson; and
4. Notes that the recommended candidate for appointment as Independent Chairperson will be presented to a future Council meeting for consideration and determination following completion of the assessment process.

MOVED: Cr. Royes **SECONDED**: Cr. Ryan

CARRIED
RESOLUTION #26.09.08
5/0

CONFLICT OF INTEREST

Cr Royes
Cr Royes informed the meeting of a possible Material Personal Interest (MPI) in agenda item 11.4 RADF Advisory Meeting Confirmation of Minutes due to Cr Royes' daughter (Ms Josie Prior) being a RADF committee member. In accordance with S150ED(2) of the *Local Government Act 2009*, the MPI does not apply in relation to a councillor's interest in a matter if the interest of the councillor, or an associate or related party of the councillor, is no greater than the personal interests in the matter of a significant proportion of persons in the local government area. Therefore an MPI does not exist. .

Cr Ryan
Cr Ryan informed the meeting of a possible Material Personal Interest (MPI) in agenda item 11.4 RADF Advisory Meeting Confirmation of Minutes due to Cr Ryan's daughter (Ms Sascha Young) being a RADF committee member. In accordance with S150ED(2) of the *Local Government Act 2009*, the MPI does not apply in relation to a councillor's interest in a matter if the interest of the councillor, or an associate or related party of the councillor, is no greater than the personal interests in the matter of a significant proportion of persons in the local government area. Therefore an MPI does not exist.

11.4 RADF Advisory Meeting Confirmation of Minutes

EXECUTIVE SUMMARY
Round 1 of the FY2026/2027 RADF funding closed earlier this year and a RADF Advisory Committee meeting was scheduled for 6 August 2026 to consider the applications received. As there was no quorum at the meeting, votes were subsequently taken by email poll and recommendations are made to Council for endorsement.

RESOLUTION
That Council endorse the following recommendations of the RADF Advisory Committee, as determined by email poll of the Committee as there was not a quorum at the Committee Meeting scheduled for 6 August 2026:

1. The minutes of the previous meeting held 27th April 2026 be confirmed;
2. Award RADF funding to the applicant Nerida van Emmerick for the amount of $4,889.00 for Wire Gem Tree Workshops;
3. Accept the resignation of Kelly Bethel, thank her for her service and further readvertise for the Committee position; and
4. Readvertise to continue to accept applications for the remaining available RADF Community Grant Funding.

MOVED: Cr. Tincknell **SECONDED**: Cr. Carroll

CARRIED
RESOLUTION #26.09.09
5/0

ATTENDANCE
Renee Bester left the meeting at 11:08am

CONSIDERATION OF OPEN SESSION REPORTS

Director of Engineering Services

12.1 Director Engineering Services - Briefing Report August 2026

RESOLUTION
That Council receives and notes the Director of Engineering Services Briefing Report for the month of August 2026.

MOVED: Cr. Carroll **SECONDED**: Cr. Royes

CARRIED
RESOLUTION#26.09.10
5/0

CONSIDERATION OF CLOSED SESSION REPORTS

RESOLUTION
That Council go into closed session at 11:27am, pursuant to section 254J (3) (f) and (g), of the *Local Government Regulation 2012*, to discuss the following items:

- Etheridge Local Disaster Management Plan Adoption
- ESC2026-027 - Strathmore Road Stabilisation

MOVED: Cr. Royes **SECONDED**: Cr. Tincknell

CARRIED
RESOLUTION#26.09.11
5/0

RESOLUTION
Council resolves to come out of closed session at 12:30pm

MOVED: Cr. Ryan **SECONDED**: Cr. Carroll

CARRIED
RESOLUTION#26.09.12
5/0

13.1 Etheridge Local Disaster Management Plan Adoption

EXECUTIVE SUMMARY
The Etheridge Shire Local Disaster Management Plan (LDMP) has been reviewed and updated in accordance with the requirements of the *Disaster Management Act 2003* and the Queensland Disaster Management arrangements. The revised Plan has been considered and endorsed by the Etheridge Local Disaster Management Group (LDMG) and is now presented to Council for formal adoption.

The LDMP provides the framework for disaster preparedness, prevention, response, recovery and resilience activities within the Etheridge Shire. The Plan outlines local arrangements, responsibilities, governance structures, communication protocols and operational processes to support effective disaster management before, during and after disaster events.

RESOLUTION
That Council:
1. Notes that the Etheridge Shire Local Disaster Management Group has reviewed and endorsed the revised Etheridge Local Disaster Management Plan;
2. Adopts the Etheridge Shire Local Disaster Management Plan as amended;

3. Authorises the Chief Executive Officer to make minor administrative amendments to the Plan where required, provided such amendments do not materially alter the intent of the document; and
4. Notes that the Plan will be submitted to the District Disaster Management Group and made publicly (with sensitive information excluded) available in accordance with legislative requirements.

MOVED: Cr. Carroll **SECONDED**: Cr. Royes

CARRIED
RESOLUTION #26.09.13
5/0

12.2 ESC2026-027 Strathmore Road Stabilisation

EXECUTIVE SUMMARY
The sealed section of Strathmore Road was significantly damaged during the severe weather events in early 2026. Northlane picked up the damage and has had the rectification works approved by Queensland Reconstruction Authority (QRA). Tenders were called for the works with the requirement that all works need to be completed prior to the end of November 2026 as per tender number ESC2027-027 – Strathmore Road Stabilisation. The majority of the road will be cement stabilised to provide superior flood resistance.

RESOLUTION

1. That Council pursuant to section 234(1) of the *Local Government Regulation 2012*, Council enter a contract under an LGA arrangement with Stabilised Pavements Australia for the value of $3,319,879.40 excl GST under tender ESC2026-027.
2. That Council delegate authority to the CEO in accordance with the Local Government Act 2009 to enter into contracts, finalise and negotiate any and all matters relating to this contract subject to normal procurement practices and policies.
3. Note that the procurement process was undertaken in accordance with the requirements of the *Local Government Act 2009*, the *Local Government Regulation 2012*, and Council's Procurement Policy, and that the recommendation has been assessed having regard to the sound contracting principles of values for money, open and effective competition, the development of competitive local business and industry, environmental protection, and ethical behaviour and fair dealing

MOVED: Cr. Carroll **SECONDED**: Cr. Royes

CARRIED
RESOLUTION #26.09.14
5/0

RESOLUTION
That Council received a verbal update regarding the Gulf Development Road project current financial status and ongoing discussions with the Department of Transport and Main Roads.

MOVED: Cr. Royes **SECONDED**: Cr. Tincknell

CARRIED
RESOLUTION #26.09.15
5/0

ADJOURNMENT
Council adjourned for lunch at 12:37pm

RESUMPTION
Council resumed the meeting at 1:15pm

GENERAL BUSINESS

Cr.	Item
Cr. Carroll	Flat Creek road closure (Peter Henry)
Cr. Carroll	Northlane site visits lack of courtesy
Cr. Carroll	Northlane site visits lack of courtesy

Cr. Carroll	Shire wide signage issues/budge
Cr. Tincknell	Suggestion forklift access to hall.
Cr. Tincknell	Debrief Gilbert river community connect/Community connects in general.
Cr. Tincknell	Old GB items e.g. Mt Surprise dump.
Cr. Tincknell	Low water pressure at washdown bay
Cr. Tincknell	Wet & Dry Hire contractor vehicle bogging
Cr. Royes	Email (Peter Henry) Road Register matters
Cr. Royes	Email (Elisa Fox) Townley Station matters
Cr. Royes	Email (Tony Gallagher) Town Planning matters
Cr. Royes	Accessibility of Community Buildings (outside Georgetown)
Cr. Royes	LDMG Committee (Most significant Shire emergency supply/resupply stakeholder omitted from recent meeting) (Only business in Shire responsible for emergency aviation fuel supply & logistics)
Cr. Royes	**Urgent** Georgetown Town Fence (no action -as per previous "urgent" General Business)
Cr. Royes	DRFA Project Management Lack of communication (entry to properties/homestead complexes)
Cr. Royes	DRFA Schedule Delays

CONCLUSION

There being no further business the Deputy Mayor declared the meeting closed at 2:28pm. These minutes will be confirmed by Council at the General Meeting held on Wednesday 14th October 2026.

Cr. Barry Hughes
MAYOR

7 BUSINESS ARISING

Attached is a list of items from previous Council meetings for discussion.

Attachment
1. Business Arising as at 8 th Oct 2026 [**7.1.1**]

Business Arising						
#	**Item No**	**Item**	**Resolution**	**Officer**	**Action Taken**	**Progress**
16 September 2026 - General Meeting						
GM26.09.01	6	Confirmation of Minutes	That the Minutes of the General Council Meeting held at Georgetown on Wednesday 15th July 2026 be confirmed including the following amendments: -Mayor Hughes leave of absence to be amended from NWQROC to FNQROC. -Aerodrome Fencing – Georgetown and Forsayth, confirm map attachment due to a reference in the resolution	EA	Minutes uploaded to website	Complete
GM26.09.02	8	Mayoral Update	That Council receives the Mayoral Update as presented.	CEO		No action proposed
GM26.09.03	10.1	Chief Executive Officer – Briefing Report August 2026	That Council receives and notes the Chief Executive Officers Briefing Report for the period August 2026.	CEO		No action proposed
GM26.09.04	10.2	Guidelines for Councillor and Chief Executive Officer Attendance at Meetings, Events and Functions	That Council adopt the Guidelines for Councillor and Chief Executive Officer Attendance at Meetings, Events and Functions as presented with this Officer Report as amended, Item 7.	CEO		Complete
GM26.09.05	10.3	Country University Centre (in Principle Support)	That Council: 1.Provides in-principle support for the continued development of the North West Queensland Regional University Study Hub / Country Universities Centre opportunity through NWQROC; 2.Supports further investigation of an Etheridge Shire hub-and-spoke model comprising Georgetown as the principal hub, with Forsayth, Einasleigh and Mount Surprise considered as potential spoke locations; 3.Notes that the Chief Executive Officer will continue discussions and collaboration with NWQROC, Country Universities Centre representatives, government agencies, education providers, industry stakeholders and community representatives regarding the development of the proposal; 4.Notes that Council's in-principle support does not constitute approval of any financial, property, governance or ongoing operational commitment; and 5.Requests that a further report be presented to Council following completion of the NWQROC development process, including governance options, funding pathways, facility requirements, risks and indicative costs for Council consideration.	CEO	Advised MWQROC	Complete
GM26.09.06	11.1	Director of Corporate Services Briefing Report August 2026	That Council receives and notes the Director of Corporate Services Briefing Report for the month of August 2026.	DCS		No action proposed
GM26.09.07	11.2	Financial Performance as at 31 August 2026	That Council receives the financial statements for the period ended 31 August 2026 pursuant to, and in accordance with section 204 of the *Local Government Regulation 2012*.	DCS		No action proposed
GM26.09.08	11.3	Independent Audit Committee Chairperson EOI	That Council: 1.Notes the proposed commencement of an Expression of Interest process to seek suitably qualified candidates for appointment as an independent Chairperson of Council's Audit Committee; 2.Notes that the Expression of Interest process will include public advertising across appropriate public platforms, assessment against a skills matrix, shortlisting and interviews; 3.Notes that $10,000 has been budgeted as a stipend for meeting attendance by the independent Chairperson; and 4.Notes that the recommended candidate for appointment as Independent Chairperson will be presented to a future Council meeting for consideration and determination following completion of the assessment process.	DCS		In progress
GM26.09.09	11.4	RADF Advisory Meeting Confirmation of Minutes	That Council endorse the following recommendations of the RADF Advisory Committee, as determined by email poll of the Committee as there was not a quorum at the Committee Meeting scheduled for 6 August 2026: 1.The minutes of the previous meeting held 27th April 2026 be confirmed; 2.Award RADF funding to the applicant Nerida van Emmerick for the amount of $4,889.00 for Wire Gem Tree Workshops; 3.Accept the resignation of Kelly Bethel, thank her for her service and further readvertise for the Committee position; and 4.Readvertise to continue to accept applications for the remaining available RADF Community Grant Funding.	DCS	Actioned as per the minutes	Complete
GM26.09.10	12.1	Director of Engineering Briefing Report August 2026	That Council receives and notes the Director of Engineering Services Briefing Report for the month of August 2026.	DES		No action proposed
GM26.09.11		Closed Session Reports	That Council go into closed session at 11:27am, pursuant to section 254J (3) (f) and (g), of the Local Government Regulation 2012, to discuss the following items: •Etheridge Local Disaster Management Plan Adoption •ESC2026-027 - Strathmore Road Stabilisation	CEO		No action proposed
GM26.09.12		Closed Session Reports	Council resolves to come out of closed session at 12:30pm	CEO		No action proposed
GM26.09.13	13.1	Etheridge Local Disaster Management Plan Adoption	That Council: 1. Notes that the Etheridge Shire Local Disaster Management Group has reviewed and endorsed the revised Etheridge Local Disaster Management Plan; 2. Adopts the Etheridge Shire Local Disaster Management Plan as amended; 3. Authorises the Chief Executive Officer to make minor administrative amendments to the Plan where required, provided such amendments do not materially alter the intent of the document; and 4. Notes that the Plan will be submitted to the District Disaster Management Group and made publicly (with sensitive information excluded) available in accordance with legislative requirements.	CEO	Amendments made.	Complete

GM26.09.14	13.2	ESC2026-027 Strathmore Road Stabilisation	1.That Council pursuant to section 234(1) of the Local Government Regulation 2012, Council enter a contract under an LGA arrangement with Stabilised Pavements Australia for the value of $3,319,879.40 excl GST under tender ESC2026-027. 2.That Council delegate authority to the CEO in accordance with the Local Government Act 2009 to enter into contracts, finalise and negotiate any and all matters relating to this contract subject to normal procurement practices and policies. 3.Note that the procurement process was undertaken in accordance with the requirements of the Local Government Act 2009, the Local Government Regulation 2012, and Council's Procurement Policy, and that the recommendation has been assessed having regard to the sound contracting principles of values for money, open and effective competition, the development of competitive local business and industry, environmental protection, and ethical behaviour and fair dealing	DES	Contracts exchanged. Pre-start meeting held 29 September.	Complete
GM26.09.15			That Council received a verbal update regarding the Gulf Development Road project current financial status and ongoing discussions with the Department of Transport and Main Roads.	DES		No action proposed
12 August 2026 - General Meeting						
GM26.08.15	12.2	Aerodrome Fencing - Georgetown and Forsayth	That Council resolve to 1. Erect the new fence at the Forsayth Aerodrome on the current alignment; and 2. Erect the new fence at the Georgetown Aerodrome on the red alignment as denoted in the attached Aerodrome Fence Location Plans.	DES	The surveyor has been engaged to do the set-out	In progress
17 June 2026- General Meeting						
GM26.06.23	13.1	Kidston Stage 3 (K3BESS) - Community Benefit Agreement	Following consultation Council resolves: A: To consider entering into a Community Benefits Agreement subject to the receipt of written acceptance from the proponent of responsibility for the full cost of Councils legal fees associated with the review, preparation and execution of the Community Benefits Agreement. B: That Council resolve that the financial contribution to Etheridge Shire Council to be included in the Community Benefits Agreement, to be drafted by GENEX for review by Councils legal advisors, shall include: (a) Minimum ESC CBA Payment of $194.00 per megawatt hour per annum, being a total of $155,200.00 per annum adjusted by the change in CPI on each 1 July; and (b) Minimum ESC Administration payment of - $7,760.00 per annum adjusted by the change in CPI on each 1 July (5% of CBA Payment). C: That the parties to the Community Benefits Agreement shall include: (a) The landowner; (b) The developer; and, (c) Etheridge Shire Council. D: That the Community Benefits Agreement shall include a clause to the effect that: (a) each Landowner is as jointly and severally Liable as is the applicant to pay the financial benefit to Council, immediately upon the due date; (b) the Landowner must not sell or transfer the whole or any part of the Land the subject of the Community Benefit Agreement unless the Landowner has first obtained the written consent from the proposed transferee that this agreement will continue to attach to the relevant part of the Land and the consent from Council to the proposed transferee becoming subject to the Landowner's obligations. E: Any final decision is to be negotiated and executed by Council.	CEO	Matter brought to August 2026 Ordinary Meeting for consideration	Complete
20 May 2026- General Meeting						
GM26.05.16	13.3	Wet and Dry Hire – CPI and Fuel Levy	That Council: Endorses the variation to Tender ESC2023-003: 1.CPI increase of 3.8% to be applied to the existing Wet and Dry Contract Tender ESC2023-003, for invoices for work post 1 January 2026 2.Fuel Levy procedure to be applied to the existing Wet and Dry Contract Tender ESC2023-003 for works completed post 8 March 2026.	DES		In Progress
18 February 2026- General Meeting						
GM26.02.14	10.1	Chief Executive Officer – Briefing Report January 2026	That Council instruct the CEO to go to tender for the design & construction of Stage 1 of the Mt Surprise Multipurpose Centre (W4Q) for the amended design (including concrete surfaces, roofing structure, two general purpose rooms and standalone ablution block).	CEO	Northlane progressing scope/designs. Presented to Sept Councillor workshop.	In progress
17 September 2025 - General Meeting						
GM2025/46	10.5	Review - ESC-C001 - Administrative Action Complaints Policy	That the Administrative Action Complaints Policy ESC - C001, be further reviewed and presented at a future meeting.	CEO	MAR - Reviewed version being peer reviewed by LGMA Governance Advisory Service	In progress
April 2025 - General Meeting						
SP25.04.06	Motion Without Notice	That Council investigate an alternate DRFA Management structure pursuant to the strategic intent of Council's discussion on 26th February 2025.	CEO	CEO	Position advertised.	In progress

8 MAYORAL UPDATE

Item No: **8.1**

Subject: **Mayoral Update**

The Mayor attended meetings and engagements in the time since the last Council meeting, including but not limited to:

SEPTEMBER:
17/9 - LGAQ Roads and Transport Forum questions.
- NWROC pre-brief Special Commissioner.
- Andrew Cripps meeting.
- Bio-Security Exercise.
18/9 - NWROC Exec. catch up.
- Local Producers Forum.
20/9 - Travel.
21/9 - Bio-security Exercise.
22/9 - TMR/Etheridge - GDR.
- Minister Ann and Bush Council Compact.
23/9 - Oldies Smoko.
24/9 - GSD Board Meeting.
25/9 - NWROC Catch up.
- Audit Committee.
- NWROC AGM/General Meeting.
27/9 - Einasleigh Action Group.
- Bob Katter.
30/9 - Workshop.

OCTOBER:
2/10 - NWROC Catch up.
7/10 - Community Catch up Einasleigh.
8/10 - GSD Board.
9/10 - NWROC Catch up.
12/10 - Audit Committee.
13/10 - Oldies Golden Games.
14/10 - General meeting.

RECOMMENDATION
That Council receives the Mayoral Update as presented.

From: Kristy Thomson <Kristy.Thomson@dlgwv.qld.gov.au> on behalf of Bronwyn Blagoev <Bronwyn.Blagoev@dlgwv.qld.gov.au>
Sent: Tuesday, 06 October 2026 14:07:25
To: Cr Barry Hughes <Mayor@etheridge.qld.gov.au>; Louise Knol <LouiseK@etheridge.qld.gov.au>
Subject: Mandatory Training

OFFICIAL

Dear Mayor and Louise,

I would like to personally thank your councillors for taking the time to complete their mandatory training.

The work you do for your communities is important, and completing this training helps ensure councillors are well equipped to make informed decisions and uphold strong governance practices.

Congratulations to your council on achieving full completion of mandatory training requirements. Thank you for your ongoing dedication to service your community and helping to strengthen local government across Queensland.

Regards,
Bronwyn

Bronwyn Blagoev
Director-General
Department of Local Government, Water and Volunteers

P: 0474 091 286
E: bronwyn.blagoev@dlgwv.qld.gov.au
W: www.dlgwv.qld.gov.au

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9 NOTICES OF MOTION

Nil

10 CHIEF EXECUTIVE OFFICER - OPEN SESSION REPORTS

Item No: **10.1**

Subject: **Chief Executive Officer Monthly Briefing Report**

Classification: **Open**

Author: **Louise Knol, Chief Executive Officer**

RECOMMENDATION

That Council notes the Chief Executive Officer's Briefing Report for the reporting period.

Cairns Hospital and Hinterland Hospital and Health Service MOU: The revised MOU was submitted to CHHHS during the week commencing 7 September 2026. CHHHS advised they are still reviewing.

Growing Our Regions Project:

- Visitor Interpretation Approval Status
  - Detail Design and Production Documentation – 70% review stage
  - Graphic Design and Content – 50% review stage
- Ted Elliott Fitout Approval Status
  - Detail Design and Production Documentation – 50% review stage
  - Graphic Design – 50% review stage

Works for Queensland Mt Surprise Multi-Purpose Centre: Northlane Consulting Engineers have been appointed as project manager with time being of the essence. Site surveyor engaged. Project scoping underway with presentation to September Councillor Workshop.

FNQRP Georgetown Disaster Coordination Centre: Northlane Consulting Engineers have been appointed as project manager with time being of the essence. Site surveyor engaged. Project scoping underway with presentation to September Councillor Workshop.

Director of Engineering Services Recruitment: Recruitment program continues with interviews to be held mid-October.

Team Culture Survey: The Etheridge Shire Council "Have Your Say" Team Culture Survey closed on 31 August 2026, achieving a participation rate of 75% from team members. Survey responses are currently being analysed, with outcomes to be communicated through a "Hear, Listen, Act" framework to ensure meaningful engagement and continuous organisational improvement. Due to capacity issues, the final report was delayed by 2 weeks. This report will be distributed to team members during the week of 12 October 2026.

Etheridge Agriculture Precinct Project: The Agriculture Forum was held in Georgetown on 18 September 2026. The final project report is currently being finalised by the Project Officer. The CEO is continuing with this project with funding extended to 30 November 2026. Council is currently awaiting confirmation from DPI for a project related to water needs/allocation and input into the Gulf Water Plan Review to progress.

Stakeholder Liaison: Strategic and operational liaison with community, industry and agencies has been undertaken during the month including – DPI, GSD, NWQROC, FNQROC, RRTG, DTMR, Georgetown Youth Hostel (site visit), Georgetown businesses, Griffith University, Community Recovery, ESC Audit Committee, QPS, Health providers, Northlane, DNRMMRRD, DETSI, DLGWV, OIA, QRA, Community Groups, Telstra, TTNQ,

ATTACHMENTS

Nil

Item No: **10.2**

Subject: **Closure of Shire Offices, Depot Administration, Workshop, Outside Work Crews, Town Crews, Terrestrial Centre & Childcare.**

Classification: **Open**

Author: **Jodi Kernan, Senior Administration Officer (Payroll/HR)**

EXECUTIVE SUMMARY

Each year Council has closed the Shire operations over the Christmas and New Year period to allow Council team members to enjoy the festive season with family and friends.

RECOMMENDATION

That Council endorse the closure of Council operations as follows subject to appropriate on call arrangements with senior staff being put into place for emergency matters:

1. The Shire and Depot Administration Offices, Terrestrial Centre, Little Gems Childcare Centre, Town Crews and Workshop from Saturday 19th December 2026 to 3rd January 2027 with the return to work date being Monday 4th January 2027; and
2. The Road and RMPC Crews from Sunday 20th December 2026 to 18th January 2027 with the return to work date being Tuesday 19th January 2027.

BACKGROUND

The closure of Council over the Christmas and New Year period has been a consistent decision of Council to recognise the dedication and work that has been undertaken throughout the year by Council team members.

Closure of Administration & Depot Offices, Terrestrial, Little Gems Childcare, Workshop & Town Crews

In accordance with previous decisions of Council and with Council's current Enterprise Bargaining Agreement 2012, management is seeking Council's endorsement regarding the closure of the Shire and Depot Administration Offices, Terrestrial Centre, Little Gems Childcare Centre, Workshop andTown Crews from Saturday 19th December 2026 to 3rd January 2027; with the return to work date being Monday 4th January 2027. The table below denotes the proposed closure dates.

Sat 19-12	Sun 20-12	Mon 21-12	Tues 22-12	Wed 23-12	Thurs 24-12	Fri 25-12	Sat 26-12	Sun 27-12	Mon 28-12	Tues 29-12	Wed 30-12	Thur 31-12	Fri 01-01	Sat 02-01	Sun 03-01
Weekend	Weekend	Leave Day	Leave Day	Leave Day	Leave Day	Xmas Day P/H	Weekend	Weekend	Boxing Day P/H	Leave Day	Leave Day	Leave Day	New Years Day P/H	Weekend	Weekend

Closure of Road and RMPC Crews

In accordance with previous decisions of Council and Council's current Enterprise Bargaining Agreement 2012, management is seeking Councils endorsement regarding the closure of the Road and RMPC Crews from Sunday 20th December 2026 to 18th January 2027 with the return to work date being Tuesday 19th January 2027. The tables below denote the proposed closure dates.

Sun 20-12	Mon 21-12	Tues 22-12	Wed 23-12	Thurs 24-12	Fri 25-12	Sat 26-12	Sun 27-12	Mon 28-12
Last day of work	Leave Day	Leave Day	Leave Day	Off shift	Xmas Day P/H	Off shift	Off shift	Boxing Day P/H

Tues 29-12	Wed 30-12	Thurs 31-12	Fri 01-01	Sat 02-01	Sun 03-01	Mon 04-01	Tues 05-01	Wed 06-01
Leave Day	Leave Day	Leave Day	New Year's Day P/H	Leave Day	Leave Day	Leave Day	Leave Day	Leave Day

Thurs 07-01	Fri 08-01	Sat 09-01	Sun 10-01	Mon 11-01	Tues 12-01	Wed 13-01	Thurs 14-01	Fri 15-01	Sat 16-01	Sun 17-01	Mon 18-01	Tues 19-01
Leave Day	Leave Day	Off Shift	Off Shift	Leave Day	Leave Day	Leave Day	Off Shift	Off Shift	Off Shift	Off Shift	Off Shift	Return to work

LINK TO CORPORATE PLAN

BUDGET & RESOURCE CONSIDERATIONS
During this period there are three (3) Statutory Public Holidays during the proposed closure.

Employees normally take annual leave; accumulated RDO's or TOIL to cover the other non-statutory days. Council has provisioned for Public Holidays within the 2026/2027 Budget as well as leave entitlements.

LEGAL CONSIDERATIONS
Nil

POLICY IMPLICATIONS
Nil

CONSULTATION

Consult:	Discussed with relevant staff and in-line with established protocols and past practices.

RISK ASSESSMENT
Risk Assessment Outcome: Low

ATTACHMENTS
Nil

Item No:	**10.3**
Subject:	**Material Change of Use, Battery Energy Storage Facility (including ancillary infrastructure), Gilberton Road Einasleigh**
Classification:	**Open**
Author:	**{Patrick Clifton, Consultant Town Planner}**

EXECUTIVE SUMMARY

At the Ordinary Council Meeting of 12 August 2026, a request from K3W Project Co Pty Ltd as trustee for the K3W Project Trust (Genex) was considered for Council to enter into a Community Benefits Agreement (CBA) to facilitate the lodgement of a development application for a Battery Energy Storage Facility at Gilberton Road, Kidston. At that meeting, Council resolved to enter into the CBA and delegated authority to the Chief Executive Officer to finalise and execute the agreement:

The agreement has been duly executed and, on 14 August 2026, an application was lodged with the State Assessment and Referral Agency (SARA) as the Assessment Manager.

As part of the application process, SARA in their confirmation notice, have identified Etheridge Shire Council as an Advice Referral Agency. As an advice agency, Council can only provide advice and cannot direct a refusal or approval and cannot require conditions to be attached to any approval granted; however, SARA are required to consider any representations made in respect of the application by Council.

The application is subject to Impact Assessment, requiring the following public notice steps:

- giving notice to all affected local governments as:
  - identified in the social impact assessment for the development; or
  - nominated by the chief executive, if the chief executive decided not to require a social impact assessment for the development, and
- giving notice to the adjoining owners of all lots adjoining the premises the subject of the application; and
- giving notice to all owners of lots located within 1500m of the premises the subject of the application; and
- if a community notice board exists and permission is given by an authorised person, placing a notice on community notice boards for the period of time up to and including the stated date; and
- giving notice on the assessment manager's website for the period of time up to and including the stated day.

The purpose of this report is to advise the Council of the nature of the application and to recommend a referral response to be provided to SARA as the assessment manager for consideration in the determination of the application.

RECOMMENDATION

That Council:

1. Advise the State Assessment and Referral Agency that the proposed development does not conflict with the Etheridge Shire Planning Scheme;
2. Request that any development approval be conditioned to require a detailed Social Impact Management Plan (SIMP) and, in particular compliance with the outcomes identified in Table D-1 SIMP Framework of the Social Impact Assessment;
3. Note that Council may make a submission to the State Assessment and Referral Agency regarding the Social Impact Assessment; and

4. Delegate Authority to the Chief Executive Officer to provide the referral response to the State Assessment and Referral Agency.

BACKGROUND

Council will recall that at its 12 August 2026 meeting, it considered a request from K3W Project Co Pty Ltd as trustee for the K3W Project Trust (Genex) for Council to enter into a Community Benefits Agreement (CBA) to facilitate the lodgement of a development application for a Battery Energy Storage Facility at Gilberton Road, Kidston. At that meeting, Council resolved to enter into the CBA and delegated authority to the Chief Executive Officer to finalise and execute the agreement:

The obligations contained in that agreement were broadly the following:

- The payment of Council's reasonable fees for the negotiation, preparation and execution of the agreement;
- Defining the host community as means all communities within the Etheridge local government area;
- An annual financial contribution of $194.00 per megawatt hour of guaranteed useable energy capacity, set at a minimum of 720MWh, for the first 10 years (to reflect the 10 year Local Resident Energy Rebate proposed by GENEX), indexed annually to a maximum of 5% (annual base contribution - $139,680.00);
- An annual financial contribution of $163.00 per megawatt hour of guaranteed useable energy capacity set at a minimum of 720MWh from the 11th year, indexed annually to a maximum of 5% (annual base contribution of $117,360.00);
- Where, following an annual assessment by the battery manufacturer in accordance with their standard test procedures and evidenced in the manufacturer’s annual performance testing report, the guaranteed useable energy capacity is greater than the base of 720MWh, the proponent is required to a pay a top up financial contribution;
- An administration payment of 5% of the Annual Financial contribution (base contribution of $6,984.00 decreasing to $5,868.00);
- In lieu of the landowner being a party to the agreement, it is proposed that Council accept a bank guarantee equivalent to 2 years of the base annual financial contribution - $279,300.00, with an expiry date not less than 20 years;
- The proponent, K3W Project Co. Pty Ltd, agrees that it is bound by the rights and obligations under the agreement unless they are transferred to another party; and,
- The financial contribution is to include, for the first 10 years an energy rebate amount of $25,000, which is index linked. The Council are obligated to apply this amount as an energy rebate to eligible properties across the shire.

On 14 August 2026, K3W Project Co Pty Ltd as trustee for the K3W Project Trust lodged an application for the Material change of use of premises located at Gilberton Road, Einasleigh, for the purpose of a battery storage facility (including ancillary infrastructure).

The application proposed the development of a standalone renewable energy storage project with a capacity of up to 250MW / 1250 MWh on land located at Gilberton Road, Einasleigh and described as Lot 12 on SP 345756. The development would be located in the northern part of the lot, which contains the Kidston Solar Farm to the south. The site of the application is the subject of a separate approval for Reconfiguring a Lot to excise the site from Lot 12 and to create a separate land parcel.

The development would comprise up to 200 containerised battery units with each unit having dimensions consistent with the size and dimensions of a 20 foot shipping container. The development would connect to an on-site project substation and subsequently to the existing Powerlink Aurumfield Substation.

The application is supported by a number of reports, including a Social Impact Assessment and Decommissioning Strategy and Battery Recycling Strategy. Decommissioning would include:

- Access tracks may be left in-situ subject to the landholder requirements;
- Battery components will be dismantled and removed from site for recycling;
- All above ground cabling will be removed for recycling;
- Underground cabling may be terminated below ground and remain in-situ;
- All buildings will be removed down to the foundation or concrete pads as required by the landholder; and,
- All infrastructure and equipment will be removed for recycling, with the exception of any infrastructure or buildings that have become the property of or are managed and operated by the Transmission Network Service Provider, such as the substation.

The executed Community Benefits Agreement also forms part of the application material. As part of the SIA the proponent has provided a Social Impact Management Plan that proposes a number of measures, that include:

- Continued community engagement;
- The establishment of a feedback/complaints process;
- Engagement with Traditional Owners;
- Targeting local employment and local recruitment;
- Identifying traineeship opportunities for the local workforce; and,
- Prioritising local procurement of services.

The application has been referred to Council as an advice agency to the State Assessment and Referral Agency (SARA) as the Assessment Manager. As an advice agency the Council can only provide advice and cannot direct a refusal or approval and cannot require conditions to be attached to any approval granted; however, SARA are required to consider any representations made in respect of the application by Council.

In assessing the application and providing a referral response, the Council must assess the application against the Council's Planning Scheme and adopted policies.

Under the Etheridge Shire Council Planning Scheme, the site is identified in the Rural Zone and is affected by the Bushfire Hazard overlay and the Queensland floodplain assessment overlay. Within the Rural zone, the development of a renewable energy facility is identified as Impact Assessable. This means that the application is required to be considered against the whole of the planning scheme, including the Strategic Framework.

Strategic Framework

The Strategic Framework supports the development of renewable energy opportunities within the Shire. At section 3.2 Strategic Intent, the Strategic Framework states:

> *The planning scheme builds upon Etheridge Shire's traditional economic strengths, the primary one being agriculture. It seeks to further enhance economic opportunities in the agricultural sector, as well as supporting industry, tourism, mining and renewable energy opportunities.*

Further at section 3.3.5.4 the Strategic Frameworks supports the development of renewable energy projects in the rural areas and states:

> *Renewable energy projects and further renewable energy opportunities exist with the shire, as well as opportunities for agricultural irrigation such as the Gilbert River Irrigation Scheme. The development of such projects is supported within the rural areas of the shire, provided environmental and financial viability considerations can be met.*

The proposed development is considered consistent with the Strategic Framework.

Rural Zone Code

The intended purpose of the Rural Zone is, amongst other matters, to:

- ensure the productive capacity of agricultural and associated rural industries is maximised and maintained, while protecting biodiversity values and allowing for farm diversification and value adding industries to occur in the rural area.

- allow for the development of renewable energy facilities, whilst protecting agricultural and environmental interests.

The proposed development of a renewable energy facility on land that is not currently used for a rural purpose and which would not compromise the productive agricultural capacity of the land or adversely affect any biodiversity values, is considered to be consistent with the purpose of the rural zone.

The development has been assessed against the relevant Assessment Benchmarks contained within the Rural Zone Code and the proposed development is considered to satisfy all the relevant Acceptable Outcomes.

General Development Code

An assessment of the proposed development against the Assessment Benchmarks contained in the General Development Code is provided in the table below:

General Development Code		
Performance outcomes	**Acceptable outcomes**	**Comment**
For accepted development subject to requirements and assessable development		
Development Located in a Flood Hazard Area as identified in Schedule 2 - Mapping		
PO1 Development located on a site containing a flood hazard area (as identified in Schedule 2 – Mapping) responds to flooding potential and maintains personal safety at all times with regard to siting, design and layout. **Note:** The defined flood event for the Georgetown Township zone is that of 1% Annual Exceedance Probability (AEP) flood event, from which the defined flood level of 291.07m AHD has been calculated.	**AO1** Development on a site identified as containing a flood hazard area is sited and designed so that: (a) it is located: (i) outside of the mapped flood hazard area; or (ii) in the mapped flood hazard area for Georgetown and can achieve a freeboard for all habitable rooms of 600mm above 291.07 AHD; (b) there is at least one (1) evacuation route that achieves safe egress for emergency evacuations during all floods.	**Complies with AO1** The development would be located on land outside of the mapped floodplain assessment overlay.
PO2 Public safety and the environment are not adversely affected by the detrimental impacts of flooding or bushfire on hazardous materials manufactured or stored in bulk.	**AO2** Development does not involve the manufacture or storage of hazardous materials within an area identified as flood hazard on the flood hazard maps (as identified in Schedule 2 – Flood mapping) or as a bushfire prone area as identified on SPP Mapping – Natural Hazards Risk and Resilience – Bushfire prone area.	**Complies with AO2** The development would be located on land outside of the mapped floodplain assessment overlay.
Development Located in a Bushfire Prone Area as identified on SPP mapping – Natural Hazards, Risk and Resilience		

General Development Code		
Performance outcomes	**Acceptable outcomes**	**Comment**
PO3 Development located in a bushfire prone area as identified on SPP Mapping – Natural Hazards Risk and Resilience – Bushfire prone area is designed and located to minimise potential impacts of bushfire to people and property.	**AO3** Development is not located in a bushfire prone area as identified on SPP Mapping – Natural Hazards Risk and Resilience – Bushfire prone area.	**Complies with PO3** The application is supported by a Bushfire Management Plan that identifies that the project is located outside of any mapped hazardous vegetation and mitigation measured would minimise any potential impacts.
Local Heritage as identified in Schedule 3 – Etheridge Heritage Places		
PO4 Development does not have a detrimental impact on the cultural heritage significance of the local heritage place.	**AO4** Development is not located on a local heritage place identified in Schedule 3 – Local Heritage Places; OR Development is located on a local heritage place identified in Schedule 3 – Local Heritage Places and: (a) involves no building or operational work; or (b) is being undertaken by ESC.	**Not applicable**
Site layout		
PO5 The size and bulk of new buildings associated with development: (a) maintains and enhances the intended local character of the location (zone and/or precinct); (b) avoids over-development of the site; (c) results in development at a consistent scale, siting and intensity to nearby development.	**AO5** Total development on the site has a maximum site cover as follows: (a) Township zone (where not in a precinct) - 50% (b) Township zone (Commercial precinct) - 85% (c) Township zone (Residential precinct) - 50% (d) Township zone (Industrial precinct) - 80% (e) Township zone (Rural residential precinct) – 20% (f) Rural zone – no acceptable outcome prescribed.	**Not applicable**
Building design and amenity		
PO6 The height of development: (a) maintains the overall low rise scale and character of development in Etheridge Shire; (b) reflects the intended form, function and character of development in the respective zone or precinct; (c) integrates with existing surrounding development without introducing adverse amenity impacts.	**AO6** The height of development does not exceed: (a) Township zone (where not in a precinct) – 10m; or (b) Township zone (Commercial and Residential precincts) – two (2) storeys or 8.5m; or (c) Township zone (Industrial and Rural Residential precincts) – 15m; or (d) Rural zone – no acceptable outcome provided.	**Not applicable**

General Development Code		
Performance outcomes	**Acceptable outcomes**	**Comment**
PO3 Development located in a bushfire prone area as identified on SPP Mapping – Natural Hazards Risk and Resilience – Bushfire prone area is designed and located to minimise potential impacts of bushfire to people and property.	**AO3** Development is not located in a bushfire prone area as identified on SPP Mapping – Natural Hazards Risk and Resilience – Bushfire prone area.	**Complies with PO3** The application is supported by a Bushfire Management Plan that identifies that the project is located outside of any mapped hazardous vegetation and mitigation measured would minimise any potential impacts.
Local Heritage as identified in Schedule 3 – Etheridge Heritage Places		
PO4 Development does not have a detrimental impact on the cultural heritage significance of the local heritage place.	**AO4** Development is not located on a local heritage place identified in Schedule 3 – Local Heritage Places; OR Development is located on a local heritage place identified in Schedule 3 – Local Heritage Places and: (a) involves no building or operational work; or (b) is being undertaken by ESC.	**Not applicable**
Site layout		
PO5 The size and bulk of new buildings associated with development: (a) maintains and enhances the intended local character of the location (zone and/or precinct); (b) avoids over-development of the site; (c) results in development at a consistent scale, siting and intensity to nearby development.	**AO5** Total development on the site has a maximum site cover as follows: (a) Township zone (where not in a precinct) - 50% (b) Township zone (Commercial precinct) - 85% (c) Township zone (Residential precinct) - 50% (d) Township zone (Industrial precinct) - 80% (e) Township zone (Rural residential precinct) – 20% (f) Rural zone – no acceptable outcome prescribed.	**Not applicable**
Building design and amenity		
PO6 The height of development: (a) maintains the overall low rise scale and character of development in Etheridge Shire; (b) reflects the intended form, function and character of development in the respective zone or precinct; (c) integrates with existing surrounding development without introducing adverse amenity impacts.	**AO6** The height of development does not exceed: (a) Township zone (where not in a precinct) – 10m; or (b) Township zone (Commercial and Residential precincts) – two (2) storeys or 8.5m; or (c) Township zone (Industrial and Rural Residential precincts) – 15m; or (d) Rural zone – no acceptable outcome provided.	**Not applicable**

General Development Code		
Performance outcomes	**Acceptable outcomes**	**Comment**
PO7 New buildings or structures present an articulated and traditional façade to the street featuring design elements that reduce the appearance of scale and bulk.	**AO7** Except where in the Rural zone, or Industrial or Rural Residential precincts of the Township zone, at least three (3) of the six (6) elements below must be incorporated into the front façade of new buildings: (a) verandas or porches; or (b) awnings and shade structures; or (c) variations to the roof and building lines; or (d) recesses and projections of the external facade; or (e) doors and window openings; or (f) a range of building materials, colours and textures matching or complementing those prevailing in neighbouring buildings.	**Not applicable**
PO8 Where provided, outdoor lighting does not adversely affect the amenity of adjoining properties or create a traffic hazard on adjacent roads.	**AO8** Light emanating from any source complies with Australian Standard AS4282 Control of the Obtrusive Effects of Outdoor Lighting.	**Not applicable**
PO9 Waste disposal and servicing areas are screened from public view and do not have adverse amenity impacts on adjoining properties.	**AO9** Non-residential development is provided with a designated waste collection area that is: (a) located on a concrete slab; (b) located to the side or rear of the premises; (c) screened from public view.	**Complies with AO9** On-site waste management would be undertaken by the proponent.
PO10 Landscaping is provided to enhance the visual appeal of development and soften the appearance of the built form. The majority of landscaping is to be undertaken on the principal street frontage of the development.	**AO10.1** Except in the Rural zone, a minimum of 10% of the total development area is landscaped.	**Not applicable**
	AO10.2 Landscaping includes vegetation and is provided: (a) at the front of the development in the general Township zone and the Industrial precinct of the Township zone; or (b) at the front of the development in the Commercial precinct of the Township zone if the development has been set back from the front boundary.	**Not applicable**
Access		
PO11 The development has safe, legal and practical access to a public road.	**AO11** The development is provided with: (a) direct access to a gazetted road reserve; or (b) access to a gazetted road via a legally secured access	**Complies with AO11** Access would be secured by an easement.

General Development Code		
Performance outcomes	**Acceptable outcomes**	**Comment**
	arrangement, (i.e. easement or common property).	
Access, Manoeuvring and Parking		
PO12 The proposed development accommodates sufficient car parking on site to meet the peak parking demand of the use at any point in time.	**AO12** Car parking is provided at rates as per table 6.3.1.2.	**Not applicable**
PO13 The proposed driveway and/or invert crossings is clear of all impediments.	**AO13** All invert crossings and driveways are clear of street furniture, gully pits, man holes, power poles, street trees and bus stops by a minimum distance of 1m.	**Not applicable**

It is considered that the proposed development satisfies the relevant Assessment Benchmarks.

BUDGET & RESOURCE CONSIDERATIONS
Nil

LEGAL CONSIDERATIONS
Planning Act 2016
Planning Regulation 2017

POLICY IMPLICATIONS
Etheridge Shire Council Planning Scheme

CONSULTATION
Chief Executive Officer

RISK ASSESSMENT
Risk Assessment Outcome: Low

ATTACHMENTS
1. 1. 2608-54054__application summary 13 August 2026, 12.23 pm 15 [**10.3.1**]
2. 3. Kidston BESS Planning Report [**10.3.2**]
3. 4. SARA appendices A- D [**10.3.3**]
4. 5. Appendix E_ EAR [**10.3.4**]
5. 6. SARA appendices F- G [**10.3.5**]
6. 7. Appendix H_ SIA [**10.3.6**]
7. 8. Appendix I_ ALA [**10.3.7**]
8. 9. Appendix J_ NHRA BMP [**10.3.8**]
9. 10. Appendix K_ Flood [**10.3.9**]
10. 11. Appendix L_ Flood SMP [**10.3.10**]
11. 12. Appendix M_ Noise and Vibration [**10.3.11**]
12. 13. Appendix N_ TIA OSOM [**10.3.12**]
13. 14. SARA appendices O- S [**10.3.13**]

DELIVERING FOR QUEENSLAND | Queensland Government

Department of
State Development,
Infrastructure and Planning

Application summary report — 2608-54054

Report created: **13 August 2026, 12.23 pm**
User: **NGH Pty Ltd**
Applicant: **K3W Project Co Pty Ltd as trustee for the K3W Project trust**

Development details

Nature of development	Approval type	Category of assessment
Material change of use	Development permit	Impact assessment
Description of proposal: Genex Power Pty Limited (Genex) and K3W Project Co Pty Ltd as trustee for the K3W Project Trust (the Applicant), are seeking a development approval from the State Assessment and Referral Agency (SARA), as the assessment manager under the Planning Act 2016 (Qld) (the Planning Act), for a Material Change of Use (MCU) for a battery storage facility (BSF) and grid-connecting transmission lines (the Project). The Project consists of a standalone grid-forming BSF of up to approximately 250 megawatts (MW) / 1,250 megawatt hours (MWh) and grid-connecting transmission lines, near the town of Kidston, near Einasleigh, Far North Queensland. The Project is part of the Kidston Clean Energy Hub (Clean Energy Hub), which currently comprises the 50 MW Kidston Solar Project, operating since 2017, and the 250 MW / 2,000 MWh Kidston Pumped Storage Hydro Project (K2-Hydro), currently under construction.		

Location details

Lot and plan	Adjacent or adjoining	Address	Local government area
12SP345756	No		Etheridge Shire Council

Coordinates

Interested parties

Name	Application responsibility
NGH Pty Ltd	Applicant
SARA	Assessment manager
Powerlink	Referral agency

Assessment triggers

2608-54054

Trigger	Description	Category	Assessment manager
4.2.21.5.b	Development application for a material change of use of premises for a battery storage facility that is assessable development under schedule 10, part 2, division 1 and other assessable development is prescribed assessable development only	Battery Storage Facilities	SARA

Referral triggers

Trigger	Description	Category	Referral agency
10.9.1.1.1	Development application for development on premises that are the subject of a designation made by the Minister, if- (a) the development is assessable development under a local categorising instrument; and (b) the infrastructure the subject of the designation is to be supplied by a public sector entity; and (c) the premises are not owned by or for the State; and (d) the development is for a purpose other than the designated purpose; and (e) the development will not be carried out by or for the State	Infrastructure - designated premises	SARA
10.9.2.2.1	Development application for a material change of use that is assessable development under a local categorising instrument and does not relate to reconfiguring a lot, if- (a) all or part of the premises are within 100m of a substation site; or (b) both of the following apply- (i) all or part of the premises are subject to an easement for the benefit of a distribution entity, or transmission entity, under the Electricity Act; (ii) the easement is for a transmission grid or supply network	Electricity infrastructure	Powerlink

Documents

Supporting documents

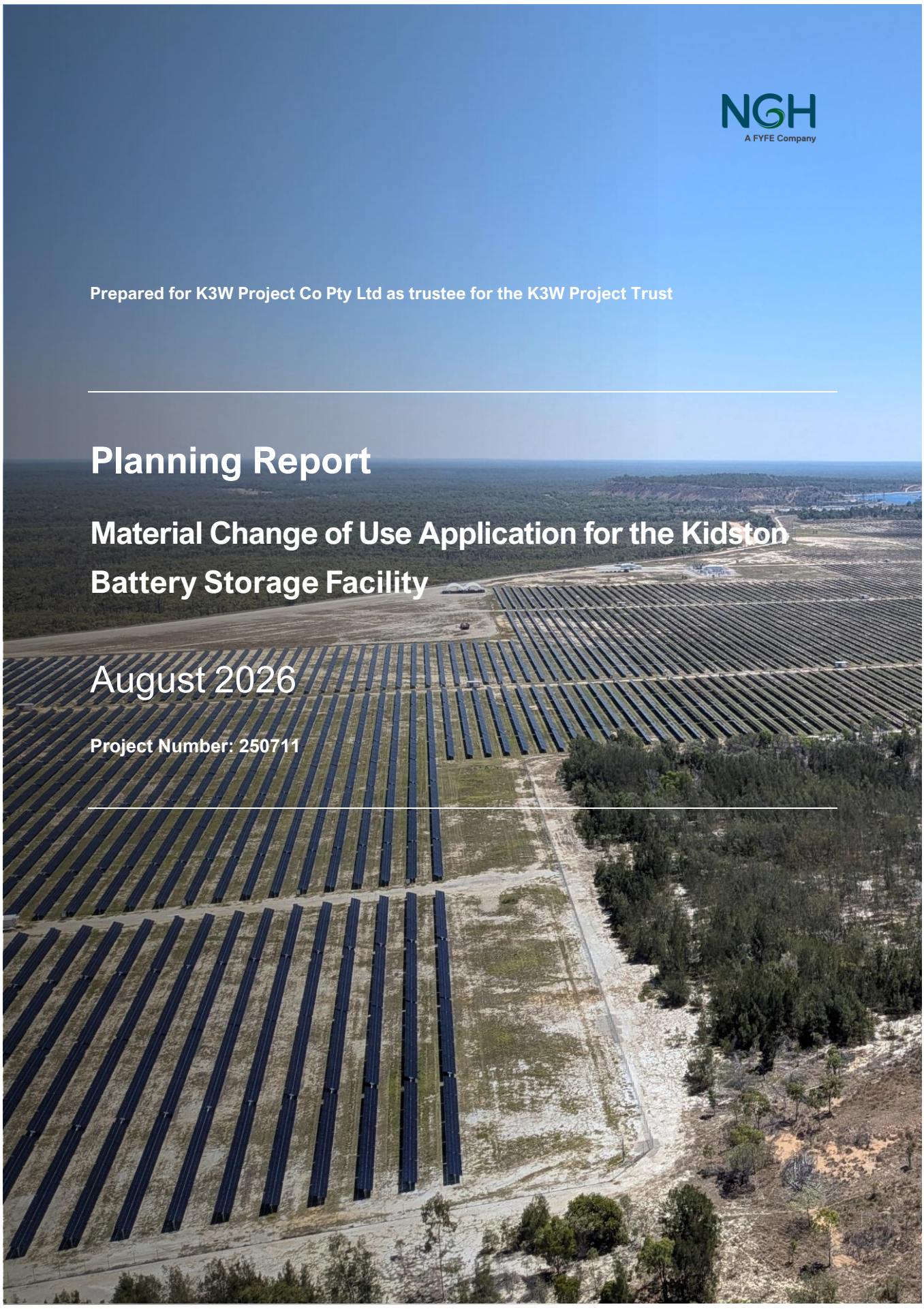
File name	Uploaded by	Version	Date uploaded
Lot plan report	MyDAS2 Admin	1	13 August 2026, 11.17 am
Appendices A-D DA form, Owners consent, Title searches,	NGH Pty Ltd	1	13 August 2026, 11.56 am

2608-54054

File name	Uploaded by	Version	Date uploaded
Plans			
Kidston BESS Planning Report	NGH Pty Ltd	1	13 August 2026, 11.56 am
Appendix E EAR	NGH Pty Ltd	1	13 August 2026, 12.05 pm
Appendices F Risk management Assessment Report and G FSS	NGH Pty Ltd	1	13 August 2026, 12.14 pm
Appendix I ALA	NGH Pty Ltd	1	13 August 2026, 12.17 pm
Appendix J NHRA and BMP	NGH Pty Ltd	1	13 August 2026, 12.19 pm
Appendix K Flood study	NGH Pty Ltd	1	13 August 2026, 12.19 pm
Appendix L Stormwater Management Plan	NGH Pty Ltd	1	13 August 2026, 12.19 pm
Appendix M Noise and Vibration Impact Assessment	NGH Pty Ltd	1	13 August 2026, 12.19 pm
Appendices O-S Decommissioning Security Report, Battery Recycling Strategy, CBA, pre lodgement minutes, Assessment Manager Determination	NGH Pty Ltd	1	13 August 2026, 12.19 pm
Appendix N TIA and OSOM study	NGH Pty Ltd	1	13 August 2026, 12.20 pm

Pay items

No payitems were added.



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A FYFE Company

Prepared for K3W Project Co Pty Ltd as trustee for the K3W Project Trust

Planning Report

Material Change of Use Application for the Kidston Battery Storage Facility

August 2026

Project Number: 250711

Document verification

Project Title:	Material Change of Use Application for the Kidston Battery Storage Facility
Project Number:	250711
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We acknowledge the Traditional Owners of this land and pay our respect to Elders past, present and emerging. We recognise that the First Nations peoples of Australia have traditionally managed the resources of this land in a sustainable way, and that they are the original custodians of the Australian environment.

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Acronyms and abbreviations

ACHA Act	*Aboriginal Cultural Heritage Act 2003*
ACN	Australian Company Number
AFAC	Australian Fire and Emergency Service Authorities Council
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
ALA	Agricultural Land Assessment
APZ	Asset Protection Zone
BSF	Battery Storage Facility
BESS	Battery Energy Storage System
BRT	Basic Right Turn
CEMP	Construction environmental management plan
Cth	Commonwealth
DA	Development Application
DAF	Department of Agriculture and Fisheries (Qld)
DCCEEW	Department of Climate Change, Energy, the Environment and Water (Cth)
DETSI	Department of Environment, Tourism, Science and Innovation (Qld)
DG	Dangerous Goods
DR	Department of Resources (Qld)
DTMR	Department of Transport and Main Roads (Qld)
E	Endangered
EAR	Ecological Assessment Report
EMS	Energy Management System

ESC Plan	Erosion and Sediment Control Plan
EP Act	*Environmental Protection Act 1994* (Qld)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
FNQROC	Far North Queensland Regional Organisation of Councils
HF	Hydrogen Fluoride
ha	hectares
GL	gigalitres
KRA	Key Resource Area
km	kilometres
kV	kilovolts
LAeq	Equivalent continuous sound level
LFP	Lithium Iron Phosphate
LEP	Local Environment Plan
LGA	Local government area
m	metres
MW	Megawatt
MCU	Material Change of Use
MSES	Matters of State Environmental Significance
MV	Medium Voltage
MWh	Megawatt hour
MNES	Matters of national environmental significance
NC Act	*Nature Conservation Act 1992*
NFPA	National Fire Protection Association

NHVR	National Heavy Vehicle Regulator
NHRA	Natural Hazards Risk Assessment
OEM	Original Equipment Manufacturer
OEMP	Operational Environmental Management Plan
OHTL	Overhead Transmission Line
OSOM	Over-Size Over-Mass
PBRS	Preliminary Battery Recycling Strategy
PO	Performance Outcome
PPV	Peak Particle Velocity
Planning Act	*Planning Act 2016*
PMST	Protected matters search tool
RaL	Reconfiguring a Lot
RE	Regional Ecosystem
RPD	Relevant Purpose Determination
RMAR	Risk Management Assessment Report
RMU	Ring Main Unit
SCADA	Supervisory Control and Data Acquisition
SDAP	State Development and Assessment Provisions
SIA	Social Impact Assessment
SMP	Stormwater Management Plan
SPP	State Planning Policy
TIA	Traffic Impact Assessment
TEC	Threatened ecological community

UL 9540A	Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems
UGTL	Underground Transmission Line
VM Act	*Vegetation Management Act 1999*
V	Vulnerable

1. Introduction

This Planning Report has been prepared on behalf of Genex Power Pty Limited (Genex) and K3W Project Co Pty Ltd as trustee for the K3W Project Trust (the Applicant), which is seeking a development approval from the State Assessment and Referral Agency (SARA), as the assessment manager under the *Planning Act 2016* (Qld) (the Planning Act), for a Material Change of Use (MCU) for a battery storage facility (BSF) and grid-connecting transmission lines (the Project). A separate Reconfiguring a Lot (RaL) approval is also required to facilitate BSF construction, for which the assessment manager is Etheridge Shire Council.

The Project consists of a standalone grid-forming BSF of up to approximately 250 megawatts (MW) / 1,250 megawatt hours (MWh) and grid-connecting transmission lines, near the town of Kidston, near Einasleigh, Far North Queensland. The Project is part of the Kidston Clean Energy Hub (Clean Energy Hub), which currently comprises the 50 MW Kidston Solar Project, operating since 2017, and the 250 MW / 2,000 MWh Kidston Pumped Storage Hydro Project (K2-Hydro), currently under construction. The Project is proposed to be constructed in the northern section of the Kidston Solar Farm lot, adjacent to the Aurumfield Substation (refer Figure 1) and will connect from a private project substation into the Aurumfield Substation at 275 kilovolts (kV). The Project will provide utility-scale energy storage to support the National Electricity Market (NEM) and enhance regional grid stability. Once developed, the Clean Energy Hub will be labelled as a world-first integration of pumped storage hydro, solar and battery storage.

The development is located on lot 12 SP345756, within the northern section of the Kidston Solar Farm lot. The Project site consists of previously disturbed and cleared land associated with the historical Kidston gold mine and is co-located with existing and proposed renewable energy developments as mentioned above. Specifically, the BSF will be located on the decommissioned South Pond area of the Processing Facility that was part of the Kidston Gold Mine. The Project represents Stage 3 of the Clean Energy Hub and aligns with the Queensland Government's Queensland Energy Roadmap, supporting the state's transition to a low-emissions energy system consistent with the Government's commitment to net zero by 2050.

This planning report sets out an assessment of the proposal against the relevant assessment benchmarks, including State Code 27 – Battery storage facility development, and provides additional supporting information to demonstrate how the Project complies with the relevant planning instruments.

1.1. Application overview

Table 1-1 Application overview

Application overview	
Applicant	K3W Project Co Pty Ltd (ACN 614 272 954) as trustee for the K3W Project Trust
Proposed development	Development Permit for MCU for a battery storage facility (as defined in Schedule 24 of the Planning Regulation 2017) and ancillary infrastructure to facilitate the operation of the BSF, including grid-connecting transmission lines.

Assessment type	Material Change of Use
Assessment manager	The determination pathway under section 21(5) applies uniformly to material change of use applications for battery storage facilities. The applicant has written to the Department of State Development, Infrastructure and Planning requesting the Minister's determination nominating SARA as assessment manager. The Minister's decision letter confirming this determination is provided at Appendix S. As such, SARA is the assessment manager.
Level of assessment	Impact Assessment
Lot and plan	Lot 12 on SP345756
Easement	The registered survey plan and title search for Lot 12 (Refer Appendix C and Appendix D) provides a number of easements affecting the parcel. Lot 12 benefits from the following easements: • Easement B on SP289310 • Easements F and G on SP304951. Access to the proposed BSF will be provided via Easement G on SP304951 and Easement B on SP289310. Lot 12 is also subject to the following easements which burden the land: • Easement AN on SP345756 (Easement in Gross to Queensland Electricity Transmission Corporation Limited) • Easement AW on SP345756 (Easement in Gross to Queensland Electricity Transmission Corporation Limited). These easements relate to electricity transmission infrastructure and will remain in place following the proposed development. New grid connection easements, Easement BE and BF are proposed within Lot 11SP345756 to facilitate connection from the BSF and project substation to the Powerlink Substation.
Address	Gilberton Road, Einasleigh
Registered owner	Kidston Solar Co Pty Ltd (ACN 614 272 954) as trustee for the Kidston Solar Property Trust
Lot size	572.3 ha parent lot A subdivision application has been lodged with Etheridge Shire Council to reconfigure the lot to accommodate the BSF, with a new lot size of 6.3 ha.

Development footprint	Approximately 3 ha
Local government area	Etheridge Shire Council
Tenure	Freehold
Existing use	Renewable energy facility

1.2. Proponent

K3W Project Co Pty Ltd as trustee for the K3W Project Trust, a wholly owned entity of Genex Power Limited, is the proponent for the proposed BSF development. The proponent details are provided in Table 1-2.

Table 1-2 Proponent details

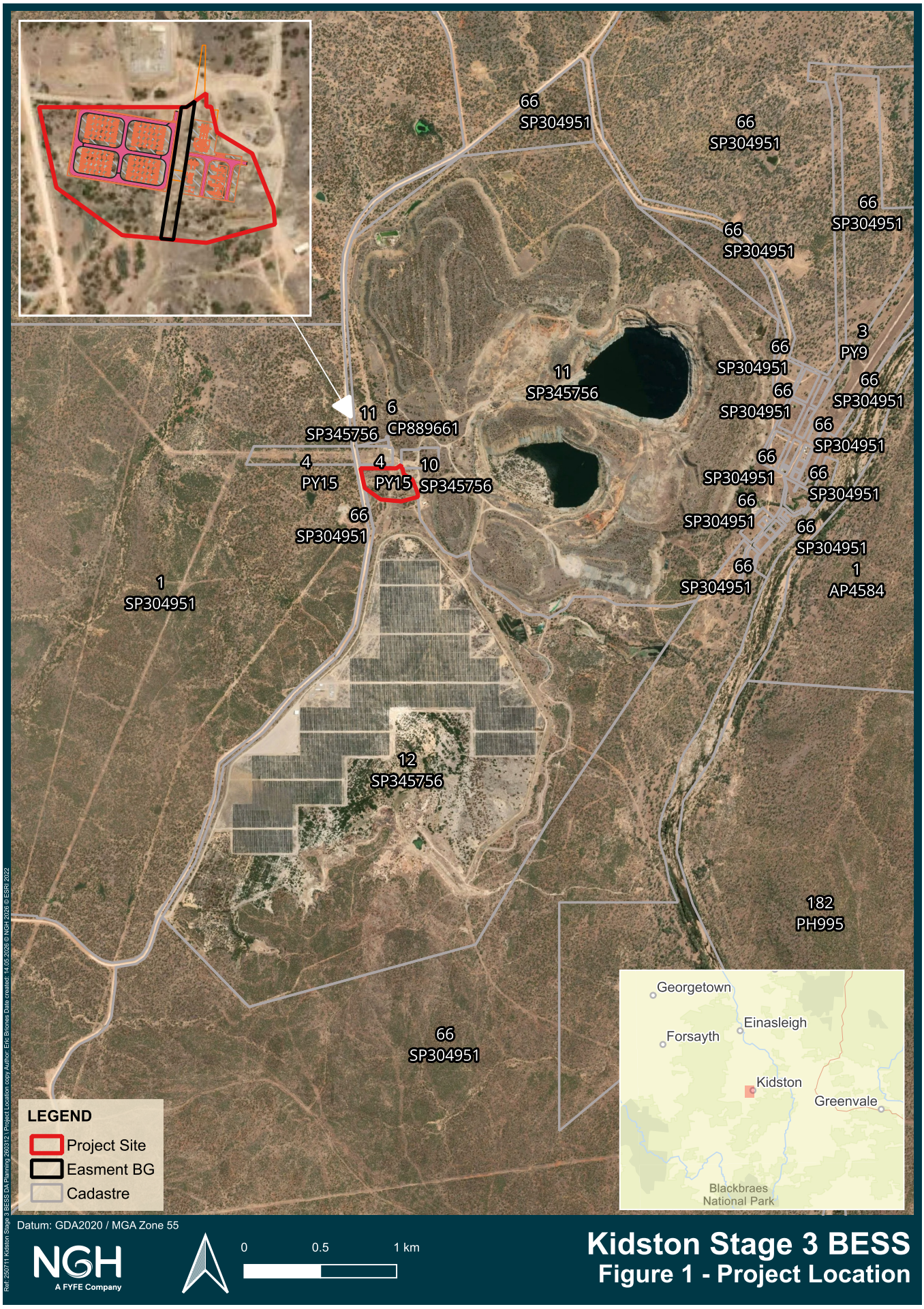
Aspect	Details
Name	K3W Project Co Pty Ltd as trustee for the K3W Project Trust
Contact	James Birkmanis
Address	Suite 12.03 L12 35 Clarence Street, Sydney 2000

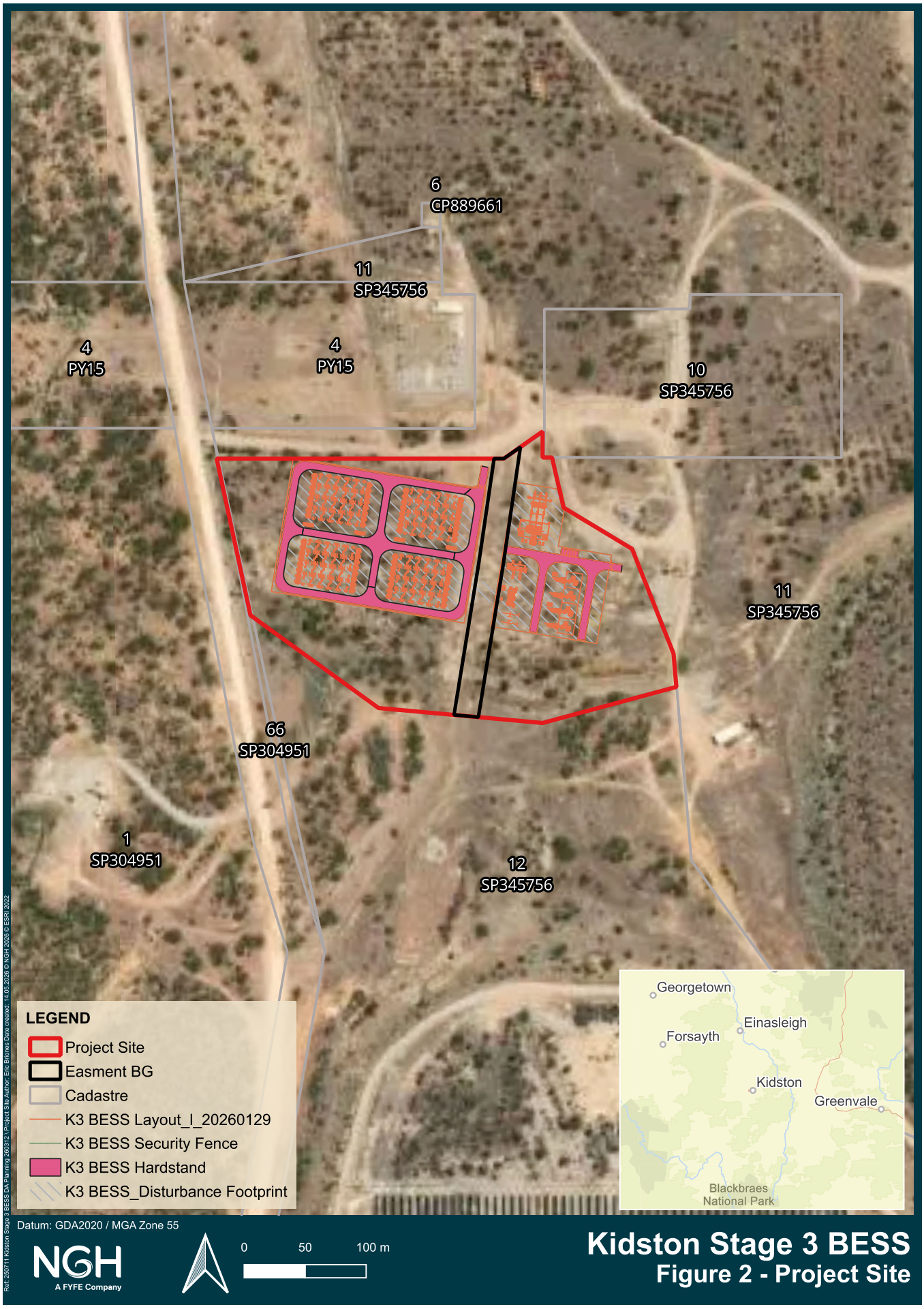
1.3. Project locality

The Project site is located within the Etheridge Shire local government area (LGA), approximately 280 kilometres west of Townsville and 40 kilometres north-west of Lyndhurst, in north-western Queensland. The site occupies the northern section of Lot 12 on SP345756, within the broader Kidston Clean Energy Hub on the historic Kidston Gold Mine site. The area has been extensively disturbed by former mining and renewable energy construction activities and contains established infrastructure, including access roads, cleared benches and the existing Aurumfield Substation.

The Project area is situated within the Einasleigh Uplands Bioregion, characterised by open woodland vegetation, gently undulating terrain and low regional population density. The location was selected to optimise use of existing cleared industrial land, minimise environmental and social impacts, and leverage existing transmission and road infrastructure associated with the Hub.

The BSF site is accessed from Gilberton Road via the existing mine access road and will operate adjacent to other renewable energy facilities, including the Kidston Solar Farm and K2-Hydro. Figure 1 shows the Project location in the context of the Kidston Solar Farm and K2-Hydro, as well as the surrounding townships. Figure 2 shows the Project site.


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SP304951
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SP304951
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SP304951
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SP304951
66
SP304951
66
SP304951
1
AP4584
11
SP345756
11
SP345756
6
CP889661
4
PY15
4
PY15
10
SP345756
66
SP304951
1
SP304951
12
SP345756
182
PH995
66
SP304951
LEGEND
Project Site
Easment BG
Cadastre
Georgetown
Einasleigh
Forsayth
Kidston
Greenvale
Blackbraes
National Park
Datum: GDA2020 / MGA Zone 55
NGH
A FYFE Company
0
0.5
1 km
Kidston Stage 3 BESS
Figure 1 - Project Location
Ref: 250711 Kidston Stage 3 BESS DA Planning 260312 | Project Location.copy Author: Eric Briones Date created: 14.05.2026 © NGH 2026 © ESRI 2022


6
CP889661
11
SP345756
4
PY15
4
PY15
10
SP345756
11
SP345756
66
SP304951
1
SP304951
12
SP345756
LEGEND
Project Site
Easment BG
Cadastre
K3 BESS Layout_I_20260129
K3 BESS Security Fence
K3 BESS Hardstand
K3 BESS_Disturbance Footprint
Georgetown
Einasleigh
Forsayth
Kidston
Greenvale
Blackbraes
National Park
Datum: GDA2020 / MGA Zone 55
NGH
A FYFE Company
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50
100 m
Kidston Stage 3 BESS
Figure 2 - Project Site
Ref: 250711 Kidston Stage 3 BESS DA Planning 260312 | Project Site Author: Eric Bronee Date created: 14.05.2026 © NGH 2026 © ESRI 2022

1.4. Project rationale

BSFs are a critical element of Queensland's transition to a reliable and sustainable electricity network. They are a key component of the Queensland Government's Queensland Energy Roadmap, supporting renewable energy integration, system reliability, and the delivery of a clean, secure and affordable energy system, consistent with the State's commitment to net zero emissions by 2050.

The proposed BSF on Lot 12 on SP345756 near Kidston, within the Etheridge Shire Council area, will enable efficient storage and dispatch of renewable electricity generated in the region. The facility will allow stored energy to be released to the grid during periods of high demand, mitigating intermittency in renewable generation and improving grid reliability. In doing so, it will complement existing and proposed generation infrastructure in the Kidston Clean Energy Hub, including associated solar and hydroelectric assets, by providing dispatchable power and frequency, voltage and system-strength support to the Aurumfield Substation and the broader transmission network.

At the local level, the proposal supports the Etheridge Shire Council Planning Scheme objectives to diversify the regional economy and attract investment in renewable energy where land-use compatibility, amenity, and environmental values can be appropriately managed. The BSF has been sited to avoid sensitive receptors, minimise environmental disturbance, and ensure that the ongoing viability of agricultural land is maintained.

Beyond the regional economic benefits, the environmental and social outcomes of energy storage are significant. The Project will assist in reducing reliance on fossil-fuel generation, support Queensland's renewable-energy targets, and contribute to climate-change mitigation through reduced greenhouse-gas emissions. It will also improve energy-system resilience and stability, delivering consistent grid services during peak demand and network fluctuations.

Looking ahead, dispatchable storage infrastructure such as this BSF is essential to meeting Queensland's increasing electricity demand and balancing the variability of solar and wind generation. The Project therefore represents a key enabling component of Queensland's clean-energy transition and will provide long-term benefits for both the State electricity network and the Etheridge region.

2. Project description

2.1. Overview

The Kidston BSF is a standalone renewable energy storage project within the Etheridge Shire Council LGA, Queensland. The Project forms part of the broader Clean Energy Hub and will provide utility-scale energy storage to support the NEM and enhance regional grid stability. The BSF will have a capacity of up to 250 MW / 1250 MWh and will connect to the existing Aurumfield Substation. The development is located on lot 12 on SP345756, within the northern section of the Kidston Solar Farm land. The Project site consists of previously disturbed and cleared land associated with the historical Kidston gold mine, and is co-located with existing and proposed renewable energy developments including the Kidston Solar Farm and K2-Hydro. The Project represents Stage 3 of the Clean Energy Hub and aligns with the Queensland Government's Queensland Energy Roadmap, supporting the state's transition to a low-emissions energy system consistent with the Government's commitment to net zero by 2050.

2.2. Project infrastructure

Table 2-1 below details the infrastructure included in the Project. All infrastructure listed below will be located within the Project Footprint.

Table 2-1 Project Infrastructure

Infrastructure	Description
Battery units	Containerised units will house battery components, with each unit being similar in size and dimensions as a 20-foot shipping container. These units will be manufactured off-site and delivered to the Project footprint for installation. Up to 200 containerised units will be installed. Unit dimensions will range from 2.438 m (H) × 6.058 m (L) × 2.438 m (D) up to 4.97 m (H) × 8.55 m (L) × 2.66 m (D) per unit. Final unit dimensions will be confirmed following technology selection.
Power station (including conversion system or inverter)	Power conversion systems, including inverters and transformers, will convert stored energy from direct current to alternating current for export to the network. The containerised units will house the relevant system components. The final electrical configuration will be subject to detailed design, however conceptually the Project may include up to 80 inverters and 40 step-up transformers, with five battery skids shared between two inverters, all of which are connected into a medium-voltage (MV) skid that has one step-up transformer and one ring main unit (RMU).
Controller	The BSF will have a supervisory control and data acquisition (SCADA) system and a battery management system (BMS). These systems will enable real-time monitoring, fault detection, remote diagnostics, and control of battery operations, ensuring safe and efficient performance.
Heating, cooling and ventilation	Battery Units: Each battery unit will feature an integrated thermal management system, typically utilising liquid cooling and/or heating to maintain optimal operating temperatures. Air cooling may be used for some auxiliary electrical components. Humidity control systems will also be integrated to protect against condensation and moisture ingress. Inverters: Inverters will use a dual air-cooling system — one circuit brings in outside air and vents it out, while the other recirculates air within a sealed section to protect sensitive equipment.

Energy management system (EMS)	A power plant controller integrated with an EMS will coordinate the operation of the BSF to ensure compliance with grid requirements. The EMS will optimise charge and discharge cycles, monitor performance, and enable integration with other energy resources to support network stability.
Cabling	Underground electrical and fibre-optic cabling will connect the battery units to the power stations and to the site office/distribution centre for monitoring and control. It will be designed in accordance with applicable Australian and international standards, as well as manufacturer specifications. The BSF will connect to the Aurumfield Substation via an overhead transmission line (OHTL).
Substation	The BSF will connect to an on-site project substation and subsequently to the existing Powerlink Aurumfield Substation.
Lighting	Security lighting will be included within the development. All lighting will be directed into the Development Footprint and comply with Australian Standard 'AS4282:2019 Control of the obtrusive effects of outdoor lighting', to minimise impacts on sensitive receivers.
Site facilities	Site facilities will be established to accommodate monitoring and control equipment, Operation and Maintenance amenities, carpark, communications equipment, storage facilities and supplies as needed.

2.3. Services

The Project would require the following services:

Construction phase:

- Water – available for staff amenities, construction works, dust suppression (if required) and firefighting purposes. Water will be supplied to the site via the mains connected to Kidston (Copperfield) Dam. Filtration systems will continue to be used to provide potable water to all site based staff. An operations compound for the Aurumfield Substation will be used as the site office for the construction phase of the BSF, which already has connected water, sewer (septic system) and electricity.
- Telecommunications – service would be provided via Starlink or similar for all data/telecommunication requirements during construction.
- Sewer – the existing facilities connected to the septic system would be utilised during construction, with additional provided if necessary.

- Electricity – electricity would be sourced from the general distribution network. Heavy machinery required during construction will be diesel powered. All computer equipment, building air conditioning systems, telecoms, water pumps will be electrical.

Operational phase:

- Water – firefighting water supply will be provided via an existing reticulated overhead standpipe located adjacent to the BESS site, consistent with the Bushfire Management Plan (Appendix J). The existing mains connection will remain the primary water source for all other operational needs.
- Telecommunications – mobile phones would be used and a fibre connection will offer the primary data/phone connection during operation.
- Sewer – an on-site effluent disposal system would be connected to the site office and distribution centre.
- Electricity – electricity will be sourced from the standard LV Ergon distribution network.

2.3.1. Construction and operation

Construction

The Project construction phase is estimated to be approximately 18-24 months in duration and will comprise three key stages:

Site work

- Pre-construction approvals
- Vegetation clearing for access roads, construction compound, transmission line corridor
- Site preparation and services connection
- Installation of security fencing
- Installation of environmental controls
- Establishment of site construction compound, carpark, laydown areas, and site office
- Construction of access track for Project access

Construction

- Cut, fill, and compaction activities to desired design levels for battery and access tracks.
- Construction of footings and concrete pads to support batteries and transformer
- Delivery of electrical conduits, BSF modules and OHTL components, and balance of equipment
- Cable connections
- Delivery and installation of the transformer
- Installation of OHTL from BSF to substation
- Grid connection and connecting at substation

The Kidston BSF would employ approximately 60 staff throughout the construction program, with a peak of approximately 120 people, and would utilise local commercial entities where possible and as required.

Commissioning

- Grid connection and commissioning of plant

- Completion certificate
- Removal of temporary facilities and construction equipment.

Operation and maintenance

The Project is expected to have an operational life of 25 years. Operation and maintenance activities may include the following:

- Monitoring and control of the BSF. This would be undertaken both by on-site personnel and via a remote control system accessed from a central off-site facility, providing real-time and historical performance information.
- Maintenance activities including general repairs and maintenance of the BSF infrastructure, tracks, drainage, and fences.
- Night lighting at the site would be minimised and would be for operational and security purposes only.
- Procedures and management plans for all operational activities will be included in an Operational Environmental Management Plan that would be prepared for the Project.
- Operation and maintenance will be integrated into a whole of Kidston Clean Energy Hub strategy, where resources will be shared between projects to improve efficiency.

Decommissioning

At the end of the operational phase, the BSF will be decommissioned. Decommissioning would be as per the Decommissioning Security Report (Appendix O) and Preliminary Battery Recycling Strategy (Appendix P). Decommissioning will include the following:

- Access tracks may be left in-situ subject to the landholder requirements
- Battery components will be dismantled and removed from site for recycling
- All above ground cabling will be removed for recycling
- Underground cabling may be terminated below ground and remain in-situ
- All buildings will be removed down to the foundation or concrete pads as required by the landholder
- All infrastructure and equipment will be removed for recycling, with the exception of any infrastructure or buildings that have become the property of or are managed and operated by the Transmission Network Service Provider, such as the substation

If continued operation of the Project is preferred, a relevant Development Application would be submitted at that time. It is possible that some of the infrastructure present at the site would be retained and incorporated into the new proposal.

3. Environment

3.1. Sensitive receivers

Sensitive receivers are classified as residents within a 5 km buffer of the Project site boundary. All residents within 5 km of the Project site are employed by or otherwise engaged in the construction and operation of the Kidston Clean Energy Hub, of which the BSF will form part.

3.2. Visual impacts

The Kidston BSF has been sited and designed to minimise visual impacts on sensitive receivers, protect the landscape values and scenic amenity of the surrounding area, and provide screening and buffering to the greatest extent feasible. The Project is located within an established renewable energy precinct on previously disturbed land associated with the historic Kidston Gold Mine site, which significantly reduces the degree of visual change experienced by surrounding sensitive receivers. The gently undulating terrain of the Einasleigh Uplands, combined with the existing landform features of the former mine site — including excavated benches and varied ground levels — further assists in limiting direct sightlines to the development from surrounding sensitive receivers, reducing the visual prominence of the battery energy storage system (BESS) infrastructure within the broader landscape. Given the low regional population density and the existing industrial character of the Kidston Clean Energy Hub, the visual footprint of the development is considered consistent with the landscape context and unlikely to result in adverse impacts on the amenity of nearby residents or land users. With respect to lighting, security lighting will be incorporated within the development to provide safe and effective illumination for site operations and maintenance activities. All lighting will be directed inward towards the Development Footprint and will comply with Australian Standard AS 4282:2019 *Control of the Obtrusive Effects of Outdoor Lighting*, ensuring that light spill and glare are minimised and that visual impacts on sensitive receivers are appropriately managed.

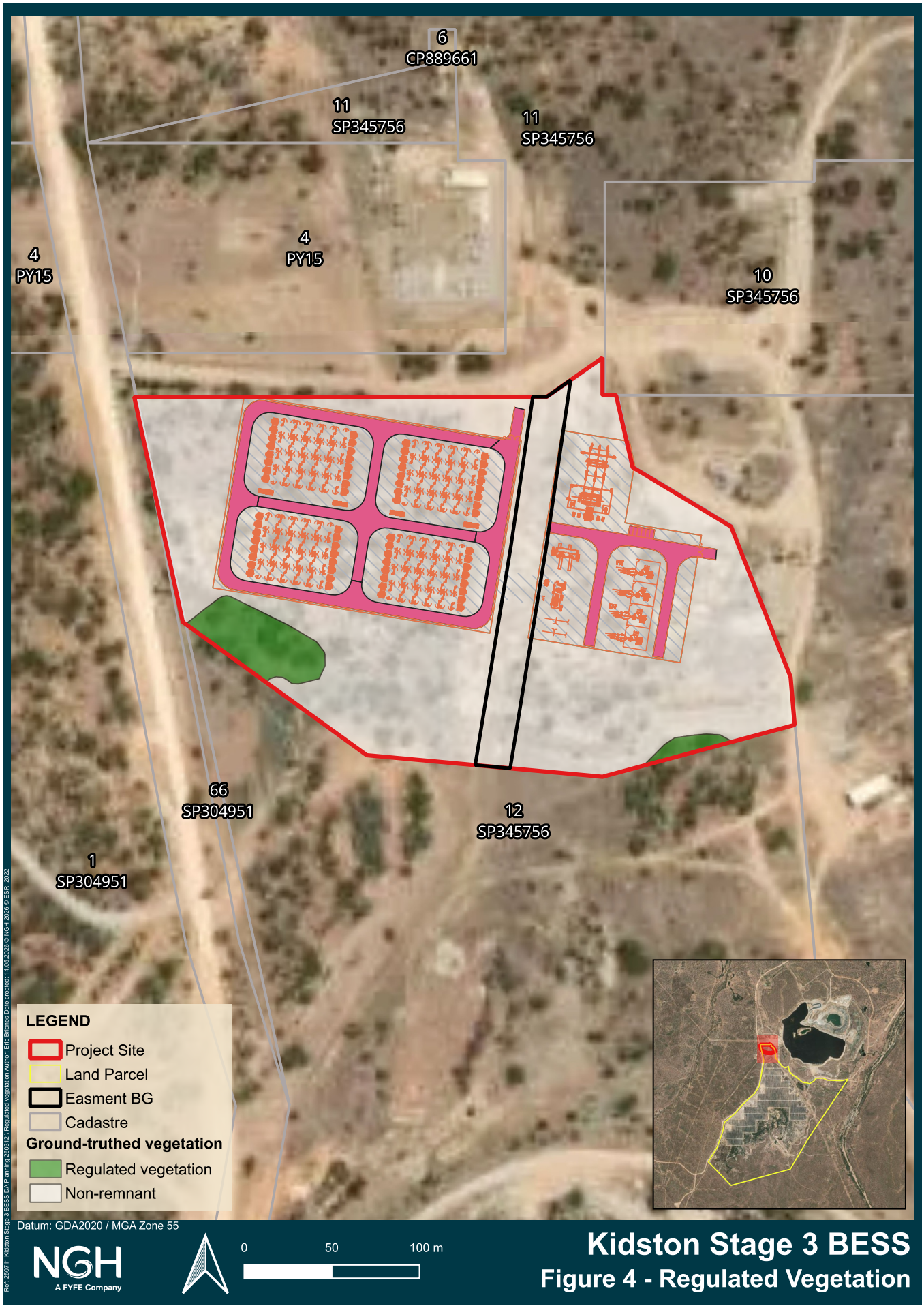
No Visual Impact Assessment has been undertaken for the Project. This approach is consistent with advice received from SARA and reflects the visual impact considerations under State Code 27. The site is not covered by any scenic amenity or landscape overlay under local or State government mapping; it is not in close proximity to sensitive receivers; the surrounding topography screens the battery storage facility from view from sensitive receivers; and the development is located within an established renewable energy precinct on previously disturbed land. On this basis, the Project is not expected to result in unacceptable visual impacts, and the relevant matters are addressed against the performance outcome for visual impact (PO22) of State Code 27.


House 3 Looking west
House 2 Looking west
House 1 Looking west
LEGEND
Project Site
Easment BG
Cadastre
Receivers
Contours (5m)
Datum: GDA2020 / MGA Zone 55
0
0.5
1 km
NGH
A FYFE Company
Forsayth
Einasleigh
Kidston
Kidston Stage 3 BESS
Figure 3 - Sensitive Receivers

3.3. Ecological values

The Project Area is located within previously disturbed land associated with historical mining activities and adjoining renewable energy infrastructure. Desktop and field-based ecological assessments undertaken between 2021 and January 2026 confirm the site is predominantly mapped and ground-truthed as non-remnant vegetation in poor condition, with evidence of past clearing, grazing, weed infestation and edge effects (refer Ecological Assessment memorandum at Appendix E). Vegetation within the Project Area comprises a degraded environment that is not representative of local regional ecosystems and is not progressing toward remnant status. Small, isolated patches of Regional Ecosystem (RE) 9.11.15a (least concern) occur in the southern portion of the site and provide limited habitat value in the context of the surrounding landscape, which contains extensive areas of higher-quality remnant vegetation. Minor drainage features are present within the southern part of the Project Area; however, no mapped watercourses, wetlands or areas of high ecological value occur within the site.

No threatened or near-threatened flora or fauna species were recorded within the Project Area during field surveys. Desktop assessments identified a number of threatened and migratory species with potential to occur in the broader area, including koala, white-throated needletail and fork-tailed swift; however, the Project Area provides only limited and non-critical habitat for these species due to its degraded condition, small extent and surrounding disturbance. The site may provide limited koala foraging habitat associated with scattered eucalypts and opportunistic aerial foraging habitat for migratory bird species, but it does not constitute important habitat. Matters of State Environmental Significance (MSES) and Matters of National Environmental Significance (MNES) are largely absent from the Project Area, and potential ecological impacts associated with the Project are expected to be minimal and capable of being appropriately managed through avoidance, design measures and standard mitigation practices. No ecological values will be impacted or disturbed as part of the reconfiguration.


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Ground-truthed vegetation
Regulated vegetation
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Datum: GDA2020 / MGA Zone 55
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A FYFE Company
Kidston Stage 3 BESS
Figure 4 - Regulated Vegetation
Ref: 250711 Kidston Stage 3 BESS DA Planning 260312 | Regulated vegetation Author: Eric Briones Date created: 14.05.2026 © NGH 2026 © ESRI 2022

3.4. Soil and water

The Kidston BSF footprint sits within the Einasleigh Uplands Bioregion on land classified as Agricultural Land Classification (ALC) Class C, suitable only for improved or native pastures, as outlined in the Agricultural Land Assessment in Appendix I. The nearest ALC Class A or B land is approximately 17 km to the east. The footprint occupies the decommissioned South Pond area of the former Kidston Gold Mine Processing Facility and has been extensively disturbed by prior mining and renewable energy activities, with no agricultural use evident in the last 40 years. As there is no high-quality agricultural land within the footprint, State Code 27 imposes no requirement for soil fertility management or decommissioning to pre-construction agricultural values.

3.4.1. Soil disturbance and contamination

The footprint is previously disturbed brownfield land. A site-specific Erosion and Sediment Control Plan will be prepared prior to operational works and, as detailed in the Stormwater Management Plan (Appendix L), will minimise disturbance of high risk soils and manage soil based contaminants through drainage, erosion, sediment and dust controls, including diversion of clean runoff, progressive rehabilitation to 70% ground cover and downslope sediment controls.

3.4.2. Water quality and stormwater management

The layout avoids mapped waterways and wetlands. The Stormwater Management Plan (Appendix L), prepared in accordance with State Code 27, QUDM, the FNQROC Development Manual and WSUD principles, confirms the treatment train meets all FNQROC pollutant reduction targets (total suspended solids 89.86%, total phosphorus 64.21%, total nitrogen 40.39%, gross pollutants 100%). Treatment concept design comprises a sediment basin, a 10 m² rain garden and a Class 1 oil separator. Bunded transformers, oil sumps and the oil separator guard against contaminant release in the event of an incident, with final measures confirmed at detailed design.

3.4.3. Flooding and overland flow

The Hydrology Report (Appendix K) confirms the site is outside the Floodplain Assessment Overlay and not subject to riverine flooding, sitting near the top of a small (approximately 33 ha) local catchment dominated by overland flow. Modelling adopted the 0.5% AEP event (more conservative than the 1% AEP Defined Flood Event and consistent with QUDM Table 7.3.2 for critical infrastructure), giving a peak water level of 538.5 m AHD and a Flood Planning Level of 539.1 m AHD with 600 mm freeboard. Detention storage of approximately 1,200 m³ limits post-development discharge to pre-development rates, and the catchment continues to drain westward, preserving existing flow paths. Final levels and basin configuration are to be confirmed at detailed design.

3.5. Traffic and access

Access to the project site will be provided via an existing internal access track extending from Gilberton Road. The existing access route currently services the K2-Hydro facilities within the Kidston Clean Energy Hub, as well as both the Ergon Kidston Substation and the Powerlink Aurumfield Substation.

The project will utilise the existing established haulage route from Townsville through the State and local road network, comprising the Bruce Highway, Flinders Highway and Hervey Range Road, before travelling north via the Gregory Developmental Road and Kennedy Developmental Road, and then onto Gilberton Road. Traffic volumes on these routes outside urban areas are very low, and the road network is generally of a suitable standard to accommodate construction and operational traffic associated with the Project, subject to minor, localised upgrades and traffic management measures where required.

The Traffic Impact Assessment (refer Appendix N) concludes that safe and efficient access to the site is achieved using the existing road network with standard management measures.

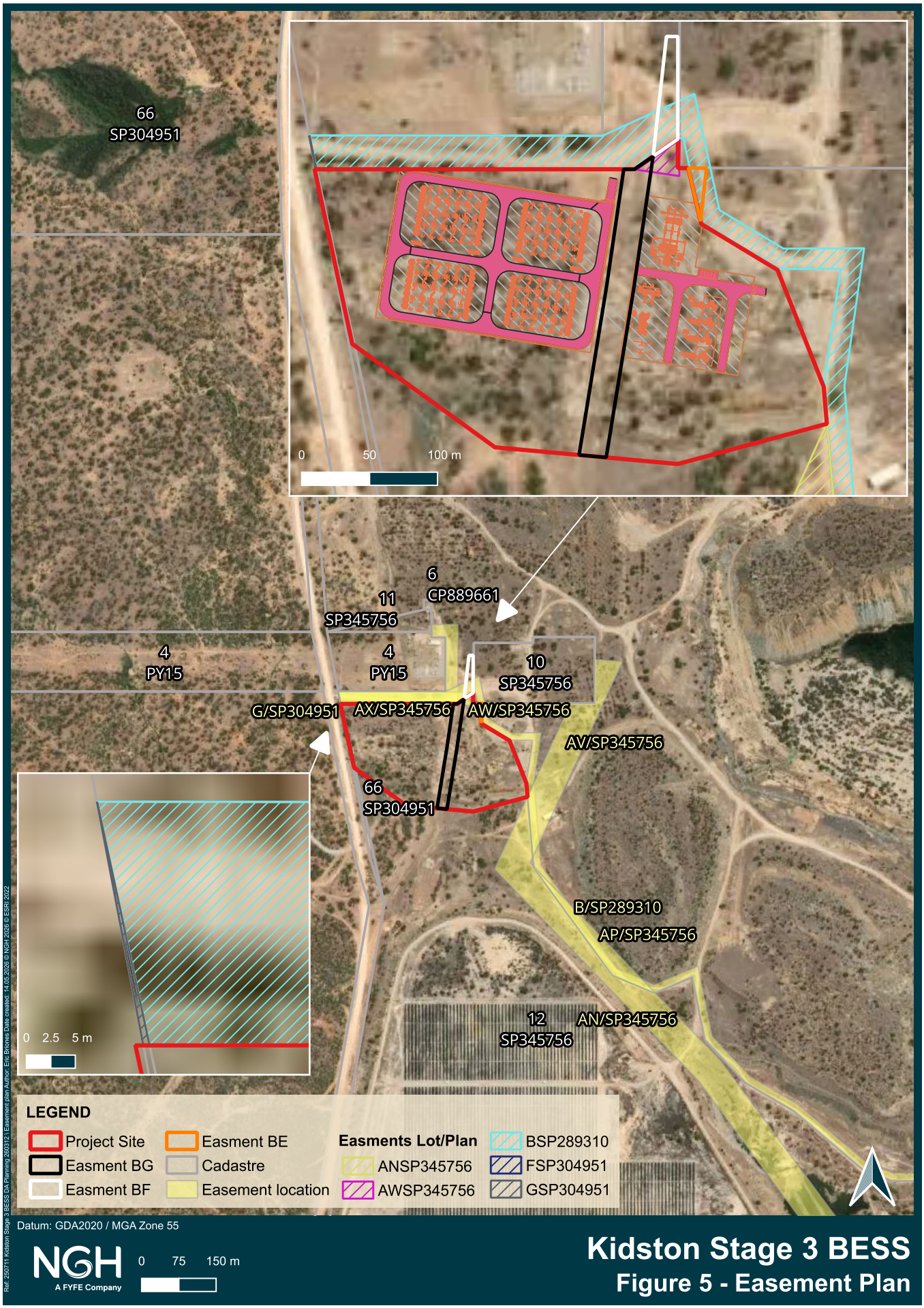
3.5.1. Legal access

A review of the registered survey plan and title search for Lot 12 on SP345756 identifies a number of easements affecting the parent parcel.

Lot 12 currently benefits from Easement B on SP289310 and Easements F and G on SP304951. Lot 12 is also burdened by Easement AN and Easement AW on SP345756, being easements in gross in favour of Queensland Electricity Transmission Corporation Limited (Powerlink).

Safe, legal and practical access to the site is relevant to the assessment of the proposed material change of use. Physical and practical access is addressed under State Code 27, in particular Performance Outcome PO28, which requires safe, efficient and sustainable vehicular access for all vehicle types anticipated through construction, operation, maintenance and decommissioning. Legal access to the proposed BSF lot will be secured via Easement G on SP304951 and Easement B on SP289310, which connect the site to Gilberton Road and take their effect under the *Land Title Act 1994.* While SARA assesses the application against State Code 27 as the prescribed benchmark, it will also have regard to relevant matters under the Planning Regulation, including the strategic outcomes and applicable zone purpose statements of the Etheridge Shire Planning Scheme. The Etheridge Shire Planning Scheme General development code outcomes relating to access (PO11 and AO11) are consistent with the proposed arrangements.

As Lot 12 currently benefits from Easement B and Easement G, the easement instruments will be amended as part of the subdivision registration process so that the proposed BSF lot is included as an additional benefiting lot, while maintaining the existing benefiting land. Easement AN and Easement AW will remain unchanged and are not affected by the proposed subdivision.


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Project Site
Easment BG
Easment BF
Easment BE
Cadastre
Easement location
Easments Lot/Plan
ANSP345756
AWSP345756
BSP289310
FSP304951
GSP304951
Datum: GDA2020 / MGA Zone 55
NGH
A FYFE Company
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Kidston Stage 3 BESS
Figure 5 - Easement Plan

4. Consultation

4.1.1. SARA

A pre-lodgement meeting with SARA has been undertaken on Wednesday the 28th of January 2026 via Microsoft Teams (SARA reference 2512-49857SPL) attended representatives from NGH, the Applicant and SARA. The meeting was sought in accordance with the *Planning guideline – State code 27: Battery storage facility development*, which recommends applicants obtain pre-lodgement advice prior to lodging a development application for a BSF. Written advice was issued by SARA on 29 January 2026 (Refer Appendix R). SARA confirmed it is the assessment manager for the material change of use, that the application is impact assessable against State code 27 of the SDAP, and that SARA must have regard to prescribed matters including relevant elements of the Etheridge Shire Planning Scheme, which can be addressed briefly within this planning report.

SARA provided targeted advice on the scope of supporting technical material, which has informed the structure of this application. In summary, SARA confirmed that a Fire Safety Study is required at lodgement to demonstrate compliance with PO2–PO7; that ecological values may be addressed through a concise environmental section supported by suitably qualified evidence (rather than a full EAR) where no mapped values are present and impacts are minor; that agricultural land matters (PO9–PO12) and infrastructure/pipeline matters (PO29) may likewise be addressed within the planning report where impacts are not triggered; that visual impact may be addressed qualitatively against PO22 given the absence of scenic amenity overlays and nearby sensitive receptors; and that hydrology may be assessed in a separate report from broader natural hazards provided the two are clearly cross-referenced.

SARA recommended that transmission line setbacks be confirmed with Powerlink as the relevant network service provider and referenced in the application material. On decommissioning security (PO35), SARA confirmed there is no exemption where the landowner is also the project operator and advised that further guidance on the Decommissioning Security Report and Preliminary Battery Recycling Strategy is being prepared, with proposals able to be submitted to SARA's Renewables Planning team for review in the interim. SARA also confirmed that the community benefit obligations apply, requiring a social impact assessment and community benefit agreement prior to lodgement given the Project exceeds the 50 MW threshold.

Ongoing engagement with SARA has occurred via email throughout the application period, from January to June 2026, regarding various technical matters including the Preliminary Battery Recycling Strategy and the Decommissioning Security Report. SARA reviewed the proposed strategy and the key themes intended to be included in both reports and provided feedback to the Applicant prior to lodgement.

4.1.2. Etheridge Shire Council

The Applicant has a longstanding relationship with Etheridge Shire Council (ESC), established through the K2H and KS1 projects. Council has been kept informed of this project since its inception through informal communication pathways with Councillors, site visits to Kidston, and Council's attendance at community events held throughout the region. Formal engagement has also been undertaken, including a planning pre-lodgement meeting with ESC on 17 November 2025. ESC also contributed to the development of the Social Impact Assessment (SIA) and the subsequent agreement of the Community Benefit Agreement (CBA).

4.1.3. Powerlink

The Applicant has a longstanding relationship with Powerlink, established through close collaboration on the design and construction of the new transmission line connecting Kidston to the NEM. The formal grid connection enquiry and grid connection application process has been progressed with Powerlink for this Project, with ongoing engagement continuing under the grid connection process defined in the National Electricity Rules.

4.1.4. Community

Two streams of engagement have been undertaken for the Project.

1. Project-wide engagement.
2. SIA-targeted engagement

Project wide engagement

Genex has maintained an ongoing presence in the Etheridge Shire since acquiring the Kidston Gold Mine in 2014, with formal and informal engagement with neighbouring landowners, Traditional Owners, and Etheridge Shire Council occurring throughout this period. This long-standing relationship has provided a foundation for consultation on Stage 3 of the Kidston Clean Energy Hub.

Genex's history of engagement at the Clean Energy Hub site has been guided by the principles of maintaining open, respectful communication with key stakeholders and responsiveness to enquiries. Including the following prior engagement activities:

- Community Information Sessions to provide project updates and an opportunity for the community to speak directly with Genex and its subject matter experts on issues and concerns.
- Attendance at local meetings where strong representation from local stakeholders is present.
- The provision of timely and accessible information to support meaningful engagement such as via a quarterly newsletter that provides subscribers with information detailing major organisational changes, project milestones, current and upcoming development and construction activities, upcoming industry conferences, panels, and other forums.
- A Project website including:
  - Project snapshot and updates pages;
  - A complaints and concerns section;
  - A community webpage;
  - A Contact Us Webpage with quick links to social media channels and contact details; and
  - Links to news and media pages.

Genex provides annual funding and often attends a number of local events such as:

- Einasleigh Races
- Einasleigh Rodeo
- Einasleigh Campdraft
- Einasleigh Horse Sports and Motorbike Sports Event
- Oak Park Races
- Georgetown Bush Races

- Georgetown Rodeo
- Georgetown Campdraft

SIA-targeted engagement

The Applicant appointed NGH to complete the SIA for the Project. The following targeted engagement activities were undertaken in preparing the SIA:

- Mapping and identification of community members and key stakeholders
- Semi-structured interviews with 15 community members and key stakeholders. Over 30 individuals were contacted, with a number indicating they had no input to provide or were unavailable to participate.

The findings of the SIA informed the development of a Community Benefit Agreement (CBA) between ESC and Genex, providing annual funding to initiatives that support the social development of the host communities.

5. Assessment Framework

This development application has been prepared in accordance with the *Planning Act 2016* (Qld) (the Planning Act) and the *Planning Regulation 2017* (Qld) (the Planning Regulation).

Under section 48 of the Planning Act, the assessment manager for a development application is the entity prescribed by the Planning Regulation. For a material change of use for a battery storage facility, section 21(5) of the Planning Regulation requires the Minister to determine the assessment manager for the application. Consistent with the Minister's determinations for comparable battery storage facility applications, the Minister has been requested to determine the Chief Executive administering the Planning Act (SARA) as the assessment manager, with the local government (Etheridge Shire Council) as an advice agency. A copy of the Minister's determination is provided at Appendix S.

Accordingly, this application is State-assessed development, and is required to be assessed against the relevant State planning instruments, including the State Development Assessment Provisions (SDAP).

5.1. Assessment Benchmarks

MCUs for BSFs are impact assessable. Therefore, the Planning Act and Planning Regulation collectively require that SARA, as assessment manager:

- Must assess against prescribed benchmarks, being State code 27 – Battery storage facility development of the SDAP
- Must have regard to prescribed matters, including elements of relevant planning schemes and common material.

5.2. State legislation and statutory instruments

5.2.1. Planning Act 2016 and Planning Regulation 2017

Qld's planning and development assessment framework is enacted under the Planning Act, supported by the Planning Regulation. This framework requires that development achieves a balance between the protection of ecological values, economic development, and social wellbeing.

The Planning Act provides for the making of statutory instruments, most relevantly the local government planning scheme. However, the Regional Plan and other policies and provisions establish the State's interests in development.

The Planning Regulation establishes the assessment pathway applicable to development proposals and identifies the relevant assessment manager's interests. SARA is the assessment manager for the development application (Planning Regulation, section 21), and as such referral agencies are not required. Relevant referral triggers however, are set out under the Planning Regulation are identified in Table 5-1.

Table 5-1 Development application referral requirements

Planning Regulation provision	Aspect of development	Referral agency	Role	Benchmarks
Schedule 10 Part 9, Division 2, Table 1	Material Change of Use near a substation site or subject to an easement	Powerlink	Advice	*Electricity Act 1994; Electrical Safety Act 2002*
Schedule 10, Part 9, Division 1, Table 1	Development on designated premises	SARA	Referral	Planning Act

5.2.2. State Development Assessment Provisions

The SDAP identifies the State interests relevant to development assessment and sets the applicable assessment benchmarks for development where SARA is the assessment manager. SARA has confirmed that the BSF component of the Project requires assessment against State Code 27: Battery storage facility development.

State Code 27 establishes POs addressing matters including site selection and design, safety and risk management, hazard mitigation, environmental impacts, land use compatibility, and decommissioning and rehabilitation. The Project has been designed having regard to the POs of State Code 27, and an assessment is provided below.

State Code 27 response table

Table 5-2 State Code 27: Battery energy storage facility code assessment

Performance outcomes	Response	Reference
Areas of high ecological value and associated wildlife habitats		
PO1 Development is located, sited and designed to ensure that the following are protected from adverse impacts: • protected wildlife and associated habitats; and • areas of high ecological value.	Complies. An Ecological Assessment Memorandum (Appendix E) has been prepared in support of this Performance Outcome. The Development Footprint (2.78 hectares) is located entirely within non-remnant vegetation on previously disturbed land associated with the historic Kidston Gold Mine. No regulated vegetation, Matters of State Environmental Significance (MSES) or Matters of National Environmental Significance (MNES) are present within the Development Footprint. Small patches of Regional Ecosystem (RE) 9.11.15a (Least Concern) within the Study Area have been avoided by design. No threatened or near-threatened flora or fauna species were recorded within the Study Area during field surveys.	Appendix E – Environmental Assessment Report Memorandum

Risk mitigation		
PO2 Development is designed, sited and constructed to ensure that risks from physical hazards, chemical hazards and battery failure hazards are avoided and/or mitigated with respect to: • human health and safety; and • the built and natural environment.	Complies. The development has been designed, sited and constructed to avoid or mitigate risks from physical, chemical and battery failure hazards to human health and safety and to the built and natural environment. A Risk Management Assessment Report (RMAR) (Appendix F) has identified and assessed 29 hazardous events associated with the BSF, including physical, chemical and battery failure hazards. Of the 20 events with potential off-site consequences, no High or Extreme residual risks were identified. Four hazardous events were assessed as Medium off-site residual risk and nine as Low off-site residual risk, each considered tolerable through adoption of industry best-practice design, operational controls and emergency planning; all remaining events resulted in Very Low (broadly acceptable) off-site residual risk. On this basis the hazardous events identified for the Project will be managed to reduce the associated risks to a tolerable level, and this performance outcome is satisfied. All identified risks are managed to an acceptable level through a combination of the following: • Original Equipment Manufacturer (OEM) controls, including a Battery Management System (BMS), thermal management, and fire and gas detection • Project design controls, including site layout and separation, containment systems, and lightning protection • Operational controls including an Operational Environmental Management Plan, preventative maintenance, and SCADA monitoring.	Appendix F – Risk Management Assessment Report (Risk Register in Appendix A)

PO3 Development mitigates the risks of fire, explosion and thermal runaway from battery storage infrastructure.	Complies. The RMAR identifies thermal runaway with potential for fire, explosion and release of toxic gases as the primary hazard. Mitigation is achieved through inherent OEM controls including the BMS, thermal management system, smoke/heat/flammable gas detection, and explosion prevention systems (ventilation and deflagration panels in accordance with NFPA 855). Project design controls including battery unit separation, site layout, and firefighting infrastructure further limit propagation and escalation. All thermal runaway hazards were assessed as Low or Very Low residual off-site risk following implementation of controls. This is supported by the Preliminary Fire Safety Study (Appendix G), which defines fire prevention, detection, isolation and emergency response measures, including separation distances, BMS monitoring, integrated gas, heat and fire detection, and documented emergency procedures. Consequence modelling in the FSS, based on large-scale fire testing of the representative battery technology, demonstrates that fire, explosion and toxic impacts from battery unit scenarios are limited and largely confined within the BESS Yard. With these measures in place, this performance outcome is satisfied.	Appendix F – Risk Management Assessment Report Appendix G – Fire Safety Study
PO4 Development is designed to ensure fire and thermal events can be contained and isolated to prevent escalation and propagation to other developments and uses on and offsite.	Complies. The BSF Yard is designed with 6 m wide access roads separating battery unit groupings, providing operational access and additional separation between containers. Prevention of fire propagation between adjacent battery units is assessed in the Preliminary Fire Safety Study (Appendix G) against a heat-flux propagation criterion of 60 kW/m² sustained for 20 to 30 minutes; battery-to-battery fire propagation was not observed in large-scale fire testing of the representative battery technology. Consistent with the FSS, the separation distances underpinning the final layout will be reassessed and validated at detailed design once the battery supplier and technology are confirmed. Toxic plume dispersion modelling found that life-threatening (AEGL-3) effects from a single battery unit fire are confined to	Appendix F – Risk Management Assessment Report, design considerations included in section 9.2.2

	within 3 m, while irritation and discomfort (AEGL-1) effects extend to approximately 25 m, reaching the adjacent access road but remaining within the broader Project landholding; the closest off-site receptor (Aurumfield Substation) is approximately 100 m from the nearest battery unit. Heat radiation from a Project Substation transformer fire does not impact surrounding site buildings or structures. Containment systems prevent contaminated firewater from migrating off-site.	Appendix G – Fire Safety Study
Incident response		
PO5 Development is designed to facilitate effective and efficient emergency service access and response in the event of a fire, bushfire (including cleared fire fighting areas at the interface of hazardous vegetation), explosion, contamination leak or any other incident requiring an emergency service response.	Complies. Emergency site access will be provided via the existing internal access track from Gilberton Road, which complies with the required minimum width of 6 m to accommodate emergency vehicles, consistent with Australian Fire and Emergency Service Authorities Council (AFAC) guidance. At least two site access points and perimeter access around battery units will be established, with cleared firefighting areas maintained, as outlined in Section 4 of the Bushfire Management Plan (Appendix J) An Operational Environmental Management Plan (OEMP) will be developed in coordination with the Queensland Fire Department and local rural fire brigade prior to commissioning, detailing site-specific BSF hazards, exclusion zones, isolation procedures, and first-responder protocols. Asset Protection Zones of 12–22 m will be maintained around all built infrastructure.	Appendix J – Natural Hazards Risk Assessment and Bushfire management Plan (Section 4 BMP)
PO6 The development: • provides appropriate fire detection, monitoring and notification to the site operator; and • ensures the electrical safety of the facility, in the event of an incident requiring emergency response.	Complies. Each battery unit will be fitted with integrated smoke, heat and flammable gas detection systems linked to the battery management system (BMS) and supervisory control and data acquisition (SCADA) system, providing real-time fault detection and automated alarms to the site operator. As confirmed in the Preliminary Fire Safety Study (Appendix G), the detection systems are integrated with the BMS and SCADA systems to automatically initiate system shutdown and electrical isolation, raise alarms to notify site personnel, and automatically notify emergency services on activation. The SCADA system enables 24/7	Planning Report, Section 4.2 Appendix F – Risk Management Assessment Report,

	remote monitoring, alarm management and controlled shutdown of the BESS during abnormal or emergency conditions. A means for manual electrical isolation of individual battery units will also be provided, including emergency shutdown devices located in the control room and other safe, readily accessible locations remote from the BESS Yard, to enable operator-initiated isolation should automated measures fail. Electrical isolation procedures for damaged equipment will be documented in the OEMP, and an emergency information booklet will be provided at the site perimeter to support first-responder electrical safety. Firefighting infrastructure, including a reticulated water supply sourced from Copperfield Dam, will support suppression operations.	mitigation controls considerations included in section 9.2
PO7 Development demonstrates that there is capacity to provide a reliable, sustainable and fit-for-purpose water supply.	Complies. A reticulated firefighting water supply will be provided on-site, sourced from Copperfield Dam under a licensed allocation of up to 4.65 GL/year and delivered via the existing private water pipeline network servicing the Kidston Clean Energy Hub. On-site connections will be provided with rural fire brigade tank fittings in accordance with the Bushfire Management Plan (Appendix J). The Preliminary Fire Safety Study (Appendix G) confirms the firewater source and defines the hydrant system requirements in accordance with AS 2419.1:2021, being a minimum of two hydrants operating simultaneously at 600 L/min and 350 kPa (unassisted) or 700 kPa (boosted), based on the two most hydraulically disadvantaged hydrants, with capacity to sustain the required flow and pressure for at least four hours or, alternatively, provision of on-site water storage or a diesel-operated firewater pump. Final firewater system capacity will be confirmed at detailed design. On this basis, this performance outcome is satisfied.	Planning Report, Section 4.2 Appendix J – Natural Hazards Risk Assessment and Bushfire management Plan (Section 4.4 BMP) Appendix G – Fire Safety Study
Social impacts		
PO8 Development demonstrates that either:	Complies.	Appendix Q – Community

• a community benefit agreement has been entered into for development requiring social impact assessment; or • where a community benefit agreement has not been entered into, social impacts of the development, including workforce accommodation, local business and industry impacts, community health and well-being, are identified, managed, mitigated, counterbalanced and monitored.	The applicant has entered into a community benefit agreement with Etheridge Shire Council following the approval of a social impact assessment. Refer Appendix Q.	Benefit Agreement
Agricultural land		
PO9 Development is located and designed to ensure there is no unacceptable loss of high-quality agricultural land.	Complies. An Agricultural Land Assessment (ALA) Report (Appendix I) confirms that no high-quality agricultural land, as defined in State Code 27 (being Strategic Cropping Land, Priority Agricultural Areas, or Agricultural Land Classification Class A or B land), is present within the Development Footprint or its immediate surrounds. The Development Footprint is dominated by Agricultural Land Classification Class C land. The nearest Class A or B land is approximately 17 kilometres to the east. No loss of high-quality agricultural land will result from the Project.	Appendix I – Agricultural Land Assessment (Section 3)
PO10 Development does not fragment high-quality agricultural land in a way that restricts connectivity of agricultural land necessary to ensure its ongoing productivity and operation.	Complies. As confirmed by the ALA Memorandum (Appendix I), no high-quality agricultural land is present within or adjacent to the Development Footprint. The Project will not fragment	Appendix I – Agricultural Land Assessment (Section 3)

	high-quality agricultural land or restrict the connectivity of agricultural land necessary for its ongoing productivity and operation.	
PO11 Development is constructed to maintain the fertility and soil attributes of high-quality agricultural land and to enable decommissioning at the end of operations to return the land to pre-construction agricultural land productive value.	Complies. The ALA Memorandum (Appendix I) confirms that no high-quality agricultural land is present within the Development Footprint. The site has been extensively disturbed by prior mining activities and has not been used for agricultural purposes for at least 40 years. There is no requirement to maintain soil fertility or return the land to pre-construction agricultural productive value.	Appendix I – Agricultural Land Assessment (Section 3)
PO12 Development on or adjacent to the stock route network maintains its operational efficiency and ongoing integrity and function.	Complies. The ALA Memorandum (Appendix I) confirms the nearest stock route is located approximately 20 kilometres to the east. The Project does not occur on or adjacent to the Queensland stock route network and will have no impact on its operational efficiency, integrity or function.	Appendix I – Agricultural Land Assessment (Section 3)
Natural hazards		
PO13 Development is located and sited to avoid natural hazard areas including high erosion risk areas and bushfire prone areas.	Complies. As outlined in the NHRA (Appendix J), the Project is sited to avoid key flooding and erosion areas. The Project is located outside any mapped bushfire risk areas. The site occupies previously disturbed land within the Kidston Clean Energy Hub and has been located to leverage existing cleared and established infrastructure, minimising exposure to natural hazard areas.	Appendix J – Natural Hazards Risk Assessment (Section 3)

PO14 Where development cannot be located and sited to avoid natural hazard areas (e.g. Bushfire prone areas, and high erosion risk areas), demonstrate that: • there is no suitable alternative location; • infrastructure can function effectively during and after a natural hazard event; and • mitigation measures are implemented to reduce the risk to people, property and the environment to a tolerable level.	Complies. The Project is located outside any mapped bushfire or erosion risk areas. Notwithstanding this, due to the identified residual bushfire risk associated with the broader landscape setting, the Project site will be subject to bushfire mitigation measures to reduce the risk to people, property, and the environment to a tolerable level, as detailed in the Bushfire Management Plan (BMP) (Appendix J). Further, as outlined in SMP (Appendix L), all BSF infrastructure will be set at a minimum finished level of 539.1 m AHD, being the adopted Flood Planning Level (the 0.5% AEP peak flood level of 538.5 m AHD plus 600 mm freeboard), ensuring infrastructure can function effectively during and after the design flood event.	Appendix J – Natural Hazards Risk Assessment (Sections 3 and 4) Appendix L – Stormwater Management Plan
PO15 Bushfire hazard is identified and risk is mitigated through strategies for vegetation management, landscape management, water supply, provision of appropriate access, identification of safe assembly or evacuation routes and establishing cleared and maintained asset protection zones around infrastructure that is wholly contained on site.	Complies. The Project site will be subject to vegetation management, landscape management, water supply provision, appropriate access design, identification of safe assembly and evacuation routes, and the establishment of cleared and maintained APZs around all on-site infrastructure, as detailed in the BMP (Appendix J). All assets within the Project site will be separated from hazardous vegetation by a distance that achieves no greater than 29 kW/m² of radiant heat, as detailed in section 4.2 of the BMP.	Appendix J – Natural Hazards Risk Assessment (Section 3 and 4)
Protecting water quality and stormwater management		

PO16 Development: • minimises the disturbance of high risk soils; and • manages the release of soil based contaminants.	Complies. The site is brownfield land within the decommissioned Kidston Gold Mine. A site-specific Erosion and Sediment Control Plan (ESC Plan) will be prepared prior to works commencing. Controls include diversion drains to keep clean stormwater separate from disturbed areas, sediment fences downslope of all earthworks, progressive rehabilitation targeting 70% ground cover as soon as practicable, and water carts to suppress dust. These measures are detailed in the Stormwater Management Plan (SMP) (Appendix L).	Appendix L – Stormwater Management Plan (Section 7)
PO17 Development maintains the water quality of receiving waters, waterways and wetlands by: • avoiding locating in waterways and wetlands; • minimising crossings of and interference with natural drainage lines, farm drainage and irrigation infrastructure; • minimising erosion and sediment run off; • managing drainage control; and • preserving the bank stability of affected waterways and drainage lines avoiding non-essential hardening or unnatural modification of the waterway.	Complies. The development does not cross or modify any mapped waterways. Stormwater leaving the site will be treated through a series of water quality measures modelled in Appendices K and L, which confirms the following pollutant reductions are achieved against Far North Queensland Regional Organisation of Councils (FNQROC) targets: • Total Suspended Solids 89.86% (target 80%) • Total Phosphorus 64.21% (target 60%) • Total Nitrogen 40.39% (target 40%) • Gross Pollutants 100% (target 90%). Treatment measures will be confirmed at detailed design. The concept design demonstrates compliant water quality and detention outcomes can be achieved through detention storage, a bioretention (rain garden) element and oil separation. The final basin configuration and treatment train will be confirmed at detailed design consistent with the Stormwater Management Plan (Appendix L).	Appendix K – Hydrology Report (Section 4) Appendix L – Stormwater Management Plan (Section 7)
PO18 Development prevents the release of contaminants to surface water or groundwater	Complies. Potential sources of contamination include transformer oils and fire-suppression water. Transformers will be fully bunded to contain any spill on-site, with oil-water separation provided at the transformer bunds to capture and treat hydrocarbon-contaminated runoff	Appendix L – Stormwater Management

in the event of an incident, including a fire or explosion.	before it enters the drainage system. Where containment is connected to the reticulated stormwater system, it is designed to automatically isolate from that system upon activation of fire or smoke detection, preventing contaminated firewater from entering the stormwater network. The detention basins also provide containment capacity for larger spill events. Final treatment configuration, including separator type and location, will be confirmed at detailed design consistent with the Stormwater Management Plan (Appendix L).	Plan (Sections 4- 7)
PO19 Development minimises interference with overland flow paths.	Complies. A flood assessment was carried out using hydraulic modelling over the 33-hectare contributing catchment. The site sits at the top of its local catchment and is not affected by riverine flooding - the Copperfield River is approximately 11 km away. Under the design storm (0.5% AEP), the peak flood level at the site boundary is 538.5 m AHD. All BSF infrastructure will be set at a minimum finished level of 539.1 m AHD, being the adopted Flood Planning Level (the peak flood level plus 600 mm freeboard). Two detention basins (west basin 1,280 m^3 and south basin 440 m^3) ensure stormwater flows leaving the site after development are no greater than pre-development rates. Stormwater continues to discharge at the existing western boundary toward Gilberton Road, maintaining the current drainage pattern. Refer to Hydrology Report (Appendix K) and SMP (Appendix L).	Appendix K – Hydrology Report (Sections 4 and 5)
Acoustic amenity and vibration		
PO20 Construction, operation, maintenance and decommissioning meets the acoustic quality objectives for sensitive receptors on or adjacent to the site identified in the Environmental Protection (Noise) Policy 2019.	Complies. A detailed noise impact assessment has been completed considering all project stages - construction, operation, maintenance, and decommissioning (Appendix M). Predicted noise levels at all five identified noise sensitive receivers (R1–R5) are well below the applicable acoustic quality objectives under the *Environmental Protection (Noise) Policy 2019*. Due to the large separation distances between the Project site and nearby sensitive receptors, the highest predicted noise level during the most intensive construction activity	Appendix M – Noise and Vibration Impact Assessment (Section 4)

	(earthworks, 121 dB(A) sound power level) is 34 dB(A) at the nearest receiver (R3), which is below the daytime outdoor objective of 50 dB(A) LAeq. During operation, predicted levels are below 23 dB(A) at all receivers. No tonal or impulsive character adjustments are required. The Project also achieves a level at or below 30–35 dB(A) outdoors, confirming background ambient noise at sensitive receptors will not be adversely impacted.	
PO21 Construction, operation, maintenance and decommissioning does not cause vibration impacts that adversely affect the operational performance or sensitive receptors within or adjacent to the site.	Complies. A vibration assessment has been undertaken for construction and decommissioning activities, which represent the phases with the greatest vibration generation potential (Appendix M). The two primary vibration sources - an excavator and a vibratory roller - produce PPV levels of 0.3 mm/s at distances of 35 m and 70 m respectively. These distances are significantly less than the separation distance between the Project and the nearest sensitive receiver. Operation of the BESS is therefore not expected to produce perceptible levels of vibration at the site boundary. Accordingly, no adverse vibration impacts on sensitive receptors are predicted for any stage of the Project.	Appendix M – Noise and Vibration Impact Assessment (Section 4)
Visual impact		
PO22 Development is sited and designed to: • minimise visual impacts on sensitive receptors; • protect the landscape values and scenic amenity of the surrounding landscape; and • provide screening and buffering to sensitive receptors the greatest extent feasible.	Complies. The BSF is sited within the established brownfield industrial precinct of the Kidston Gold Mine, adjacent to the existing Kidston Solar Farm, Aurumfield Substation and associated infrastructure. The landscape character of the area is already modified by industrial and renewable energy land uses. As demonstrated in Figure 3 (Sensitive Receivers), sensitive receptors are located at significant distances from the site, with intervening open woodland vegetation and topographical changes providing natural screening. The BSF's low-profile containerised units (maximum 4.97 m height) and compact 3 ha footprint are consistent with the existing built character of the Kidston Clean Energy Hub, and the sparse regional population limits the number of receptors with direct sightlines to the site.	Planning Report Section 2.1, 2.2 and Figure 3

	Visual impacts on landscape values and scenic amenity are therefore minimised to the greatest extent feasible.	
Lighting		
PO23 Lighting associated with the development provides safe and effective illumination for site operations and maintenance, whilst minimising environmental impacts and visual impacts on sensitive receptors.	Complies. Security lighting within the Development Footprint will be directed inward and designed in accordance with *AS 4282:2019 – Control of the obtrusive effects of outdoor lighting* to limit light spill, glare and sky glow. Given the significant separation distances to sensitive receptors identified in Figure 3, and the inward-directed lighting design, adverse visual or environmental impacts on off-site receptors are not anticipated.	Planning Report Section 4.2
Transport networks		
PO24 Construction, operation, maintenance and decommissioning activities associated with the development do not adversely impact the efficiency and condition of transport networks and infrastructure.	Complies. As demonstrated by the Traffic Impact Assessment (TIA) (Appendix N), traffic generation from construction and decommissioning will be relatively low and will not adversely impact transport networks or infrastructure. There will be only three Over-Size Over-Mass (OSOM) loads, which will travel during night-time periods when background traffic volumes are very low. During operation, traffic volumes will be minimal, with typically only two persons based on site and vehicles attending only on an occasional basis for maintenance purposes.	Appendix N – Traffic Impact Assessment and OSOM Strategy (Section 9)
PO25 Construction, operation, maintenance and decommissioning activities associated with the development do not compromise the safety of users of the transport network.	Complies. There will be only three OSOM loads, and these will be escorted in accordance with National Heavy Vehicle Regulator (NHVR) requirements. All other heavy vehicles travelling to the site will be subject to standard road operating requirements and a project driver	Appendix N – Traffic Impact Assessment and OSOM Strategy (Section 9)

	conduct policy, and therefore do not raise safety concerns. The resultant increase in traffic volumes on the network does not raise any safety issues.	
PO26 Development delivers necessary upgrades to the transport network to ensure construction activities and ongoing maintenance do not adversely impact transport networks and infrastructure.	Complies. The BSF site is situated within the established Kidston Clean Energy Hub, and the existing access route via Gilberton Road already services the Kidston Solar Farm, K2-Hydro facilities, and the Powerlink Aurumfield Substation. The haulage routes identified in the TIA **(**Appendix N) have previously accommodated OSOM vehicle movements for earlier energy projects in the area, and a register of upgrade works to facilitate those projects has been prepared for the project. Any modifications required for the BESS are expected to be minor and localised in nature, generally comprising vegetation trimming, pavement widening at critical corners, and temporary removal of road signage to accommodate OSOM swept paths. Given the established precedent of access for comparable energy infrastructure at this location, it is not anticipated that the Project will require any significant upgrades to the transport network.	Appendix N – Traffic Impact Assessment and OSOM Strategy (Section 9)
PO27 Development demonstrates that a safe, viable and practical haulage route can be secured to accommodate the movement of oversize/overmass vehicles during construction and ongoing maintenance activities.	Complies. This has been demonstrated by the swept path analysis presented in the TIA (Appendix N). It is noted that the haulage routes identified have been previously used for other energy projects in the area that have also required OSOM vehicle access.	Appendix N – Traffic Impact Assessment and OSOM Strategy (Section 9)
PO28 Development provides safe, efficient, and sustainable vehicular access to the site for all vehicle types anticipated through	Complies. Safe, efficient, and sustainable vehicle access can be achieved between Townsville and the site. Road conditions are good and regularly used by OSOM vehicles. Low traffic	Appendix N – Traffic Impact Assessment and OSOM

construction, operation, maintenance and decommissioning.	volumes mean that vehicles will travel efficiently and without adversely impacting other road users.	Strategy (Section 9)
Infrastructure		
PO29 Development is located and designed to avoid unacceptable impacts resulting from proximity to current or approved resource activity or pipeline near or on the site.	Complies. The BSF is located within the established Kidston Clean Energy Hub on the decommissioned South Pond area of the historic Kidston Gold Mine. The Project has been sited with awareness of existing co-located infrastructure, including the Aurumfield Substation (approximately 100 m), the Kidston Pumped Hydro Project (approximately 300 m) and the 132 kV OHTL for the Kidston Solar Project, which traverses the site via a dedicated 20 m easement. The BSF Yard and Project Substation are separated either side of this easement. No resource activities or regulated pipelines have been identified within or immediately adjacent to the Project footprint. The RMAR confirms that no off-site impacts to adjacent Clean Energy Hub infrastructure are anticipated from credible hazardous events, with the exception of temporary operational disruption in the event of an Aurumfield Substation electrical fault.	Planning Report Section 1
PO30 Development is serviced by all relevant infrastructure commensurate with its scale and operational requirements.	Complies. The BSF is located within the established Kidston Clean Energy Hub and leverages existing electricity, water, road and telecommunications infrastructure. Electricity will be supplied by the existing Ergon LV distribution network that services the site, with grid connection to the existing Aurumfield Substation via an overhead transmission line. Potable water will be trucked to site as required, with a rainwater tank and dedicated water storage tank incorporated into the site design. A reticulated firefighting water supply will be provided on-site, sourced from Copperfield Dam under a licensed allocation of up to 4.65 GL/year and delivered via the existing private water pipeline network servicing the Clean	Planning Report Section 4.3

	Energy Hub. An on-site effluent disposal system will service the site office. The development does not generate demand for Council's town-based infrastructure services and operates independently of urban servicing networks.	
Decommissioning		
PO31 Relevant components of development, both after completion of construction and at cessation of operations, are decommissioned in a timely and efficient manner.	Complies. The Project has a planned operational life of 25 years, with decommissioning anticipated to commence in 2054. A Preliminary Battery Recycling Strategy (PBRS) (Appendix P) has been prepared as a supporting document to this DA, outlining the anticipated decommissioning sequence including pre-deinstallation preparation, electrical isolation and de-energisation, progressive physical removal of modules, racks and containers, and packaging and transport to licensed recycling facilities. Deinstallation will be carried out by suitably qualified and experienced contractors. A conditioned Battery Recycling Strategy (BRS) and End of Operation Decommissioning Management Plan (EODMP) will be submitted to SARA for endorsement six months prior to cessation of operations.	Appendix P – Preliminary Battery Recycling Strategy Appendix O – Decommissioning Security Report
PO32 Development decommissioning ensures that: • materials removed from site are minimised; • materials that are removed from the site are disposed of at approved disposal facilities capable of receiving the materials; and • opportunities to reuse, recycle and/or repurpose the materials are deployed to the greatest extent feasible.	Complies. The PBRS (Appendix P) confirms that decommissioning will prioritise material and metal recovery. Table 1 of the PBRS provides an itemised recyclability breakdown for all key BSF material streams - electrochemical materials (Lithium Iron Phosphate or LFP), metals (steel, aluminium, copper), electronics, coolant and plastics - all of which are confirmed as recyclable and/or recoverable. At end of life, batteries will be transported to licensed and approved recycling facilities, or licensed and approved interim storage facilities, that meet Sedex Members Ethical Trade Audit (SMETA) standards, consistent with the Preliminary Battery Recycling Strategy (Appendix P).	Appendix P – Preliminary Battery Recycling Strategy

	Above-ground cabling and infrastructure will be removed for recycling, while underground cabling may be terminated in-situ to minimise disturbance. The conditioned BRS will reflect best-practice recycling capabilities available at the time of decommissioning.	
PO33 Decommissioning at end of operations ensures disturbance footprints are rehabilitated, and waterways and drainage patterns are reinstated.	Complies The BSF is located on previously disturbed brownfield land within the former Kidston Gold Mine precinct. At end of operations, all above-ground infrastructure will be removed and the site rehabilitated in accordance with a Decommissioning and Rehabilitation Plan, returning the footprint to a suitable post-Project land use. Access tracks will be retained or removed subject to landholder requirements. The SMP (Appendix L) ensures drainage patterns are appropriately managed across the Project lifecycle, and erosion and sediment controls will be implemented during decommissioning activities.	Appendix P – Preliminary Battery Recycling Strategy Appendix L – Stormwater Management Plan (Section 4)
PO34 Decommissioning incorporates design features that enable reuse, recycling, and recovery of battery components and associated infrastructure at end-of-life.	Complies. A PBRS has been prepared specifically to address this PO (Appendix P), informed by State Code 27 guidance and advice from the Department of State Development, Infrastructure and Planning. The PBRS demonstrates: • due diligence requirements for qualified deinstallation contractors with LFP BESS experience and relevant accreditations; • a structured deinstallation approach including OEM-guided end-of-life planning, hazard classification and safe handling of damaged modules; and • an itemised recyclability assessment confirming all major material streams are recyclable and/or recoverable. The conditioned BRS will be submitted to SARA six months prior to cessation of operations and will incorporate best-practice recycling methods available at that time.	Appendix P – Preliminary Battery Recycling Strategy

PO35 Decommissioning plans are secured by bonds or financial guarantees or other mechanism/s to safeguard compliance.	Complies A Decommissioning Security Report has been prepared in accordance with State Code 27 and is provided at Appendix O. The Report provides evidence of the proposed financial security mechanism to safeguard decommissioning at both end of construction and end of operations, at no cost to landowners (that are not project operators) or the government. The Report sets out a phased financial security framework calibrated to the risk of asset abandonment across the Project lifecycle, with security values scaling from the construction phase through to end of decommissioning. Decommissioning costs are to be calculated on a net-cost basis (accounting for salvage value) by an independent Quantity Surveyor or professional of similar capability. Acceptable security instruments include a cash security held in trust, a bank guarantee or letter of credit, or a Parent Company Guarantee, to be determined at the time each security is triggered. As detailed in the Report, the Project Co is currently both proponent and landowner and is wholly owned within the Genex / J-Power corporate group, such that there is no separate third-party landowner exposure. The financial security framework is structured to be implemented if that ownership configuration changes (for example, through a sale or novation resulting in the Project Co ceasing to be a related party to the landowner, or a transfer to an operating entity that does not own the land), thereby safeguarding compliance in the circumstances where third-party exposure would arise. The Project will comply with financial assurance conditions imposed by SARA as part of the development approval, with the specific form and quantum of any security determined in accordance with those conditions and in consultation with the relevant State authority.	Appendix O – Decommissioning Security Report

5.2.3. State Planning Policy 2017

The State Planning Policy (SPP) details the State's interests in planning. A standalone assessment against the SPP has not been undertaken however, a brief overview of relevant matters is provided in Table 5-3.

Table 5-3 Summary – State Planning Policy

Theme	State interest	Policy/assessment benchmark	Response
Economic growth	Agriculture	The resources that agriculture depends on are protected to support the long-term viability and growth of the agricultural sector.	As outlined in the ALA (Appendix I) the proposed BSF is located on previously disturbed land within an established renewable energy precinct associated with the former Kidston Gold Mine. The development footprint is small and does not support viable agricultural production. The proposal will not fragment agricultural land or reduce the productive capacity of surrounding rural land.
	Development and construction	Employment needs, economic growth, and a strong development and construction sector are supported by facilitating a range of residential, commercial, retail, industrial and mixed use development opportunities.	The proposal supports regional economic development through construction investment and ongoing operational employment associated with the renewable energy sector. The BSF will support the reliability of the electricity network and contribute to the continued growth of renewable energy infrastructure in the region.
	Mining and extractive resources	Key resource areas (KRAs) are identified, including the resource/ processing area, separation area, transport route and transport route separation area.	The development is not located within or adjacent to a mapped Key Resource Area or associated separation area or transport route. The proposal will therefore not affect the long-term availability of extractive resources or transport routes used for the haulage of extractive materials. The site was previously developed and operated as the open-cut Kidston Gold Mine, where the extractive resource has been worked out. The development repurposes this depleted, previously disturbed mining land for renewable energy generation and storage, supporting the continued and improved utilisation of the land across the full lifecycle of the extractive resource industry.
		KRAs are protected by: a) maintaining the long-term availability of the extractive resource and access to the KRA b) avoiding new sensitive land uses and other incompatible land uses within the resource/ processing area and the related separation area of a KRA that could impede the extraction of the resource	As the site is not located within or near a mapped Key Resource Area or associated transport route, the development will not constrain the extraction, processing or transportation of extractive resources.

		c) (c) avoiding land uses along the transport route and transport route separation area of a KRA that are likely to compromise the ongoing use of the route for the haulage of extractive materials d) avoiding new development adjacent to the transport route that is likely to adversely affect the safe and efficient transportation of the extractive resource.	
Environment and heritage	Biodiversity	Matters of environmental significance are valued and protected, and the health and resilience of biodiversity is maintained or enhanced to support ecological processes.	The development footprint is located on previously disturbed land associated with historical mining and existing renewable energy infrastructure. Ecological investigations were undertaken to identify and confirm vegetation on site. The project has been designed to avoid impacts to any environmental values, and all infrastructure has been located in areas free from remnant vegetation.
	Cultural heritage	The cultural heritage significance of heritage places and heritage areas, including place of Aboriginal and Torres Strait Islander cultural heritage, is conserved for the benefit of the community and future generations.	The development footprint on Lot 12 SP345756 does not contain any place listed in the Queensland Heritage Register or identified as a heritage place in Schedule 3 of the Etheridge Shire Planning Scheme. The proponent acknowledges the cultural heritage significance of the gold-mining era to the Etheridge Shire community, reflected in the numerous mining-related places identified in the Queensland Heritage Register and Schedule 3 of the planning scheme. The Kidston State Battery and Township (Queensland Heritage Register No. 600506) and the Kidston Cemetery (a local heritage place, Lot 1 PY4) are located in the broader Kidston locality. The BSF is sited wholly within the previously disturbed footprint of the former open-cut Kidston Gold Mine, now the Kidston Clean Energy Hub, and is set back from, and does not affect, these heritage places or their settings. Aboriginal cultural heritage will be managed in accordance with the duty of care under the Aboriginal Cultural Heritage Act 2003 (Qld), including ongoing engagement with the Ewamian People as the relevant Aboriginal party for the area.

	Water quality	The environmental values and quality of Qld waters are protected and enhanced.	The development will incorporate standard erosion and sediment control measures and stormwater management practices during construction and operation to protect downstream water quality. The site layout avoids mapped watercourses and aquatic features. Stormwater management measures will be incorporated into the design to prevent impacts associated with overland flow. Water quality and stormwater management measures are outlined in Appendix L.
Safety and resilience to hazards	Emissions and hazardous activities	Protection from emissions and hazardous activities.	The BSF will store energy from the National Energy market (NEM) and does not generate operational air emissions. Battery units incorporate integrated monitoring, cooling and safety systems to ensure safe operation, and any hazardous materials will be stored and managed in accordance with relevant Australian Standards.
		Protection of industrial development and major infrastructure from encroachment.	The development is located within an established renewable energy precinct and represents compatible infrastructure that will not introduce sensitive land uses capable of constraining the operation of existing energy infrastructure.
	Natural hazards, risks and resilience	Identified natural hazard areas.	Relevant natural hazards have been assessed through technical investigations prepared for the project (Appendix J). The development layout and design incorporates appropriate mitigation measures to ensure infrastructure resilience and safe operation.
		Development in the hazard area avoids or mitigates the risk to people and property.	The design of the facility incorporates appropriate engineering and operational measures to manage potential hazard risks and ensure the safety of people, infrastructure and surrounding land uses.
Infrastructure	Energy and water supply	Existing electricity infrastructure, including easements and substations, must be protected from development that would compromise corridor integrity and the efficient delivery and functioning of the infrastructure.	The BSF has been designed to integrate with existing electricity infrastructure and will connect to the adjacent substation as part of the broader renewable energy network. The proposal will not compromise the integrity or operation of existing infrastructure.
		Development of major electricity infrastructure avoids or otherwise minimises adverse impacts on surrounding land uses and the natural environment.	The addition of the Project is not considered likely to significantly impact surrounding land uses or the natural environment. Surrounding land uses consist predominantly of renewable energy facilities – namely, the Kidston Solar Farm which is directly south of the BSF footprint. The Kidston Pumped Hydro project is also

			situated to the east of the proposed BSF location.
		The development of renewable energy at the regional, local and individual scale is enabled in appropriate locations.	The BSF is located on the decommissioned Kidston Gold Mine site. The site is currently used for other renewable energy infrastructure, including solar and pumped hydro. The site is mapped as Category X land, so the Project will not impact regulated vegetation.
	Infrastructure integration	The benefits of past and ongoing investment in infrastructure and facilities are maximised through integrated land use planning.	It is considered that the Project aligns with State and Commonwealth renewable energy targets. The BSF integrates with existing renewable generation and transmission infrastructure, enabling stored energy to be dispatched to the electricity network and improving grid stability and reliability.

5.3. Local Planning Scheme

The Etheridge Shire Planning Scheme is the applicable local planning instrument for the subject site. For the BSF component of the Project, the Planning Scheme does not apply as a direct assessment benchmark. However, in accordance with the State Code 27 Guideline, the Planning Act and the Planning Regulation, the assessment manager may have regard to relevant provisions of the Planning Scheme as prescribed matters, to the extent they are relevant to the assessment of the BSF.

Assessment against the Etheridge Planning Scheme has been undertaken to:

- identify the strategic intent for the site and locality; and
- confirm that the proposed development does not conflict with the overall planning outcomes sought by the Scheme.

Where matters are comprehensively addressed by State Code 27, the State Code is relied upon as the primary assessment benchmark.

5.3.1. Strategic Framework

As the proposed development is Impact Assessable, it is required to be assessed against the assessment benchmarks prescribed by the Planning Act. In addition to the prescribed State Development Assessment provisions, the assessment manager may consider the local planning scheme.

The Project has therefore been assessed against the strategic intent statements within the Strategic Framework of the Etheridge Shire Planning Scheme. The Strategic Framework provides the policy direction of the Planning Scheme and forms the basis for ensuring appropriate development occurs within the planning scheme area. The five strategic intent statements are addressed in Table 5-4 below to demonstrate consistency with the policy direction and intent of the Planning Scheme.

Table 5-4 Assessment against the Strategic Framework

Strategic Intent statement	Response
Encouraging economic growth and diversification	
• Agriculture (s 3.3.1.1) – Protect and maintain the viability of the rural economy, particularly cattle grazing and cropping, by avoiding land use conflict, preventing fragmentation of productive land (especially ACL Class A and B land), supporting diversification and value-adding agricultural activities, and safeguarding the stock route network and environmental values.	The BSF is located within an established renewable energy precinct on previously disturbed land associated with historic mining activities. As outlined in the ALA in Appendix I, the development does not fragment productive agricultural land, compromise ACL Class A or B land, or create land use conflict with surrounding rural activities. The proposal supports diversification of the rural economy through renewable energy infrastructure while maintaining the viability of surrounding agricultural uses.
Tourism (s 3.3.1.2) – Support sustainable tourism growth, including nature-based, cultural and event-based tourism, while protecting scenic landscapes, heritage values and key tourism corridors. Development should enhance visitor experiences,	The BSF will be located within an existing renewable energy and mining precinct and will not adversely affect scenic landscapes, cultural heritage values or tourism corridors. The development supports regional economic

be sympathetic to rural character, and be supported by appropriate infrastructure	diversification while maintaining the rural character and tourism values of the Shire.
Resources (s 3.3.1.3) – Support mining and extractive industries where environmental and agricultural constraints are appropriately managed, avoid land use conflict with existing tenements, and ensure rehabilitation of extractive sites. Non-resident workforce accommodation may be supported where appropriately located.	The site is located within an established mining locality that has been substantially disturbed by previous open-cut gold mining. The development represents the continued and improved use of a depleted, previously mined resource asset, repurposing the worked-out site and existing Kidston Clean Energy Hub infrastructure for renewable energy generation and storage and enhancing its utilisation across the full lifecycle of the land. By locating on previously disturbed land within the established energy precinct, the development does not sterilise extractable mineral resources, constrain access to a Key Resource Area or associated transport route, or create conflict with existing or surrounding mining tenements.
Services (s 3.3.1.4) – Protect and consolidate Georgetown as the primary service centre, facilitate commercial and industrial growth within designated township areas, and ensure service uses are not compromised by incompatible development.	The proposal does not affect the function of Georgetown or other townships as service centres. The development supports broader regional economic activity through renewable energy investment while remaining compatible with the Shire's settlement hierarchy.
Facilitating responsible growth for rural and remote township living	
• Protect and maintain the Shire's rural lifestyle and low-density character while supporting sustainable economic growth. • Consolidate residential, commercial and industrial development within designated township areas, particularly reinforcing Georgetown as the primary administrative and service centre. • Avoid inappropriate expansion or fragmentation of rural land and ensure development outside townships remains consistent with rural values. • Ensure higher impact or industrial activities are located away from sensitive land uses and managed to protect community health, safety and environmental values. • Safeguard infrastructure, community facilities, health and educational services from incompatible development. • Ensure future growth occurs in an orderly manner, with consideration of ecological values,	The proposed BSF is located within an established infrastructure precinct associated with the Kidston Clean Energy Hub and does not introduce residential or township expansion. The development is consistent with the rural character of the Shire and does not fragment rural land or introduce sensitive land uses. The facility is appropriately located away from townships and community facilities and will operate within an existing renewable energy precinct. Environmental, servicing and hazard considerations are addressed through the broader project assessment and supporting technical investigations.

natural hazards, infrastructure servicing and cultural heritage.	
Avoiding and mitigating impacts of natural and other hazards	
Bushfire (s 3.3.3.1) – Avoid development in bushfire-prone areas where possible; where unavoidable, ensure development is resilient, does not burden emergency response capacity, and incorporates fire management measures.	Bushfire risk has been considered through project-specific technical assessments (Appendix J) and will be managed through appropriate site design and operational management measures. The development does not introduce vulnerable residential uses and will incorporate fire management practices consistent with infrastructure development in rural areas.
Flooding (s 3.3.3.2) – Avoid locating development in flood-prone areas; ensure development does not worsen flood risk, protects people and property, and manages impacts on essential infrastructure.	Flood risk has been assessed through supporting technical investigations (Appendix K). The development layout and design will incorporate appropriate mitigation measures to ensure infrastructure resilience and to avoid increasing flood risk to people, property or surrounding land.
Landslide (s 3.3.3.3) – Encourage development on stable, level land and avoid steep or unstable areas.	The site is associated with an established infrastructure precinct. The proposal does not facilitate development on steep or unstable land.
Emissions and Hazardous Activities (s 3.3.3.4) – Locate hazardous activities to avoid adverse impacts on surrounding uses, protect community health and safety, and ensure sensitive uses are not exposed to risks from past or existing mining or hazardous activities.	The BSF stores electricity generated from renewable sources and does not generate operational air emissions. Battery infrastructure incorporates monitoring, cooling and safety systems to ensure safe operation. Hazardous materials associated with battery systems will be managed in accordance with relevant Australian Standards and regulatory requirements.
Safeguarding our environment and heritage	
• Balance economic development with protection of environmental values and local identity. • Protect waterways, water quality and environmental values within the Gilbert Basin and associated catchments. • Avoid significant adverse impacts on state biodiversity values and maintain ecological connectivity. • Ensure development adjacent to national parks and conservation reserves does not compromise conservation values or fire management. • Protect Aboriginal cultural heritage and areas of cultural significance in accordance with	The development balances economic growth with environmental protection by locating renewable energy infrastructure within a previously disturbed mining site. The proposal does not impact mapped waterways or significantly affect water quality, and ecological investigations confirm the site contains largely degraded vegetation with limited ecological value. The development does not affect national parks or conservation reserves and will not compromise conservation land management. Aboriginal cultural heritage will be managed in accordance with the Aboriginal Cultural Heritage Act 2003 (Qld). No state or local heritage places are affected.

legislative requirements and planning scheme policy. • Conserve state and local non-Aboriginal heritage places and avoid development that diminishes their setting or significance.	
Providing appropriate infrastructure	
• Ensure development does not adversely impact the safety, efficiency or flood immunity of the local and State-controlled road network. • Avoid development that compromises airport operations, aviation facilities or associated navigation infrastructure. • Protect the rail corridor and ensure development does not affect its long-term viability or operation. • Safeguard existing and approved energy, water supply and communications infrastructure corridors from incompatible development. • Support renewable energy infrastructure and other regionally significant infrastructure in rural areas, where environmentally and financially viable. • Ensure development does not compromise town-based infrastructure services or create unreasonable servicing burdens.	• Roads The development will utilise existing access infrastructure associated with the Clean Energy Hub and does not introduce significant additional demand on the local or State-controlled road network. • Air The site is not located near township aerodromes and the development will not interfere with aviation operations or navigation infrastructure. • Rail The proposal does not affect the Savannahlander rail corridor or its ongoing operation. • Energy, Water and Communications The BSF integrates with existing electricity infrastructure and supports renewable energy generation and storage within the region. The development aligns with the Strategic Framework's support for renewable energy infrastructure in rural areas. • Town-based Infrastructure The development does not generate demand for town-based infrastructure services and will operate independently of Council's urban servicing networks.

5.3.2. Zoning

Rural Zone

The Planning Scheme identifies the BSF site (lot 12 SP345756) as being within the Rural Zone. Section 5.2.1.1 of the Planning Scheme states the purpose of the Rural Zone is to:

provide for rural uses and activities; provide for other uses and activities that are compatible with—

- existing and future rural uses and activities;

- the character and environmental features of the zone;

maintain the capacity of land for rural uses and activities by protecting and managing significant natural resources and processes.

In addition, Etheridge Council provides that the intended purpose of the Rural Zone is also to:

h) allow for the development of renewable energy facilities, whilst protecting agricultural and environmental interests.

As the MCU application is to facilitate the construction of a renewable energy storage facility within an existing renewable energy hub, it is consistent with the purpose of the zone.

5.4. Regional Plan

Etheridge Shire is within the Draft Far North Queensland Regional Plan 2025 (Regional Plan) area. Regional plans identify matters of regional importance to support and guide development and to protect regional resources and interests. Council has appropriately integrated the regional interests identified in the Regional Plan into the Planning Scheme. As such, a detailed assessment against the Regional Plan has not been undertaken. However, a brief overview of how the proposal aligns with the five key themes of the Regional Plan is provided in the table below.

Table 5-5 Draft Far North Queensland Regional Plan 2025

Theme	Policy and strategy outcomes	Response
Housing	Facilitates housing supply in well-located, infrastructure-supported areas, including higher densities where serviced and supported by centres and infrastructure planning.	The MCU is for a battery storage facility and does not involve any residential use or create demand for housing land. The development is unstaffed during operation and will not generate an ongoing resident workforce. Any temporary construction workforce will be managed through the project's workforce and accommodation arrangements, consistent with the Social Impact Assessment, and will not place pressure on local housing supply. The proposal therefore does not prejudice the plan's housing supply intent.
Thriving economy	Supports growth and diversification of key industries (including emerging sectors), identifies regional industrial areas and major economic assets, and protects productive land and resources (including priority agricultural areas).	The development is regionally significant energy infrastructure that directly supports the plan's economic diversification objectives, contributing construction expenditure, employment and procurement opportunities and supporting the emerging renewable energy sector. It is located on previously disturbed, non-productive land

		within the established Kidston Clean Energy Hub and does not displace priority agricultural areas or productive land. As confirmed in the Agricultural Land Assessment (Appendix I), the site does not contain high-quality agricultural land, so the development does not compromise the plan's resource and productive land protections.
Ecotourism and biodiversity	Protects and enhances biodiversity and natural assets that underpin lifestyle and the visitor economy, supports biodiversity corridors/rehabilitation focus areas, and manages development in relation to scenic amenity and sensitive environments.	The development footprint is located on previously cleared, disturbed land (Category X vegetation) within the former mine site and avoids regulated vegetation, mapped MSES and areas of high ecological value, consistent with the ecological assessment (Appendix E) and the avoidance hierarchy applied in the project design. No clearing of remnant or regrowth vegetation is required. Scenic amenity and visual impacts on sensitive receptors are minimised through the site's location within an existing energy precinct, as addressed under State Code 27. The proposal does not compromise biodiversity corridors or natural assets underpinning the regional visitor economy.
Healthy and liveable communities	Enhances quality of life and wellbeing and improves resilience to natural hazards (including heat and severe weather), with planning that supports inclusive, functional communities.	The development incorporates fire, hazard and natural-hazard mitigation measures in accordance with State Code 27 and the supporting technical assessments (bushfire, natural hazard risk and flood), ensuring the facility is resilient and does not increase risk to surrounding communities or land. By contributing firmed, dispatchable renewable energy to the grid, the development supports network reliability and the region's transition to a resilient, low-emissions energy system. Acoustic, lighting and amenity impacts on sensitive receptors are managed consistent with the relevant State Code 27 performance outcomes.

Infrastructure	Integrates land use and infrastructure planning and supports efficient, resilient transport, water, energy and digital systems, including region-shaping infrastructure and improved connectivity.	The development is essential energy infrastructure that directly advances this theme. It integrates with the existing Kidston Clean Energy Hub and established electricity network infrastructure, making efficient use of previously developed land and existing connection assets. The facility provides energy storage that improves the efficiency, resilience and dispatchability of the regional and State electricity system, consistent with the plan's intent to coordinate and support resilient infrastructure delivery.

5.5. Commonwealth legislation

5.5.1. Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provides for the protection of MNES. These include:

- World Heritage properties
- National heritage places
- Wetlands of international importance
- Threatened species and ecological communities
- Migratory species
- Commonwealth marine areas
- The Great Barrier Reef Marine Park
- Nuclear actions
- Water resources, in relation to coal seam gas development and large coal mining development.

Where a proposed development has, or is likely to have, a significant impact on a MNES, the Project must be referred to the Department of Climate Change, Energy, the Environment and Water (DCCEEW) for a decision in respect of whether further assessment and approval is required under the EPBC Act, i.e., a controlled action decision.

The Ecological Assessment Memorandum included at Appendix E identifies no significant impacts on MNES. As such, the Project does not trigger referral to DCCEEW under the EPBC Act.

6. Conclusion

This report supports a development application for a material change of use for a battery storage facility, the Kidston BSF, on Lot 12 on SP345756, within the Etheridge Shire Council area. The application is assessed by the SARA as the assessment manager, with State Code 27: Battery storage facility development, comprising the primary assessment benchmark.

The BSF is located wholly within the previously disturbed footprint of the former Kidston Gold Mine, now the Kidston Clean Energy Hub, and integrates with established renewable energy and electricity network infrastructure. The infrastructure footprint contains no regulated vegetation, mapped matters of state environmental significance or high-quality agricultural land, and is not located within a Key Resource Area. As demonstrated in the assessment and supporting technical reports, the development responds to the performance outcomes of State Code 27, including risk mitigation, incident response, water quality and stormwater management, natural hazards, amenity, transport and decommissioning.

The proposal is consistent with the relevant matters SARA must have regard to, including the State Planning Policy 2017, the Draft Far North Queensland Regional Plan 2025 and the strategic framework and Rural zone purpose of the Etheridge Shire Planning Scheme, which expressly supports the development of renewable energy facilities. The Ecological Assessment Memorandum (Appendix E) confirms no significant impact on matters of national environmental significance, and the development does not trigger referral under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

For the reasons set out in this report, the proposed Kidston BSF represents an appropriate and well-sited use of previously disturbed land that delivers regionally significant energy infrastructure while avoiding unacceptable impacts on the environment, surrounding land uses and the community. It is therefore considered that the application warrants approval, subject to reasonable and relevant conditions.

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Appendix A DA Form 1

DA Form 1 – Development application details

Approved form (version 1.6 effective 2 August 2024) made under section 282 of the Planning Act 2016.

This form **must** be used to make a development application **involving code assessment or impact assessment**, except when applying for development involving only building work.

For a development application involving **building work only**, use *DA Form 2 – Building work details*.

For a development application involving **building work associated with any other type of assessable development (i.e. material change of use, operational work or reconfiguring a lot)**, use this form (*DA Form 1*) **and** parts 4 to 6 of *DA Form 2 – Building work details.*

Unless stated otherwise, all parts of this form **must** be completed in full and all required supporting information **must** accompany the development application.

One or more additional pages may be attached as a schedule to this development application if there is insufficient space on the form to include all the necessary information.

This form and any other form relevant to the development application must be used to make a development application relating to strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994*, and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008.* For the purpose of assessing a development application relating to strategic port land and Brisbane core port land, any reference to a planning scheme is taken to mean a land use plan for the strategic port land, Brisbane port land use plan for Brisbane core port land, or a land use plan for airport land.

Note: *All terms used in this form have the meaning given under the Planning Act 2016, the Planning Regulation 2017, or the Development Assessment Rules (DA Rules).*

PART 1 – APPLICANT DETAILS

1) Applicant details	
Applicant name(s) *(individual or company full name)*	K3W Project Co Pty Ltd as trustee for the K3W Project Trust
Contact name *(only applicable for companies)*	James Birkmanis (c/o Amylee Quirk, NGH)
Postal address *(P.O. Box or street address)*	Level 24, 140 Creek Street
Suburb	Brisbane
State	Qld
Postcode	4000
Country	Australia
Contact number	07 4672 6133
Email address *(non-mandatory)*	Amylee.quirk@fyfe.com.au
Mobile number *(non-mandatory)*	
Fax number *(non-mandatory)*	

Applicant's reference number(s) *(if applicable)*

1.1) Home-based business

☐ Personal details to remain private in accordance with section 264(6) of *Planning Act 2016*

2) Owner's consent
2.1) Is written consent of the owner required for this development application?
☒ Yes – the written consent of the owner(s) is attached to this development application ☐ No – proceed to 3)

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PART 2 – LOCATION DETAILS

3) Location of the premises *(complete 3.1) or 3.2), and 3.3) as applicable)*

***Note**: Provide details below and attach a site plan for any or all premises part of the development application. For further information, see DA Forms Guide: Relevant plans.*

3.1) Street address and lot on plan

☒ Street address **AND** lot on plan (*all lots must be listed*), ***or***

☐ Street address **AND** lot on plan for an adjoining or adjacent property of the premises *(appropriate for development in water but adjoining or adjacent to land e.g. jetty, pontoon. All lots must be listed).*

a)	Unit No.	Street No.	Street Name and Type	Suburb
			Gilberton Road	Einasleigh
	Postcode	Lot No.	Plan Type and Number *(e.g. RP, SP)*	Local Government Area(s)
	4871	12	SP345756	Etheridge Shire Council
b)	Unit No.	Street No.	Street Name and Type	Suburb
	Postcode	Lot No.	Plan Type and Number (e.g. RP, SP)	Local Government Area(s)

3.2) Coordinates of premises *(appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay)*

***Note**: Place each set of coordinates in a separate row.*

☐ Coordinates of premises by longitude and latitude

Longitude(s)	Latitude(s)	Datum	Local Government Area(s) *(if applicable)*
		☐ WGS84 ☐ GDA94 ☐ Other:	

☐ Coordinates of premises by easting and northing

Easting(s)	Northing(s)	Zone Ref.	Datum	Local Government Area(s) *(if applicable)*
		☐ 54 ☐ 55 ☐ 56	☐ WGS84 ☐ GDA94 ☐ Other:	

3.3) Additional premises

☐ Additional premises are relevant to this development application and the details of these premises have been attached in a schedule to this development application

☒ Not required

4) Identify any of the following that apply to the premises and provide any relevant details

☐ In or adjacent to a water body or watercourse or in or above an aquifer

Name of water body, watercourse or aquifer:

☐ On strategic port land under the *Transport Infrastructure Act 1994*

Lot on plan description of strategic port land:

Name of port authority for the lot:

☐ In a tidal area

Name of local government for the tidal area *(if applicable)*:

Name of port authority for tidal area *(if applicable)*

☐ On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*	
Name of airport:	
☐ Listed on the Environmental Management Register (EMR) under the *Environmental Protection Act 1994*	
EMR site identification:	
☐ Listed on the Contaminated Land Register (CLR) under the *Environmental Protection Act 1994*	
CLR site identification:	

5) Are there any existing easements over the premises?

Note: Easement uses vary throughout Queensland and are to be identified correctly and accurately. For further information on easements and how they may affect the proposed development, see DA Forms Guide.

☒ Yes – All easement locations, types and dimensions are included in plans submitted with this development application

☐ No

PART 3 – DEVELOPMENT DETAILS

Section 1 – Aspects of development

6.1) Provide details about the first development aspect

a) What is the type of development? *(tick only one box)*

☒ Material change of use ☐ Reconfiguring a lot ☐ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

☒ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

☐ Code assessment ☒ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*:

Material Change of Use for Battery Storage Facility

e) Relevant plans

***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms guide: Relevant plans.*

☒ Relevant plans of the proposed development are attached to the development application

6.2) Provide details about the second development aspect

a) What is the type of development? *(tick only one box)*

☐ Material change of use ☐ Reconfiguring a lot ☐ Operational work ☐ Building work

b) What is the approval type? *(tick only one box)*

☐ Development permit ☐ Preliminary approval ☐ Preliminary approval that includes a variation approval

c) What is the level of assessment?

☐ Code assessment ☐ Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*:

e) Relevant plans

***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.*

☐ Relevant plans of the proposed development are attached to the development application

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6.3) Additional aspects of development
☐ Additional aspects of development are relevant to this development application and the details for these aspects that would be required under Part 3 Section 1 of this form have been attached to this development application
☒ Not required
6.4) Is the application for State facilitated development?
☐ Yes - Has a notice of declaration been given by the Minister?
☒ No

Section 2 – Further development details

7) Does the proposed development application involve any of the following?	
Material change of use	☒ Yes – complete division 1 if assessable against a local planning instrument
Reconfiguring a lot	☐ Yes – complete division 2
Operational work	☐ Yes – complete division 3
Building work	☐ Yes – complete *DA Form 2 – Building work details*

Division 1 – Material change of use

***Note**: This division is only required to be completed if any part of the development application involves a material change of use assessable against a local planning instrument.*

8.1) Describe the proposed material change of use			
Provide a general description of the proposed use	Provide the planning scheme definition *(include each definition in a new row)*	Number of dwelling units *(if applicable)*	Gross floor area (m^2) *(if applicable)*
Battery Storage Facility	***battery storage device***— (a)means plant that— (i)converts electricity into stored energy; and (ii)releases stored energy as electricity; and (b)includes any equipment necessary for the operation of the plant. ***battery storage facility*** means the use of premises for the operation of 1 or more battery storage devices.	N/A	N/A

8.2) Does the proposed use involve the use of existing buildings on the premises?
☐ Yes
☒ No

8.3) Does the proposed development relate to temporary accepted development under the Planning Regulation?	
☐ Yes – provide details below or include details in a schedule to this development application	
☒ No	
Provide a general description of the temporary accepted development	Specify the stated period dates under the Planning Regulation

Division 2 – Reconfiguring a lot

***Note**: This division is only required to be completed if any part of the development application involves reconfiguring a lot.*

9.1) What is the total number of existing lots making up the premises?

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9.2) What is the nature of the lot reconfiguration? *(tick all applicable boxes)*	
☐ Subdivision *(complete 10)*	☐ Dividing land into parts by agreement *(complete 11)*
☐ Boundary realignment *(complete 12)*	☐ Creating or changing an easement giving access to a lot from a constructed road *(complete 13)*

10) Subdivision				
10.1) For this development, how many lots are being created and what is the intended use of those lots:				
Intended use of lots created	Residential	Commercial	Industrial	Other, please specify:
Number of lots created				

10.2) Will the subdivision be staged?	
☐ Yes – provide additional details below ☐ No	
How many stages will the works include?	
What stage(s) will this development application apply to?	

11) Dividing land into parts by agreement – how many parts are being created and what is the intended use of the parts?				
Intended use of parts created	Residential	Commercial	Industrial	Other, please specify:
Number of parts created				

12) Boundary realignment			
12.1) What are the current and proposed areas for each lot comprising the premises?			
Current lot		Proposed lot	
Lot on plan description	Area (m^2)	Lot on plan description	Area (m^2)
12.2) What is the reason for the boundary realignment?			

13) What are the dimensions and nature of any existing easements being changed and/or any proposed easement? *(attach schedule if there are more than two easements)*				
Existing or proposed?	Width (m)	Length (m)	Purpose of the easement? *(e.g. pedestrian access)*	Identify the land/lot(s) benefitted by the easement

Division 3 – Operational work

***Note**: This division is only required to be completed if any part of the development application involves operational work.*

14.1) What is the nature of the operational work?		
☐ Road work	☐ Stormwater	☐ Water infrastructure
☐ Drainage work	☐ Earthworks	☐ Sewage infrastructure
☐ Landscaping	☐ Signage	☒ Clearing vegetation
☐ Other – please specify:		

14.2) Is the operational work necessary to facilitate the creation of new lots? *(e.g. subdivision)*	
☐ Yes – specify number of new lots:	
☐ No	

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14.3) What is the monetary value of the proposed operational work? *(include GST, materials and labour)*

PART 4 – ASSESSMENT MANAGER DETAILS

15) Identify the assessment manager(s) who will be assessing this development application

State Assessment and Referral Agency (SARA)

16) Has the local government agreed to apply a superseded planning scheme for this development application?

- ☐ Yes – a copy of the decision notice is attached to this development application
- ☐ The local government is taken to have agreed to the superseded planning scheme request – relevant documents attached
- ☒ No

PART 5 – REFERRAL DETAILS

17) Does this development application include any aspects that have any referral requirements?
***Note**: A development application will require referral if prescribed by the* Planning Regulation 2017.

- ☐ No, there are no referral requirements relevant to any development aspects identified in this development application – proceed to Part 6

Matters requiring referral to the **Chief Executive of the *Planning Act 2016***:

- ☐ Clearing native vegetation
- ☐ Contaminated land *(unexploded ordnance)*
- ☐ Environmentally relevant activities (ERA) *(only if the ERA has not been devolved to a local government)*
- ☐ Fisheries – aquaculture
- ☐ Fisheries – declared fish habitat area
- ☐ Fisheries – marine plants
- ☐ Fisheries – waterway barrier works
- ☐ Hazardous chemical facilities
- ☐ Heritage places – Queensland heritage place *(on or near a Queensland heritage place)*
- ☒ Infrastructure-related referrals – designated premises
- ☐ Infrastructure-related referrals – state transport infrastructure
- ☐ Infrastructure-related referrals – State transport corridor and future State transport corridor
- ☐ Infrastructure-related referrals – State-controlled transport tunnels and future state-controlled transport tunnels
- ☐ Infrastructure-related referrals – near a state-controlled road intersection
- ☐ Koala habitat in SEQ region – interfering with koala habitat in koala habitat areas outside koala priority areas
- ☐ Koala habitat in SEQ region – key resource areas
- ☐ Ports – Brisbane core port land – near a State transport corridor or future State transport corridor
- ☐ Ports – Brisbane core port land – environmentally relevant activity (ERA)
- ☐ Ports – Brisbane core port land – tidal works or work in a coastal management district
- ☐ Ports – Brisbane core port land – hazardous chemical facility
- ☐ Ports – Brisbane core port land – taking or interfering with water
- ☐ Ports – Brisbane core port land – referable dams
- ☐ Ports – Brisbane core port land – fisheries
- ☐ Ports – Land within Port of Brisbane's port limits *(below high-water mark)*
- ☐ SEQ development area
- ☐ SEQ regional landscape and rural production area or SEQ rural living area – tourist activity or sport and recreation activity
- ☐ SEQ regional landscape and rural production area or SEQ rural living area – community activity
- ☐ SEQ regional landscape and rural production area or SEQ rural living area – indoor recreation
- ☐ SEQ regional landscape and rural production area or SEQ rural living area – urban activity
- ☐ SEQ regional landscape and rural production area or SEQ rural living area – combined use
- ☐ SEQ northern inter-urban break – tourist activity or sport and recreation activity

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☐ SEQ northern inter-urban break – community activity
☐ SEQ northern inter-urban break – indoor recreation
☐ SEQ northern inter-urban break – urban activity
☐ SEQ northern inter-urban break – combined use
☐ Tidal works or works in a coastal management district
☐ Reconfiguring a lot in a coastal management district or for a canal
☐ Erosion prone area in a coastal management district
☐ Urban design
☐ Water-related development – taking or interfering with water
☐ Water-related development – removing quarry material *(from a watercourse or lake)*
☐ Water-related development – referable dams
☐ Water-related development –levees *(category 3 levees only)*
☐ Wetland protection area

Matters requiring referral to the **local government:**
☐ Airport land
☐ Environmentally relevant activities (ERA) (*only if the ERA has been devolved to local government)*
☐ Heritage places – Local heritage places

Matters requiring referral to the **Chief Executive of the distribution entity or transmission entity:**
☒ Infrastructure-related referrals – Electricity infrastructure

Matters requiring referral to:
- The **Chief Executive of the holder of the licence**, if not an individual
- The **holder of the licence**, if the holder of the licence is an individual

☐ Infrastructure-related referrals – Oil and gas infrastructure

Matters requiring referral to the **Brisbane City Council:**
☐ Ports – Brisbane core port land

Matters requiring referral to the **Minister responsible for administering the *Transport Infrastructure Act 1994*:**
☐ Ports – Brisbane core port land *(where inconsistent with the Brisbane port LUP for transport reasons)*
☐ Ports – Strategic port land

Matters requiring referral to the **relevant port operator**, if applicant is not port operator**:**
☐ Ports – Land within Port of Brisbane's port limits *(below high-water mark)*

Matters requiring referral to the **Chief Executive of the relevant port authority:**
☐ Ports – Land within limits of another port *(below high-water mark)*

Matters requiring referral to the **Gold Coast Waterways Authority:**
☐ Tidal works or work in a coastal management district *(in Gold Coast waters)*

Matters requiring referral to the **Queensland Fire and Emergency Service:**
☐ Tidal works or work in a coastal management district *(involving a marina (more than six vessel berths))*

18) Has any referral agency provided a referral response for this development application?

☐ Yes – referral response(s) received and listed below are attached to this development application
☒ No

Referral requirement	Referral agency	Date of referral response

Identify and describe any changes made to the proposed development application that was the subject of the referral response and this development application, or include details in a schedule to this development application *(if applicable).*

PART 6 – INFORMATION REQUEST

19) Information request under the DA Rules

☒ I agree to receive an information request if determined necessary for this development application

☐ I do not agree to accept an information request for this development application

***Note**: By not agreeing to accept an information request I, the applicant, acknowledge:*

- *that this development application will be assessed and decided based on the information provided when making this development application and the assessment manager and any referral agencies relevant to the development application are not obligated under the DA Rules to accept any additional information provided by the applicant for the development application unless agreed to by the relevant parties*
- *Part 3 under Chapter 1 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules or*
- *Part 2under Chapter 2 of the DA Rules will still apply if the application is for state facilitated development*

Further advice about information requests is contained in the DA Forms Guide.

PART 7 – FURTHER DETAILS

20) Are there any associated development applications or current approvals? *(e.g. a preliminary approval)*

☐ Yes – provide details below or include details in a schedule to this development application

☒ No

List of approval/development application references	Reference number	Date	Assessment manager
☐ Approval ☐ Development application			
☐ Approval ☐ Development application			

21) Has the portable long service leave levy been paid? *(only applicable to development applications involving building work or operational work)*

☐ Yes – a copy of the receipted QLeave form is attached to this development application

☐ No – I, the applicant will provide evidence that the portable long service leave levy has been paid before the assessment manager decides the development application. I acknowledge that the assessment manager may give a development approval only if I provide evidence that the portable long service leave levy has been paid

☐ Not applicable *(e.g. building and construction work is less than $150,000 excluding GST)*

Amount paid	Date paid (dd/mm/yy)	QLeave levy number (A, B or E)
$		

22) Is this development application in response to a show cause notice or required as a result of an enforcement notice?

☐ Yes – show cause or enforcement notice is attached

☒ No

23) Further legislative requirements

Environmentally relevant activities

23.1) Is this development application also taken to be an application for an environmental authority for an **Environmentally Relevant Activity (ERA)** under section 115 of the *Environmental Protection Act 1994*?

☐ Yes – the required attachment (form ESR/2015/1791) for an application for an environmental authority accompanies this development application, and details are provided in the table below

☒ No

***Note**: Application for an environmental authority can be found by searching "ESR/2015/1791" as a search term at www.qld.gov.au. An ERA requires an environmental authority to operate. See www.business.qld.gov.au for further information.*

Proposed ERA number:		Proposed ERA threshold:	
Proposed ERA name:			

☐ Multiple ERAs are applicable to this development application and the details have been attached in a schedule to this development application.

Hazardous chemical facilities

23.2) Is this development application for a **hazardous chemical facility**?

☐ Yes – *Form 536: Notification of a facility exceeding 10% of schedule 15 threshold* is attached to this development application

☒ No

***Note**: See www.business.qld.gov.au for further information about hazardous chemical notifications.*

Clearing native vegetation

23.3) Does this development application involve **clearing native vegetation** that requires written confirmation that the chief executive of the *Vegetation Management Act 1999* is satisfied the clearing is for a relevant purpose under section 22A of the *Vegetation Management Act 1999*?

☐ Yes – this development application includes written confirmation from the chief executive of the *Vegetation Management Act 1999* (s22A determination)

☒ No

***Note**: 1. Where a development application for operational work or material change of use requires a s22A determination and this is not included, the development application is prohibited development.*
2. See https://www.qld.gov.au/environment/land/vegetation/applying for further information on how to obtain a s22A determination.

Environmental offsets

23.4) Is this development application taken to be a prescribed activity that may have a significant residual impact on a **prescribed environmental matter** under the *Environmental Offsets Act 2014*?

☐ Yes – I acknowledge that an environmental offset must be provided for any prescribed activity assessed as having a significant residual impact on a prescribed environmental matter

☒ No

***Note**: The environmental offset section of the Queensland Government's website can be accessed at www.qld.gov.au for further information on environmental offsets.*

Koala habitat in SEQ Region

23.5) Does this development application involve a material change of use, reconfiguring a lot or operational work which is assessable development under Schedule 10, Part 10 of the Planning Regulation 2017?

☐ Yes – the development application involves premises in the koala habitat area in the koala priority area

☐ Yes – the development application involves premises in the koala habitat area outside the koala priority area

☒ No

***Note**: If a koala habitat area determination has been obtained for this premises and is current over the land, it should be provided as part of this development application. See koala habitat area guidance materials at www.desi.qld.gov.au for further information.*

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Water resources

23.6) Does this development application involve **taking or interfering with underground water through an artesian or subartesian bore, taking or interfering with water in a watercourse, lake or spring, or taking overland flow water under the *Water Act 2000***?

☐ Yes – the relevant template is completed and attached to this development application and I acknowledge that a relevant authorisation or licence under the *Water Act 2000* may be required prior to commencing development

☒ No

***Note**: Contact the Department of Resources at www.resources.qld.gov.au for further information.*

DA templates are available from planning.statedevelopment.qld.gov.au. If the development application involves:

- *Taking or interfering with underground water through an artesian or subartesian bore: complete DA Form 1 Template 1*
- *Taking or interfering with water in a watercourse, lake or spring: complete DA Form1 Template 2*
- *Taking overland flow water: complete DA Form 1 Template 3.*

Waterway barrier works

23.7) Does this application involve **waterway barrier works?**

☐ Yes – the relevant template is completed and attached to this development application

☒ No

DA templates are available from planning.statedevelopment.qld.gov.au. For a development application involving waterway barrier works, complete DA Form 1 Template 4.

Marine activities

23.8) Does this development application involve **aquaculture, works within a declared fish habitat area or removal, disturbance or destruction of marine plants?**

☐ Yes – an associated *resource* allocation authority is attached to this development application, if required under the *Fisheries Act 1994*

☒ No

***Note**: See guidance materials at www.daf.qld.gov.au for further information.*

Quarry materials from a watercourse or lake

23.9) Does this development application involve the **removal of quarry materials from a watercourse or lake** under the *Water Act 2000?*

☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development

☒ No

***Note**: Contact the Department of Resources at www.resources.qld.gov.au and www.business.qld.gov.au for further information.*

Quarry materials from land under tidal waters

23.10) Does this development application involve the **removal of quarry materials from land under tidal water** under the *Coastal Protection and Management Act 1995?*

☐ Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development

☒ No

***Note**: Contact the Department of Environment, Science and Innovation at www.desi.qld.gov.au for further information.*

Referable dams

23.11) Does this development application involve a **referable dam** required to be failure impact assessed under section 343 of the *Water Supply (Safety and Reliability) Act 2008* (the Water Supply Act)?

☐ Yes – the 'Notice Accepting a Failure Impact Assessment' from the chief executive administering the Water Supply Act is attached to this development application

☒ No

***Note**: See guidance materials at www.resources.qld.gov.au for further information.*

Queensland Government

Tidal work or development within a coastal management district

23.12) Does this development application involve **tidal work or development in a coastal management district**?

☐ Yes – the following is included with this development application:
- ☐ Evidence the proposal meets the code for assessable development that is prescribed tidal work *(only required if application involves prescribed tidal work)*
- ☐ A certificate of title

☒ No

***Note**: See guidance materials at www.desi.qld.gov.au for further information.*

Queensland and local heritage places

23.13) Does this development application propose development on or adjoining a place entered in the **Queensland heritage register** or on a place entered in a local government's **Local Heritage Register**?

☐ Yes – details of the heritage place are provided in the table below

☒ No

***Note**: See guidance materials at www.desi.qld.gov.au for information requirements regarding development of Queensland heritage places.*

For a heritage place that has cultural heritage significance as a local heritage place and a Queensland heritage place, provisions are in place under the Planning Act 2016 that limit a local categorising instrument from including an assessment benchmark about the effect or impact of, development on the stated cultural heritage significance of that place. See guidance materials at www.planning.statedevelopment.qldgov.au for information regarding assessment of Queensland heritage places.

Name of the heritage place:		Place ID:	

Decision under section 62 of the *Transport Infrastructure Act 1994*

23.14) Does this development application involve new or changed access to a state-controlled road?

☐ Yes – this application will be taken to be an application for a decision under section 62 of the *Transport Infrastructure Act 1994* (subject to the conditions in section 75 of the *Transport Infrastructure Act 1994* being satisfied)

☒ No

Walkable neighbourhoods assessment benchmarks under Schedule 12A of the Planning Regulation

23.15) Does this development application involve reconfiguring a lot into 2 or more lots in certain residential zones (except rural residential zones), where at least one road is created or extended?

☐ Yes – Schedule 12A is applicable to the development application and the assessment benchmarks contained in schedule 12A have been considered

☒ No

***Note**: See guidance materials at www.planning.statedevelopment.qld.gov.au for further information.*

PART 8 – CHECKLIST AND APPLICANT DECLARATION

24) Development application checklist	
I have identified the assessment manager in question 15 and all relevant referral requirement(s) in question 17 ***Note**: See the Planning Regulation 2017 for referral requirements*	☒ Yes
If building work is associated with the proposed development, Parts 4 to 6 of *DA Form 2 – Building work details* have been completed and attached to this development application	☐ Yes ☒ Not applicable
Supporting information addressing any applicable assessment benchmarks is with the development application ***Note**: This is a mandatory requirement and includes any relevant templates under question 23, a planning report and any technical reports required by the relevant categorising instruments (e.g. local government planning schemes, State Planning Policy, State Development Assessment Provisions). For further information, see DA Forms Guide: Planning Report Template.*	☒ Yes
Relevant plans of the development are attached to this development application ***Note**: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.*	☒ Yes
The portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued *(see 21)*	☐ Yes ☒ Not applicable

Queensland Government

25) Applicant declaration
☒ By making this development application, I declare that all information in this development application is true and correct ☒ Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications from the assessment manager and any referral agency for the development application where written information is required or permitted pursuant to sections 11 and 12 of the *Electronic Transactions Act 2001* ***Note**: It is unlawful to intentionally provide false or misleading information.*
Privacy – Personal information collected in this form will be used by the assessment manager and/or chosen assessment manager, any relevant referral agency and/or building certifier (including any professional advisers which may be engaged by those entities) while processing, assessing and deciding the development application. All information relating to this development application may be available for inspection and purchase, and/or published on the assessment manager's and/or referral agency's website. Personal information will not be disclosed for a purpose unrelated to the *Planning Act 2016*, Planning Regulation 2017 and the DA Rules except where: • such disclosure is in accordance with the provisions about public access to documents contained in the *Planning Act 2016* and the Planning Regulation 2017, and the access rules made under the *Planning Act 2016* and Planning Regulation 2017; or • required by other legislation (including the *Right to Information Act 2009*); or • otherwise required by law. This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002.*

PART 9 – FOR COMPLETION OF THE ASSESSMENT MANAGER – FOR OFFICE USE ONLY

Date received: | Reference number(s):

Notification of engagement of alternative assessment manager	
Prescribed assessment manager	
Name of chosen assessment manager	
Date chosen assessment manager engaged	
Contact number of chosen assessment manager	
Relevant licence number(s) of chosen assessment manager	

QLeave notification and payment *Note: For completion by assessment manager if applicable*			
Description of the work			
QLeave project number			
Amount paid ($)		Date paid (dd/mm/yy)	
Date receipted form sighted by assessment manager			
Name of officer who sighted the form			

Appendix B Landowner consent

Company owner's consent to the making of a development application under the *Planning Act 2016*

I,

Ralph Craven

Director of the company mentioned below.

and I,

Ana Gomiero-Guthrie

Company Secretary of the company mentioned below.

Of

Kidston Gold Mines Pty Ltd (ACN 009 593 711)

the company being the owner of the premises identified as follows:

Lot 11 on SP345756

consent to the making of a development application under the *Planning Act 2016* by:

K3W Project Co. Pty Ltd as trustee for the K3W Project Trust

on the premises described above for:

A Material Change of Use for a Battery Energy Storage Facility and associated development, including a Reconfiguring a Lot for the creation of a new lot and associated easements.

Company Name and ACN: Kidston Gold Mines Pty Ltd (ACN 009 593 711)

..... Signature of Director	..... Signature of ~~Director~~/Secretary
16 March 2026 ..... Date	16 March 2026 ..... Date

The Planning Act 2016 is administered by the Department of Local Government, Infrastructure and Planning, Queensland Government.

Company owner's consent to the making of a development application under the *Planning Act 2016*

I,

Craig Francis

Director of the company mentioned below.

and I,

Ana Gomiero-Guthrie

Company Secretary of the company mentioned below.

Of

Kidston Solar Co Pty Ltd (ACN 614 272 954) as trustee for the Kidston Solar Property Trust

the company being the owner of the premises identified as follows:

Lot 12 on SP345756

consent to the making of a development application under the *Planning Act 2016* by:

K3W Project Co. Pty Ltd as trustee for the K3W Project Trust

on the premises described above for:

A Material Change of Use for a Battery Energy Storage Facility and associated development, including a Reconfiguring a Lot for the creation of a new lot and associated easements.

Company Name and ACN: Kidston Solar Co Pty Ltd (ACN 614 272 954)

..... Signature of Director	..... Signature of ~~Director~~/Secretary
16 March 2026 ..... Date	16 Match 2026 ..... Date

The Planning Act 2016 is administered by the Department of Local Government, Infrastructure and Planning, Queensland Government.

Appendix C Title Searches

Titles QUEENSLAND

Registration Confirmation Statement

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Lodger Code: EC 308

Title Reference:	**51391843**
Lodgement No:	6766307
Office:	E LODGE (CHQ)

POWERLINK QUEENSLAND
PO BOX 1193
VIRGINIA QLD 4014

This is the current status of the title as at 12:01 on 25/08/2025

ESTATE AND LAND

Estate in Fee Simple

LOT 10 SURVEY PLAN 345756
Local Government: ETHERIDGE

REGISTERED OWNER

Dealing No: 724227186 28/07/2025

QUEENSLAND ELECTRICITY TRANSMISSION CORPORATION LIMITED A.C.N. 078 849 233

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 40071490 (Lot 2 on SP 275047)
2. EASEMENT No 717620881 03/11/2016 at 10:27
burdening the land to
LOT 2 ON SP289310 OVER
EASEMENT B ON SP289310
3. EASEMENT No 719641183 25/09/2019 at 15:11
benefiting the land over
EASEMENT E ON SP311922
4. EASEMENT No 719659078 04/10/2019 at 10:02
benefiting the land over
EASEMENTS E TO P ON SP311921
5. EASEMENT No 719713200 04/11/2019 at 11:07
benefiting the land over
EASEMENTS F AND G ON SP304951

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
716101553	HERITGE SITE QUEENSLAND HERITAGE ACT 1992	28/10/2014 09:54	CURRENT

UNREGISTERED DEALINGS

NIL

DEALINGS REGISTERED

724227182	RELEASE	CP.02689ARUMFIE/F3 STATE
724227183	RELEASE	CP.02689ARUMFIE/F3 WESTPAC
724227184	SURRENDER	CP.02689ARUMFIE/F8 KID GO
724227185	SURRENDER	CP.02689ARUMFIE/F8 KID SO
724227186	TRANSFER	CP.02689ARUMFIE/F1

Title Reference:	51391843

Caution - Charges do not necessarily appear in order of priority

** End of Registration Confirmation Statement **

Registrar of Titles and Registrar of Water Allocations

Titles QUEENSLAND

Registration Confirmation Statement

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Lodger Code: EC 308

Title Reference:	**51391844**
Lodgement No:	6766307
Office:	E LODGE (CHQ)

POWERLINK QUEENSLAND
PO BOX 1193
VIRGINIA QLD 4014

This is the current status of the title as at 12:00 on 25/08/2025

ESTATE AND LAND

Estate in Fee Simple

LOT 11 SURVEY PLAN 345756
Local Government: ETHERIDGE

REGISTERED OWNER

Dealing No: 724227177 28/07/2025

KIDSTON GOLD MINES LIMITED A.C.N. 009 593 711

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 40071490 (Lot 2 on SP 275047)
2. EASEMENT IN GROSS No 717498224 07/09/2016 at 14:20
burdening the land
ERGON ENERGY CORPORATION LIMITED A.C.N. 087 646 062
over
EASEMENT A ON SP288222
3. EASEMENT No 717620881 03/11/2016 at 10:27
burdening the land to
LOT 2 ON SP289310 OVER
EASEMENT B ON SP289310
4. EASEMENT No 719641183 25/09/2019 at 15:11
benefiting the land over
EASEMENT E ON SP311922
5. EASEMENT No 719659078 04/10/2019 at 10:02
benefiting the land over
EASEMENTS E TO P ON SP311921
6. LEASE No 720714087 12/04/2021 at 10:46
KIDSTON HYDRO PROJECT CO PTY LTD A.C.N. 633 290 490 TRUSTEE
UNDER INSTRUMENT 720714087
OF THE WHOLE OF THE LAND
TERM: 01/03/2021 TO 28/02/2045 OPTION 5 YEARS
7. MORTGAGE No 720736697 20/04/2021 at 15:10
THE STATE OF QUEENSLAND
over
LEASE: 720714087

Title Reference: **51391844**

EASEMENTS, ENCUMBRANCES AND INTERESTS (Continued)

8. EASEMENT IN GROSS No 724227179 28/07/2025 at 10:23
burdening the land
QUEENSLAND ELECTRICITY TRANSMISSION CORPORATION LIMITED
A.C.N. 078 849 233
over
EASEMENT AP AND AV ON SP345756

9. EASEMENT IN GROSS No 724227181 28/07/2025 at 10:23
burdening the land
QUEENSLAND ELECTRICITY TRANSMISSION CORPORATION LIMITED
A.C.N. 078 849 233
over
EASEMENT AX ON SP345756

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
716101553	HERITGE SITE QUEENSLAND HERITAGE ACT 1992	28/10/2014 09:54	CURRENT

UNREGISTERED DEALINGS

NIL

DEALINGS REGISTERED

724227179	EAS IN GROSS	CP.02689ARUMFIE/F9 AP AND AV
724227181	EAS IN GROSS	CP.02689ARUMFIE/F9 AX

Caution - Charges do not necessarily appear in order of priority

** End of Registration Confirmation Statement **

Registrar of Titles and Registrar of Water Allocations

Titles QUEENSLAND

Registration Confirmation Statement

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Lodger Code: EC 308

Title Reference:	**51391845**
Lodgement No:	6766307
Office:	E LODGE (CHQ)

POWERLINK QUEENSLAND
PO BOX 1193
VIRGINIA QLD 4014

This is the current status of the title as at 12:00 on 25/08/2025

ESTATE AND LAND

Estate in Fee Simple

LOT 12 SURVEY PLAN 345756
Local Government: ETHERIDGE

REGISTERED OWNER

Dealing No: 724227177 28/07/2025

KIDSTON SOLAR CO PTY LTD A.C.N. 614 272 954 TRUSTEE
UNDER INSTRUMENT 717877652

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 40071490 (Lot 2 on SP 275047)
2. EASEMENT No 717620881 03/11/2016 at 10:27
benefiting the land over
EASEMENT B ON SP289310
3. MORTGAGE No 717877673 03/03/2017 at 15:39
NATIONAL AUSTRALIA BANK LIMITED A.B.N. 12 004 044 937
4. AMENDMENT No 719840630 10/01/2020 at 15:58
MORTGAGE: 717877673
5. TRANSFER No 719840631 10/01/2020 at 15:58
MORTGAGE: 717877673
WESTPAC ADMINISTRATION PTY LIMITED A.C.N. 008 617 203
6. LEASE No 717877676 03/03/2017 at 15:40
GENEX (SOLAR) PTY LTD A.C.N. 606 804 915
OF THE WHOLE OF THE LAND
TERM: 14/02/2017 TO 13/02/2050 OPTION NIL
7. EASEMENT No 719713200 04/11/2019 at 11:07
benefiting the land over
EASEMENTS F AND G ON SP304951
8. MORTGAGE No 719806131 18/12/2019 at 10:52
WESTPAC ADMINISTRATION PTY. LIMITED A.C.N. 008 617 203
9. EASEMENT IN GROSS No 724227178 28/07/2025 at 10:23
burdening the land
QUEENSLAND ELECTRICITY TRANSMISSION CORPORATION LIMITED
A.C.N. 078 849 233
over
EASEMENT AN ON SP345756

Title Reference: 51391845

EASEMENTS, ENCUMBRANCES AND INTERESTS (Continued)

10. EASEMENT IN GROSS No 724227180 28/07/2025 at 10:23
burdening the land
QUEENSLAND ELECTRICITY TRANSMISSION CORPORATION LIMITED
A.C.N. 078 849 233
over
EASEMENT AW ON SP345756

ADMINISTRATIVE ADVICES

Dealing	Type	Lodgement Date	Status
716101553	HERITGE SITE QUEENSLAND HERITAGE ACT 1992	28/10/2014 09:54	CURRENT

UNREGISTERED DEALINGS

NIL

DEALINGS REGISTERED

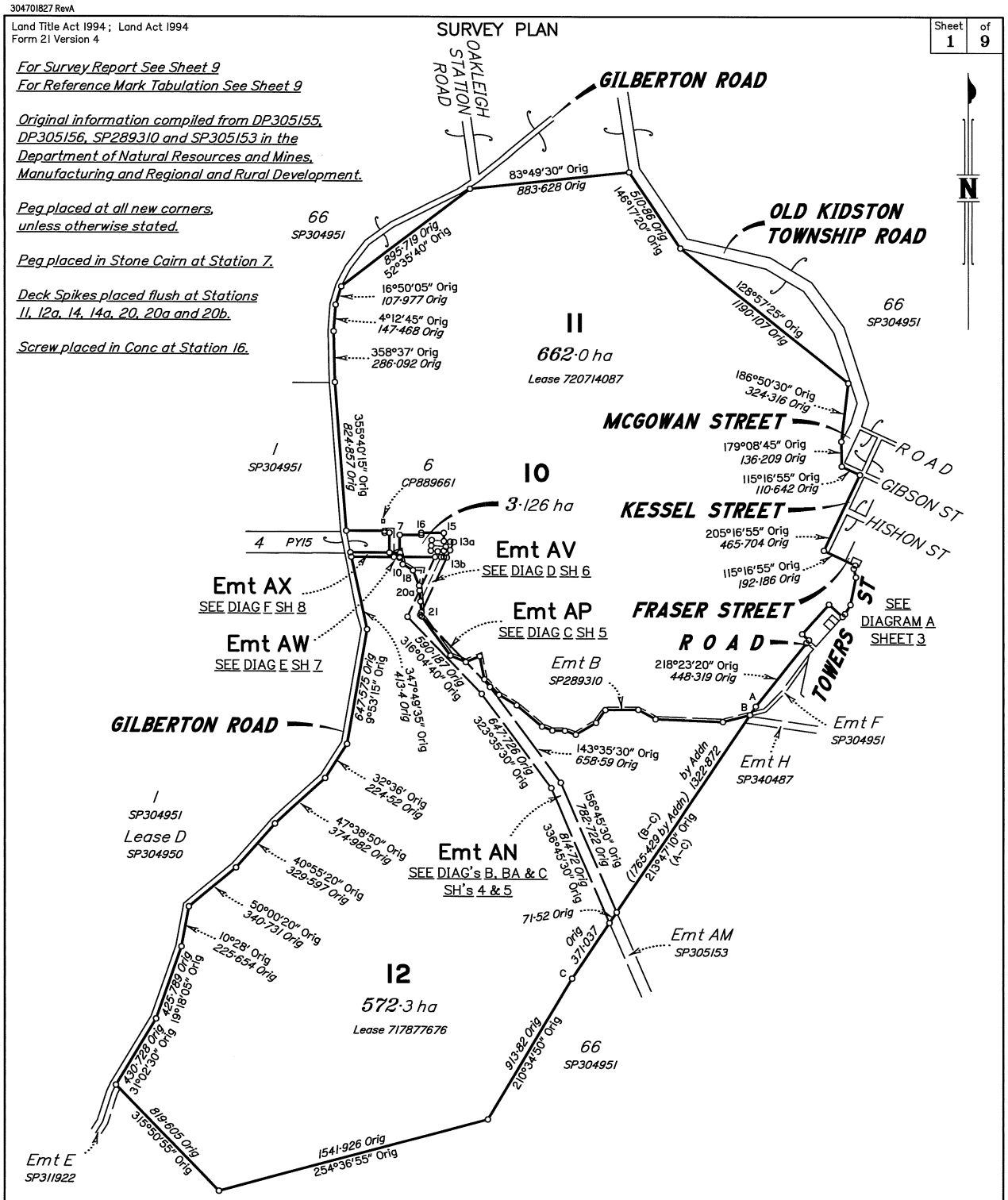
724227178	EAS IN GROSS	CP.02689ARUMFIE/F9 AN
724227180	EAS IN GROSS	CP.02689ARUMFIE/F9 AW

Caution - Charges do not necessarily appear in order of priority

** End of Registration Confirmation Statement **

Registrar of Titles and Registrar of Water Allocations

Appendix D Development Plans


304701827 RevA
Land Title Act 1994; Land Act 1994
Form 21 Version 4
SURVEY PLAN
Sheet 1 of 9
For Survey Report See Sheet 9
For Reference Mark Tabulation See Sheet 9
Original information compiled from DP305155, DP305156, SP289310 and SP305153 in the Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development.
Peg placed at all new corners, unless otherwise stated.
Peg placed in Stone Cairn at Station 7.
Deck Spikes placed flush at Stations 11, 12a, 14, 14a, 20, 20a and 20b.
Screw placed in Conc at Station 16.
OAKLEIGH STATION ROAD
GILBERTON ROAD
OLD KIDSTON TOWNSHIP ROAD
MCGOWAN STREET
KESSEL STREET
FRASER STREET
ROAD
GIBSON ST
HISHON ST
TOWERS ST
N
83°49'30" Orig 883·628 Orig
510·86 Orig 146°17'20" Orig
128°57'25" Orig 1190·107 Orig
186°50'30" Orig 324·316 Orig
179°08'45" Orig 136·209 Orig
115°16'55" Orig 110·642 Orig
205°16'55" Orig 465·704 Orig
115°16'55" Orig 192·186 Orig
218°23'20" Orig 448·319 Orig
143°35'30" Orig 658·59 Orig
156°45'30" Orig 782·722 Orig
336°45'30" Orig 814·72 Orig
(B–C) (1765·429 by Addn) 1322·872
213°47'10" Orig (A–C)
71·52 Orig
Orig 371·037
913·82 Orig 210°34'50" Orig
1541·926 Orig 254°36'55" Orig
819·625 Orig 315°50'55" Orig
430·728 Orig 31°02'30" Orig
425·789 Orig 19°18'05" Orig
10°28' Orig 225·654 Orig
50°00'20" Orig 340·731 Orig
40°55'20" Orig 329·597 Orig
47°38'50" Orig 374·982 Orig
32°36' Orig 224·52 Orig
647·525 Orig 9°53'15" Orig
413·4 Orig 347°49'35" Orig
590·187 Orig 316°04'40" Orig
647·726 Orig 323°35'30" Orig
355°40'15" Orig 824·857 Orig
895·719 Orig 52°35'40" Orig
16°50'05" Orig 107·977 Orig
4°12'45" Orig 147·468 Orig
358°37' Orig 286·092 Orig
11
662·0 ha
Lease 720714087
10
3·126 ha
12
572·3 ha
Lease 717877676
Emt AV SEE DIAG D SH 6
Emt AX SEE DIAG F SH 8
Emt AW SEE DIAG E SH 7
Emt AP SEE DIAG C SH 5
Emt AN SEE DIAG's B, BA & C SH's 4 & 5
Emt B SP289310
Emt E SP311922
Emt F SP304951
Emt H SP340487
Emt AM SP305153
SEE DIAGRAM A SHEET 3
Lease D SP304950
66 SP304951
1 SP304951
6 CP889661
4 PY15
Metres 0 1000m 2000m 3000m
State copyright reserved.
STANTEC AUSTRALIA PTY LTD (ACN 007 820 322) hereby certify that the land comprised in this plan was surveyed by the corporation, by Robert William PENTECOST, Cadastral Surveyor, for whose work the corporation accepts responsibility, and that the plan is accurate, that the said survey was performed in accordance with the Survey and Mapping Infrastructure Act 2003 and Surveyors Act 2003 and associated Regulations and Standards and that the said survey was completed on 19/05/2024.
Cadastral Surveyor (Authorised Representative)
Date 1st July 2025
Plan of Lots 10–12 & Easements AP, AV & AX in Lot 11 & Easements AN & AW in Lot 12
Cancelling Lots 1 & 2 on SP289310
LOCAL GOVERNMENT: ETHERIDGE SHIRE
LOCALITY: EINASLEIGH
Meridian: MGA Zone 55 vide DP305156
Survey Records: No
Scale: 1:20000
Format: STANDARD
SP345756

Land Title Act 1994 ; Land Act 1994
Form 21B Version 2

(Dealing No.)

WARNING : Folded or Mutilated Plans will not be accepted. Plans may be rolled. Information may not be placed in the outer margins.

Sheet 2 of 9

4. Lodged by

(Include address, phone number, email, reference, and Lodger Code)

1. Existing / Created

Title Reference	Description	New Lots	Road	Secondary Interests
51064944	Lot 1 on SP289310	10 and 11	–	Emts AP, AV and AX
51064945	Lot 2 on SP289310	10 and 12	–	Emts AN and AW

EXISTING LEASE ALLOCATIONS

Lease	Lots to be Encumbered
720714087	10 and 11
717877676	10 and 12

Easements AP, AV and AX affect Lease 720714087 as at 30/06/2025.

Easements AN and AW affect Lease 717877676 as at 30/06/2025.

The benefit of Easement 717620881 (Emt B on SP289310) is fully extinguished in Lot 10 in terms of s.87 Land Title Act 1994.

EXISTING ADMINISTRATIVE ADVICE ALLOCATIONS

Administrative Advice	Lots to be Encumbered
716101553 (Heritage Site)	10–12

ENCUMBRANCE EASEMENT ALLOCATIONS

Easement	Lots to be Encumbered
717498224 (Emt A on SP288222)	11
717620881 (Emt B on SP289310)	10 and 11

MORTGAGE ALLOCATIONS

Mortgage	Lots Fully Encumbered	Lots Partially Encumbered
720736697	11	10
717877673	12	10
719806131	12	10

BENEFIT EASEMENT ALLOCATIONS

Easement	Lots Fully Benefited	Lots Partially Benefited
717620881 (Emt B on SP289310)	12	–
719713200 (Emts F & G on SP304951)	10 and 12	–
719641183 (Emt E on SP311922)	10 and 11	–
719659078 (Emts E to P on SP311921)	10 and 11	–
722437410 (Emt H on SP340487)	Lease 720708809	–

Lots	Orig
10–12	Lot 2 on SP275047

2. Orig Grant Allocation :

3. References :
Dept File :
Local Govt :
Surveyor : 304701827 RevA MLC

5. Passed & Endorsed :
By :
Date :
Signed :
Designation :

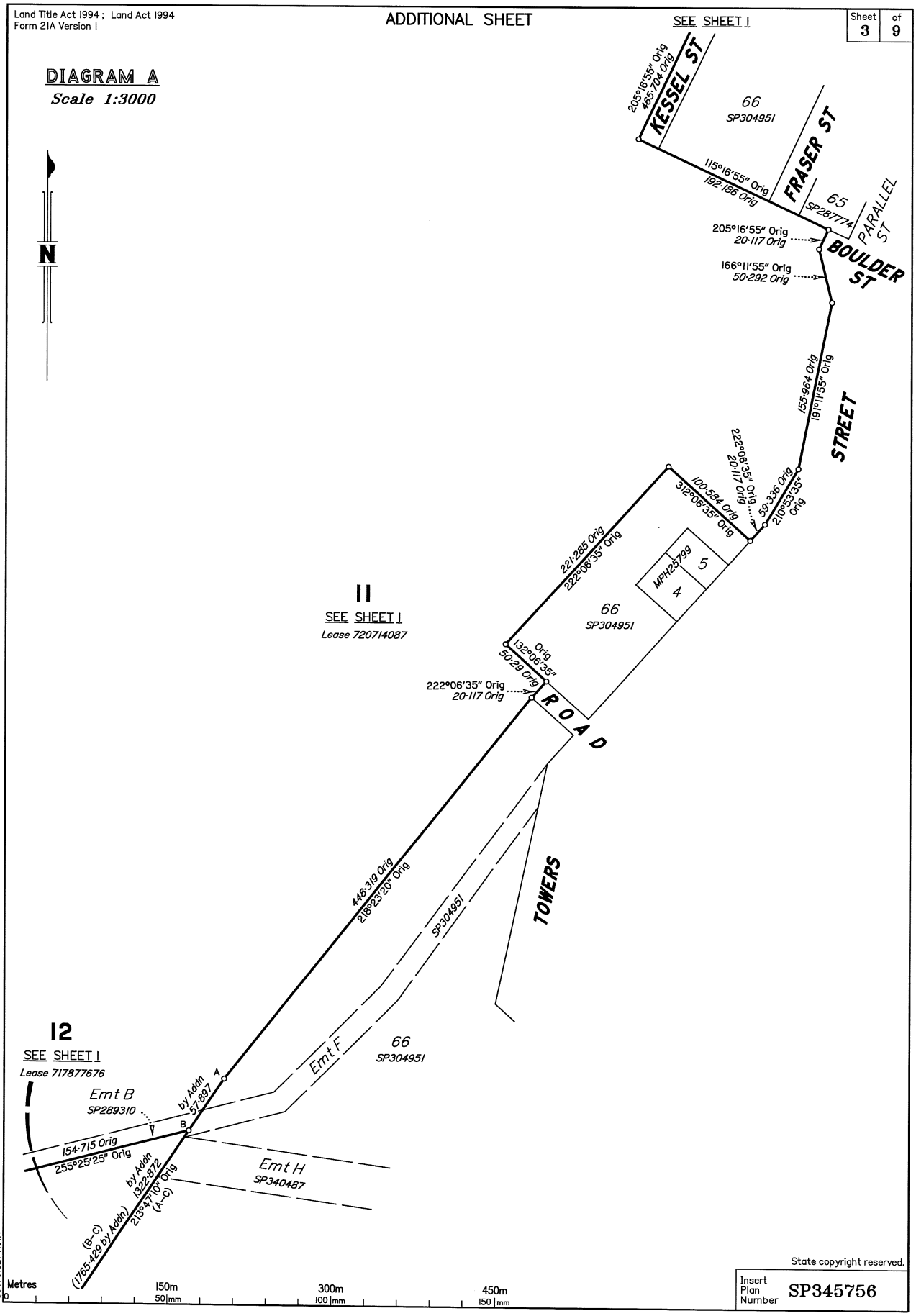
6. Building Format Plans only.
I certify that :
* As far as it is practical to determine, no part of the building shown on this plan encroaches onto adjoining lots or road;
* Part of the building shown on this plan encroaches onto adjoining * lots and road

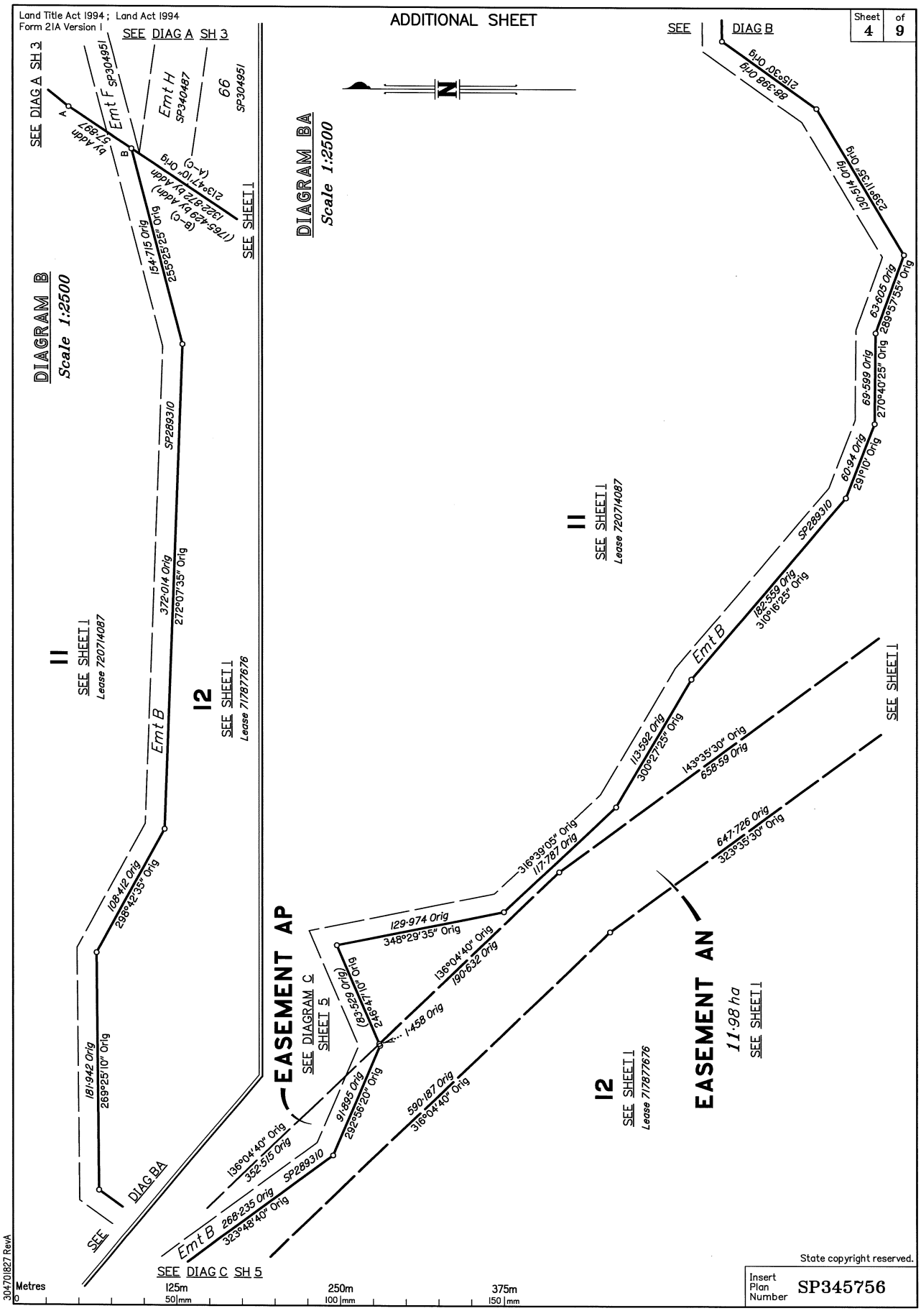
..... * .....
Cadastral Surveyor/Director * Date
* delete words not required

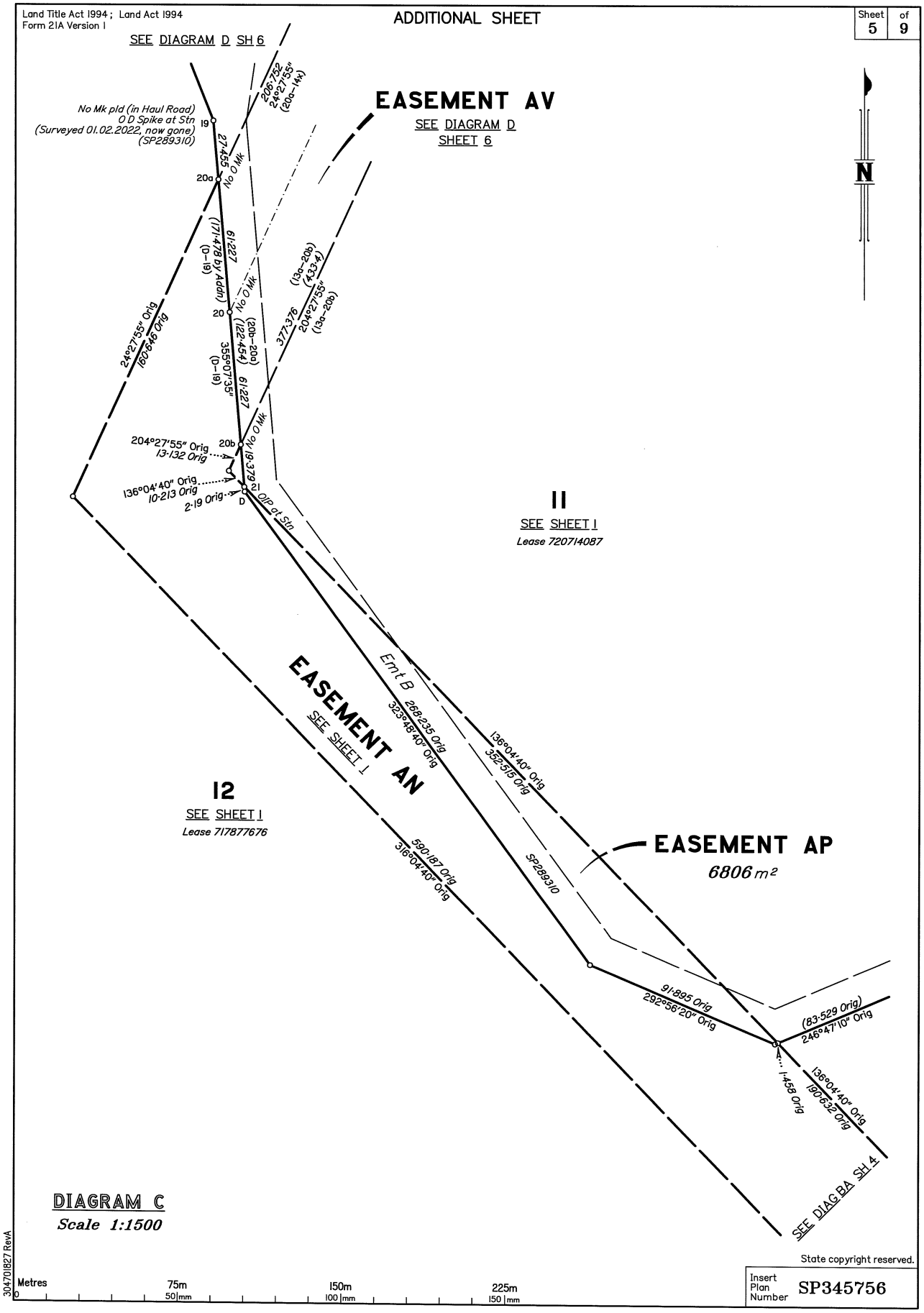
7. Lodgement Fees :

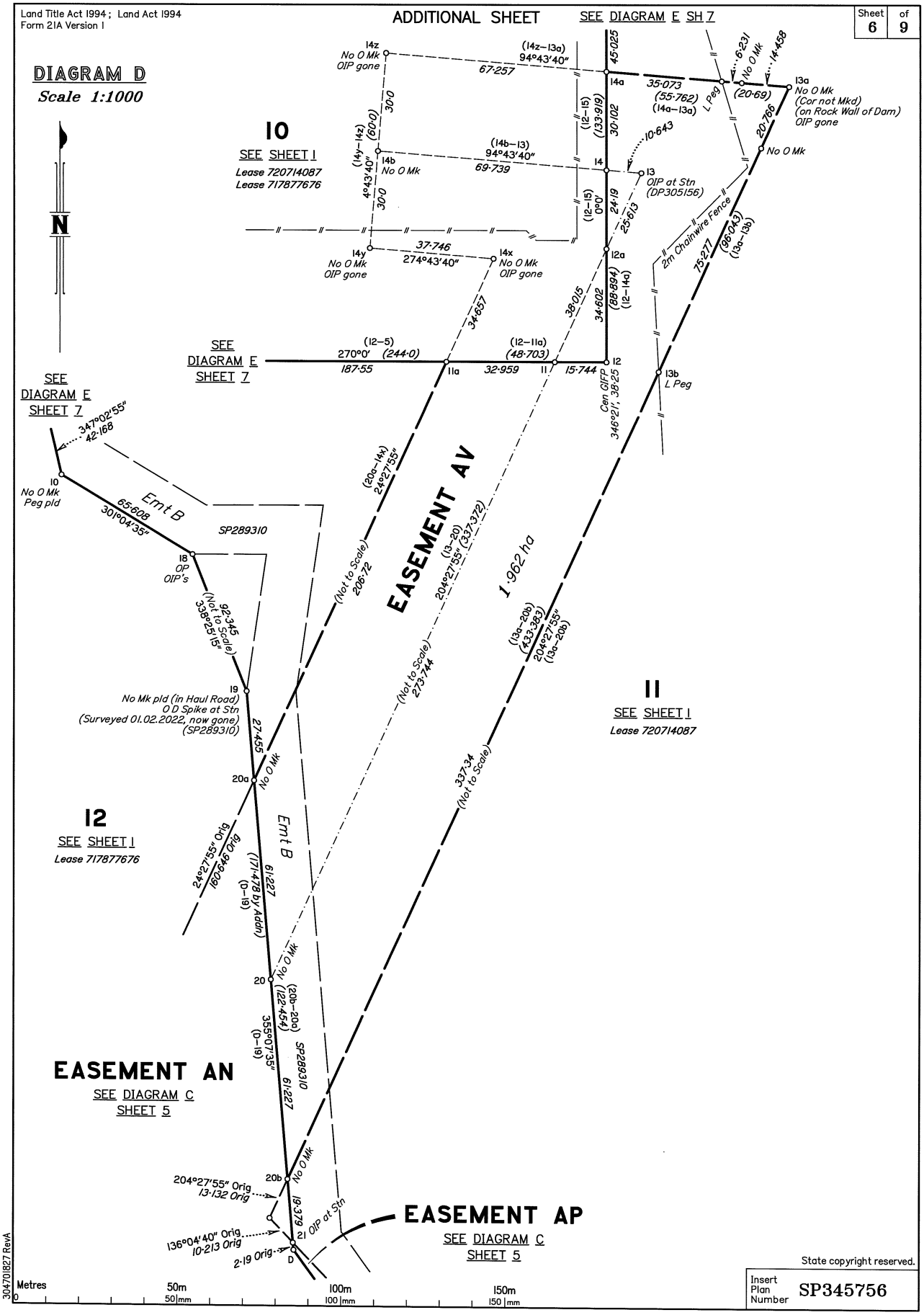
Survey Deposit	$.....
Lodgement	$.....
.....New Titles	$.....
Photocopy	$.....
Postage	$.....
TOTAL	$.....

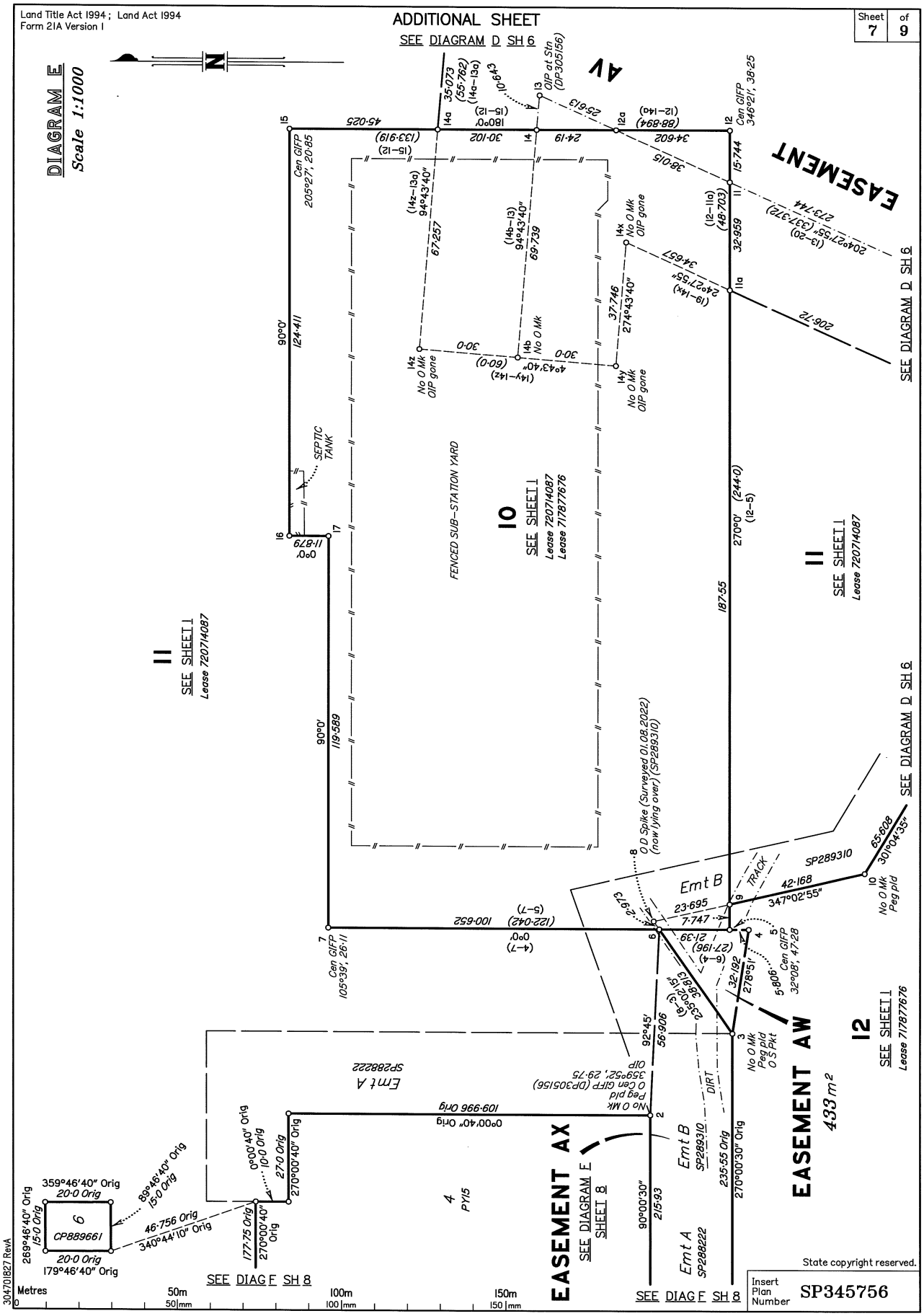
8. Insert Plan Number SP345756

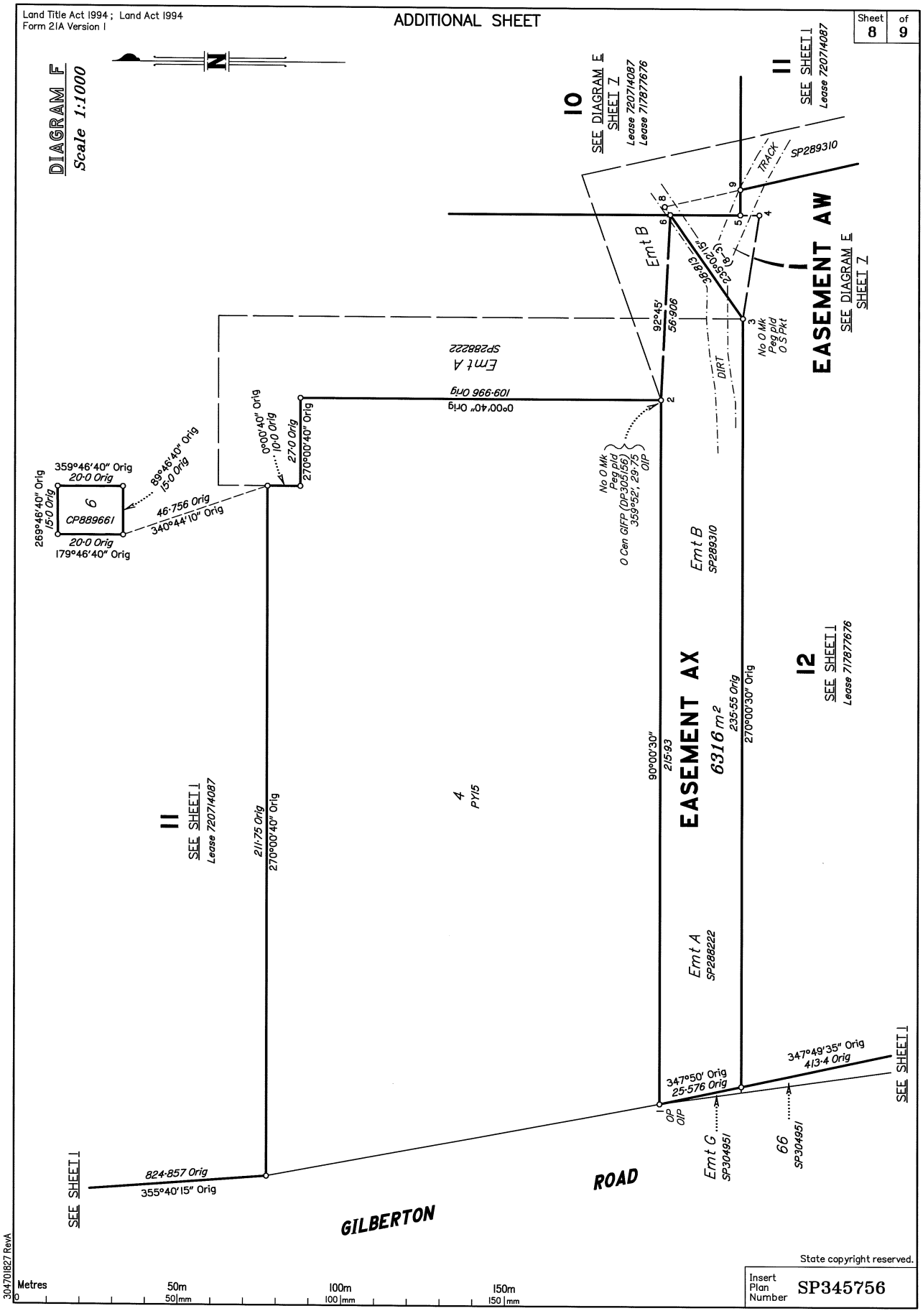

Land Title Act 1994; Land Act 1994
Form 21A Version 1
ADDITIONAL SHEET
Sheet 3 of 9
DIAGRAM A
Scale 1:3000
SEE SHEET 1
KESSEL ST
205°16'55" Orig
465·704 Orig
66
SP304951
FRASER ST
115°16'55" Orig
192·186 Orig
65
SP287774
PARALLEL ST
205°16'55" Orig
20·117 Orig
BOULDER ST
166°11'55" Orig
50·292 Orig
155·964 Orig
191°11'55" Orig
STREET
222°06'35" Orig
20·117 Orig
100·584 Orig
312°06'35" Orig
59·336 Orig
210°53'35" Orig
221·285 Orig
222°06'35" Orig
MPH25799
5
4
66
SP304951
11
SEE SHEET 1
Lease 720714087
132°06'35" Orig
50·29 Orig
222°06'35" Orig
20·117 Orig
ROAD
448·319 Orig
218°23'20" Orig
TOWERS
SP304951
12
SEE SHEET 1
Lease 717877676
Emt B
SP289310
by Addn
57·897
A
B
154·715 Orig
255°25'25" Orig
by Addn
132·872
213°47'10" Orig
(A–C)
(B–C)
(1765·429 by Addn)
Emt F
66
SP304951
Emt H
SP340487
Metres
0
150m
50 mm
300m
100 mm
450m
150 mm
State copyright reserved.
Insert Plan Number
SP345756
3047018Z7 RevA


Land Title Act 1994; Land Act 1994
Form 21A Version 1
ADDITIONAL SHEET
Sheet 4 of 9
SEE DIAG A SH 3
SEE DIAG B
SEE DIAG C SH 5
DIAGRAM B
Scale 1:2500
DIAGRAM BA
Scale 1:2500
EASEMENT AP
SEE DIAGRAM C SHEET 5
EASEMENT AN
11.98 ha
SEE SHEET 1
SEE SHEET 1 Lease 720714087
SEE SHEET 1 Lease 717877676
Emt F SP304951
Emt H SP340487
66 SP304951
Emt B
SP289310
154.715 Orig 255°25'25" Orig
372.014 Orig 272°07'35" Orig
108.412 Orig 288°42'35" Orig
181.942 Orig 269°25'10" Orig
DIAG BA
268.235 Orig 323°48'40" Orig
352.515 Orig 136°04'40" Orig
91.895 Orig 292°56'20" Orig
(93.529 Orig) 216°47'10" Orig
1.458 Orig
129.974 Orig 348°29'35" Orig
190.632 Orig 136°04'40" Orig
117.787 Orig 316°39'05" Orig
113.592 Orig 300°27'25" Orig
658.59 Orig 143°35'30" Orig
647.726 Orig 323°35'30" Orig
590.187 Orig 316°04'40" Orig
182.559 Orig 310°16'25" Orig
60.94 Orig 291°10' Orig
69.599 Orig 270°40'25" Orig
63.605 Orig 289°57'55" Orig
239°11'35" Orig
130.514 Orig
88.398 Orig
215°30' Orig
State copyright reserved.
Insert Plan Number SP345756
Metres
0
125m 50|mm
250m 100|mm
375m 150|mm
3047016827 RevA


Land Title Act 1994; Land Act 1994
Form 21A Version 1
ADDITIONAL SHEET
Sheet 5 of 9
SEE DIAGRAM D SH 6
EASEMENT AV
SEE DIAGRAM D
SHEET 6
No Mk pld (in Haul Road)
O D Spike at Stn
(Surveyed 01.02.2022, now gone)
(SP289310)
19
20a
20
20b
21
D
No O Mk
Old d Stn
206°27'55" Orig
(20a-1Ax)
27.455
61.227
(171.478 by Addn)
(D-19)
24°27'55" Orig
160.646 Orig
355°07'35"
(D-19)
(122.454)
(20b-20a)
(13a-20b)
(43.4)
377.376
204°27'55"
204°27'55" Orig
13.132 Orig
136°04'40" Orig
10.213 Orig
2.19 Orig
191.379
11
SEE SHEET 1
Lease 720714087
12
SEE SHEET 1
Lease 717877676
EASEMENT AN
SEE SHEET 1
Emt B
268.235 Orig
323°48'40" Orig
136°04'40" Orig
352°51'5 Orig
590.187 Orig
316°04'40" Orig
SP289310
EASEMENT AP
6806 m²
91.895 Orig
292°56'20" Orig
(83.529 Orig)
246°47'10" Orig
1.458 Orig
136°04'40" Orig
190°32 Orig
SEE DIAG BA SH 4
DIAGRAM C
Scale 1:1500
N
Metres
0
75m
50|mm
150m
100|mm
225m
150|mm
State copyright reserved.
Insert Plan Number SP345756
3047018Z7 RevA


Land Title Act 1994; Land Act 1994
Form 21A Version 1
ADDITIONAL SHEET
SEE DIAGRAM E SH 7
Sheet 6 of 9
DIAGRAM D
Scale 1:1000
N
10
SEE SHEET 1
Lease 720714087
Lease 717877676
12
SEE SHEET 1
Lease 717877676
11
SEE SHEET 1
Lease 720714087
EASEMENT AV
1.962 ha
EASEMENT AN
SEE DIAGRAM C SHEET 5
EASEMENT AP
SEE DIAGRAM C SHEET 5
SEE DIAGRAM E SHEET 7
SEE DIAGRAM E SHEET 7
SP289310
Emt B
Emt B
14z No O Mk OIP gone
14a
14b No O Mk
14 OIP at Stn (DP305156)
14y No O Mk OIP gone
14x No O Mk OIP gone
13a No O Mk (Cor not Mkd) (on Rock Wall of Dam) OIP gone
13b L Peg
12a
12
11a
11
10 No O Mk Peg pld
18 OP OIP's
19 No Mk pld (in Haul Road) O D Spike at Stn (Surveyed 01.02.2022, now gone) (SP289310)
20a No O Mk
20 No O Mk
20b No O Mk
21 OIP at Stn
D
2m Chainwire Fence
Cen GIPP
(Not to Scale)
State copyright reserved.
Metres
0
50m
100m
150m
Insert Plan Number SP345756
3047018827 RevA


Land Title Act 1994 ; Land Act 1994
Form 21A Version 1
ADDITIONAL SHEET
SEE DIAGRAM D SH 6
Sheet 7 of 9
DIAGRAM E
Scale 1:1000
EASEMENT
SEE DIAGRAM D SH 6
SEE SHEET 1
Lease 720714087
Lease 717877676
FENCED SUB-STATION YARD
SEPTIC TANK
EASEMENT AX
SEE DIAGRAM F SHEET 8
EASEMENT AW
433m²
Emt A SP288222
Emt B SP289310
SP289310
TRACK
DIRT
SEE DIAG F SH 8
Metres
State copyright reserved.
Insert Plan Number
SP345756
30470827 RevA


Land Title Act 1994; Land Act 1994
Form 21A Version 1
ADDITIONAL SHEET
Sheet 8 of 9
DIAGRAM F
Scale 1:1000
N
10
SEE DIAGRAM E SHEET Z
Lease 720714087
Lease 717877676
11
SEE SHEET 1
Lease 720714087
SP289310
TRACK
EASEMENT AW
SEE DIAGRAM E SHEET Z
Emt B
23.38.813
8°50'0"15"
92°45'
56·906
No O Mk Peg pld O S Pkt
DIRT
Emt A
SP288222
109·996 Orig
0°00'40" Orig
0°00'40" Orig
10·0 Orig
27·0 Orig
270°00'40" Orig
359°46'40" Orig
20·0 Orig
89°46'40" Orig
15·0 Orig
269°46'40" Orig
15·0 Orig
6
CP889661
46·756 Orig
340°44'10" Orig
20·0 Orig
179°46'40" Orig
No O Mk Peg pld O Cen GIFP (DP305156) 359°52', 29·75 OIP
Emt B
SP289310
EASEMENT AX
6316 m2
235·55 Orig
270°00'30" Orig
90°00'30"
215·93
12
SEE SHEET 1
Lease 717877676
11
SEE SHEET 1
Lease 720714087
211·75 Orig
270°00'40" Orig
4
PY15
Emt A
SP288222
347°49'35" Orig
413·4 Orig
347°50' Orig
25·576 Orig
OP
OIP
Emt G
SP304951
66
SP304951
SEE SHEET 1
824·857 Orig
355°40'15" Orig
SEE SHEET 1
ROAD
GILBERTON
State copyright reserved.
Metres
0
50m
50 mm
100m
100 mm
150m
150 mm
Insert Plan Number
SP345756
3047018Z7 RevA

Land Title Act 1994; Land Act 1994
Form 21A Version 1

ADDITIONAL SHEET

Sheet 9 of 9

REFERENCE MARKS

STN	TO	ORIGIN	BEARING	DIST
1	OIP	SP288222	265°44'30"	1·0
2	OIP	SP288222	108°06'30"	0·91
3	O Star Picket	SP289310	163°51'30"	5·07
4	Pin		212°09'30"	5·202
5	Deck Spike (flush)		29°57'50"	44·22
7	Pin		359°06'50"	14·123
12	Pin		163°30'	1·329
12	Deck Spike (flush)		348°44'40"	35·403
13a	OIP gone	DP305156	242°11'20"	13·156
13a	Pin		237°02'15"	20·758
14x	OIP gone	DP305156	199°17'	0·853
14y	OIP gone	DP305156	159°39'	1·281
14z	OIP gone	DP305156	356°07'	0·733
15	Nail in Conc Base of P Pole		147°09'40"	15·277
15	Deck Spike (flush)		130°36'15"	15·589
17	Pin		204°37'30"	2·736
18	OIP in Conc	SP289310	91°40'05"	32·21
18	Pin in Conc		91°50'30"	32·213
18	Pin in Conc		91°15'05"	42·221

SURVEY REPORT:

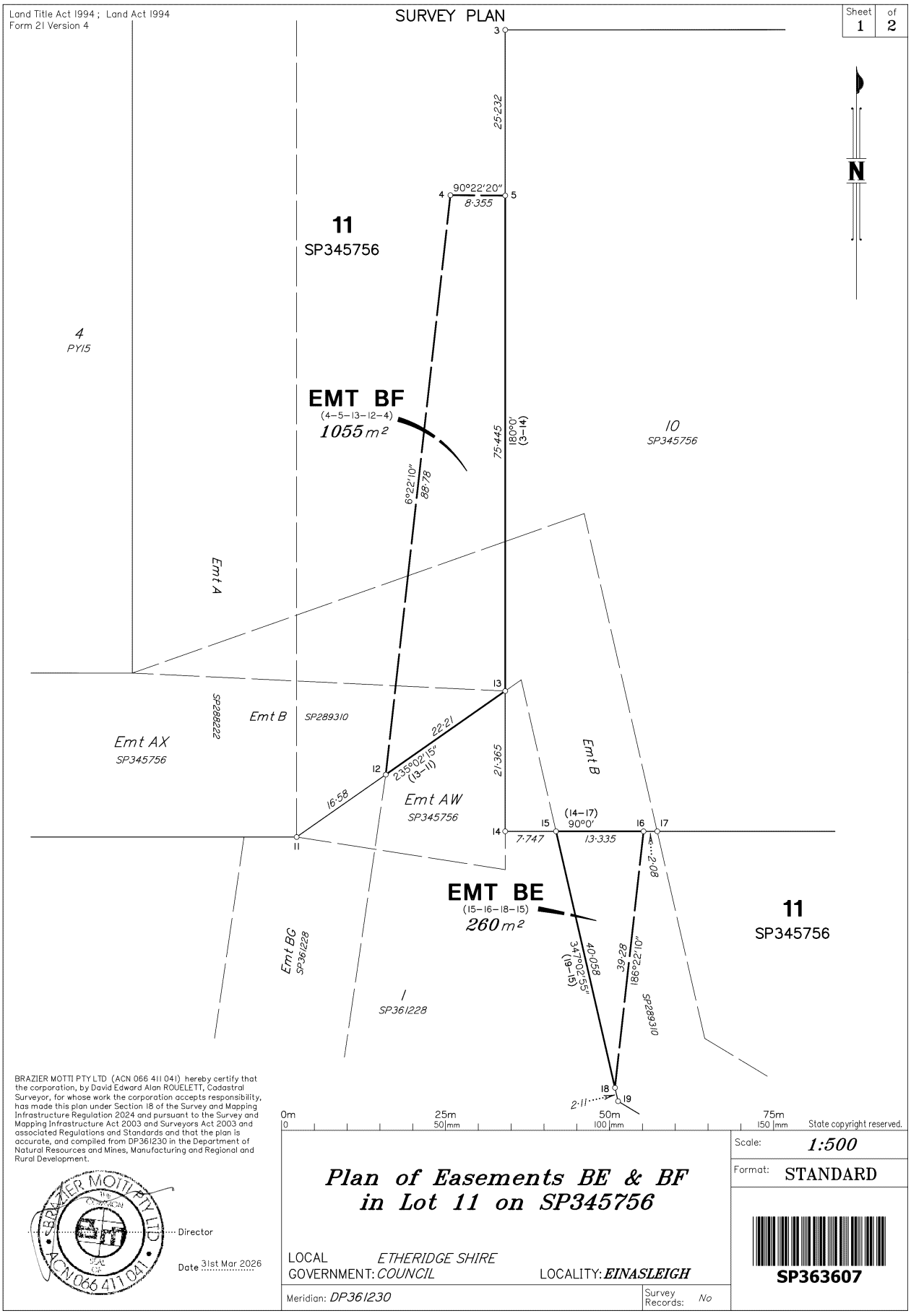
- The purpose of the survey is to excise an area from Lots 1 and 2 on SP289310.
- Plans searched: DP305155, DP305156, SP288222, SP289310 and SP305153.
- Existing DP's 305155 and 305156 remain unregistered. As the underlying Lots are affected by this plan, Easements AN and AP on these DP's have been compiled on this plan. DP305155 and DP305156 will never register.
- Good agreement with DP305155, DP305156, SP288222 and SP289310 was found throughout the survey.
- Lines 8–10–18 have been proportionally reinstated.
- Easements AX and AW have been positioned to include existing access tracks to the Sub–Station from Gilberton Road.
- To obtain legal access to Gilberton Road, a new easement agreement covering Emt G on SP304951 may be required to benefit Lot 10.
- Easements AN, AP and AV contain the new powerline structures.
- The western boundary of Lot 10 has been positioned to be clear of the existing underground fibre optic cables.

3047018Z7 RevA

0 50|mm 100|mm 150|mm

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Insert Plan Number SP345756


Land Title Act 1994 ; Land Act 1994
Form 21 Version 4
SURVEY PLAN
Sheet 1 of 2
N
11
SP345756
4
PY15
EMT BF
(4–5–13–12–4)
1055 m²
10
SP345756
Emt A
Emt B
SP289310
SP288222
Emt AX
SP345756
Emt AW
SP345756
Emt B
EMT BE
(15–16–18–15)
260 m²
11
SP345756
Emt BG
SP361228
1
SP361228
25·232
8·355
75·445
180°0'
(3–14)
88·78
6°22'10"
22·21
235°02'15"
(13–11)
16·58
21·365
7·747
(14–17)
90°0'
13·335
2·08
40·058
347°02'55"
(16–15)
39·28
186°22'10"
2·11
0m
25m
50m
75m
BRAZIER MOTTI PTY LTD (ACN 066 411 041) hereby certify that the corporation, by David Edward Alan ROUELETT, Cadastral Surveyor, for whose work the corporation accepts responsibility, has made this plan under Section 18 of the Survey and Mapping Infrastructure Regulation 2024 and pursuant to the Survey and Mapping Infrastructure Act 2003 and Surveyors Act 2003 and associated Regulations and Standards and that the plan is accurate, and compiled from DP361230 in the Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development.
BRAZIER MOTTI PTY LTD ACN 066 411 041
Director
Date 31st Mar 2026
State copyright reserved.
Plan of Easements BE & BF in Lot 11 on SP345756
LOCAL GOVERNMENT: ETHERIDGE SHIRE COUNCIL
LOCALITY: EINASLEIGH
Meridian: DP361230
Survey Records: No
Scale: 1:500
Format: STANDARD
SP363607

Land Title Act 1994 ; Land Act 1994
Form 21B Version 2

(Dealing No.)

WARNING : Folded or Mutilated Plans will not be accepted. Plans may be rolled. Information may not be placed in the outer margins.

Sheet 2 of 2

4. Lodged by

(Include address, phone number, email, reference, and Lodger Code)

1. Existing		Created		
Title Reference	Description	New Lots	Road	Secondary Interests
51391844	Lot 11 on SP345756	———	———	Emts BE & BF

This plan to register after SP361228.

Easements BE & BF do affect Lease 720714087. Dated 30/03/2026.

6. Building Format Plans only.

I certify that :

* As far as it is practical to determine, no part of the building shown on this plan encroaches onto adjoining lots or road;

* Part of the building shown on this plan encroaches onto adjoining * lots and road

Cadastral Surveyor/Director* Date

*delete words not required

Lots	Orig

2. Orig Grant Allocation :

3. References :

Dept File :

Local Govt :

Surveyor : 43570/005-02 – 43570_005A.dwg – WCHO – 03/2026 – V0

5. Passed & Endorsed :

By : BRAZIER MOTTI PTY LTD

Date : 31st Mar 2026

Signed :

Designation : Cadastral Surveyor

7. Lodgement Fees :

Survey Deposit	$
Lodgement	$
New Titles	$
Photocopy	$
Postage	$
TOTAL	$

8. Insert Plan Number SP363607

Appendix E Environmental Assessment Report

12 February 2026

James Birkmanis
Senior Project Manager
Genex Power Limited
Suite 12.03 L 12
35 Clarence Street
SYDNEY NSW 2000

James Birkmanis <jb@genexpower.com.au>

Dear James

Re: 250711 – Kidston Battery Energy Storage System Ecological Assessment

The Kidston Battery Energy Storage System (BESS) Project (the Project) is proposed for development on Lot 12 on SP345756, near the town of Kidston within the Etheridge Shire Council. The purpose of this letter is to summarise and present the findings of ecological assessments undertaken within the area proposed for development, in order to assess potential impacts to any areas of high ecological value that may be present and provide for avoidance and/or mitigation measures where necessary.

Context

The area proposed for development is located within the northern section of the Kidston Solar Farm (Lot 12 on SP345756). For the purpose of this assessment, the following terms are used:

- Study Area: The Study Area consists of the northern area of Lot 12 on SP345756, which is proposed to be reconfigured into a separate lot, and the adjoining grid connection easement areas. The Study Area represents the proposed parcel of land on which the Project will be located and the wider investigation area for ecology. The Study Area has a total area of 6.47 ha.
- Development Footprint: The Development Footprint is the disturbance footprint associated with the Project and is located within the Study Area. The Development Footprint consists of infrastructure required for construction of the BESS including grid connections. All disturbance will be completely contained within the Development Footprint. The Development Footprint has a total area of 2.78 ha.

The Study Area was previously assessed as part of the Kidston Hybrid Project, which included a much larger area than the current Project. The Kidston Hybrid Project involved extensive survey effort across multiple years, however, only assessments and findings relevant to the Study Area are presented herein. In particular, the 'BESS Survey Summary Final V2.0' report presents the results of the August 2024 survey (see Table 2 below), and is included in Appendix C of this document.

A map showing the location of the Study Area and Development Footprint is provided in Appendix A.

Ecological assessments undertaken

Desktop and field-based ecological assessments have been undertaken to characterise ecological values within the Study Area and surrounds. These are summarised in Table 1.

Townsville
Level 4, 67-75 Denham Street Townsville QLD 4810
T. (07) 4410 9000 **E:** ngh@nghconsulting.com.au
W: nghconsulting.com.au **FYFE ABN:** 57 008 116 130

Table 1 Ecological assessments relevant to the Project

Assessment	Scope	Date
Desktop assessment	Several desktop assessments have been undertaken to identify ecological values potentially present within and surrounding the larger Kidston Hybrid Project (which also included the Study Area). The desktop assessments involved a review of relevant environmental databases, maps, legislation, species-specific guidance and wildlife records. Sources reviewed included: • Department of Climate Change, Energy, the Environment and Water (DCCEEW) Protected Matters Search Tool • Department of the Environment, Tourism, Science and Innovation (DETSI) Environmental reports • Atlas of Living Australia (ALA) and WildNet records • DCCEEW's Species Profile and Threats Database for species-specific guidance • Queensland Globe spatial layers and earth imagery • Etheridge Shire Planning Scheme maps The most recent desktop assessment was undertaken in January 2026 and was specific to the Study Area and its surrounding area (Appendix B).	May 2021, July 2022, June 2023, November 2024, May 2025 and January 2026.
BESS ecological assessment	Ecological assessment of the Study Area proposed for the BESS to identify environmental values and constraints present. Surveys involved vegetation ground-truthing, habitat assessments, weed surveys, and incidental observations.	7 – 8 August 2024
Walkover surveys	Walkover surveys of the broader Kidston Hybrid Project were undertaken to gain a thorough understanding of environmental values and constraints present. These involved vegetation ground-truthing, threatened flora surveys, and threatened fauna surveys (active searches, diurnal bird surveys, ultrasonic microbat detection, remote cameras, and habitat assessments). This walkover survey included the Study Area and surrounding area.	4-11 October 2023
Preliminary flora and fauna survey	Preliminary site assessment to identify ecological constraints within the broader Kidston Hybrid Project area. Assessments included rapid assessments, quaternary vegetation surveys, threatened flora surveys, and threatened fauna surveys.	13-18 July 2021 23-30 November 2021

Results

Vegetation and habitat features

The Study Area consists of previously disturbed and cleared land associated with the historical Kidston gold mine and is wholly mapped as non-remnant in the vegetation management regional ecosystem map by the Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development

(DNRMMRRD) (see Appendix B). Field surveys confirmed vegetation within the Study Area is in poor condition and mostly consisting of a non-remnant revegetation site established as part of mine rehabilitation activities. The revegetation site is degraded by clearing, edge effects, weeds and grazing. The species incorporated into the revegetation site are not typical of any local regional ecosystem, and is not progressing to remnant status. Several tree species planted on the site do not occur naturally in the Kidston region. Small patches characteristic of regional ecosystem (RE) 9.11.15a (woodland to low open woodland of *Eucalyptus crebra*) were present in the southern portion of the Study Area. These areas of eucalypt woodland offer some habitat value to wildlife with hollow-bearing trees, stick nests and woody debris observed. Whereas non-remnant areas had limited or no habitat values due to their degraded nature.

Two waterbodies were observed within the Study Area, an artificial drainage line (permanent water source) running from east to west in the southern section of the Study Area, and an artificial pond (seasonal water source) located in the south-west of the Study Area. No waterbodies mapped in the vegetation management watercourse and drainage feature map occur in the Study Area.

Details of ground-truthed vegetation in the Study Area and Development Footprint include areas (Table 2) and location (Appendix A). Details of the August 2024 field assessment are provided in the BESS Survey Summary Final V2.0 report (Appendix C).

Table 2 Ground-truthed vegetation within the Study Area and Development Footprint

Vegetation	Study Area (ha)	Development Footprint (ha)	Percentage within the Development Footprint (%)
Non-remnant	6.16	2.78	45.13
RE 9.11.15a (least concern)	0.31	0.00	0.00
Total	**6.47**	**2.78**	

Threatened species

The most recent desktop assessment (Appendix B) identified 29 threatened and/or migratory species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and/or *Nature Conservation Act 1992* (NC Act) with potential to occur in a 10km buffer surrounding the Study Area.

Field surveys undertaken for the Kidston Hybrid Project confirmed the presence of the following conservation significant species in areas surrounding the Study Area (within 10 km):

- White-throated needletail (*Hirundapus caudacutus*) (EPBC Act: Vulnerable, Migratory; NC Act: Vulnerable): recorded incidentally 1.9 km and 6.5 km north-east of the Study Area.
- Fork-tailed swift (*Apus pacificus*) (EPBC Act: Migratory; NC Act: Special least concern): recorded incidentally ~1.9 km north-east of the Study Area and at several locations along the Copperfield River to the west of the Study Area.
- Koala (*Phascolarctos cinereus*) (EPBC Act: Endangered; NC Act: Endangered): koala and/or evidence of koala presence (scats and/or scratches) were recorded east of the Study Area (1.3 to 4.6 km away) in drainage lines with remnant vegetation as well as at multiple locations along the Copperfield River to the west of the Study Area.
- *Corchorus subargenteus* (NC Act: Near threatened): commonly recorded in open woodland remnant vegetation south of the Copperfield River, on level or shallows slopes. The closest record was located ~6.6 km south of the Study Area.

- *Solanum angustum* (NC Act: Critically endangered): commonly recorded in open woodland remnant vegetation south of the Copperfield River, in association with hills and rocky substrates. The closest record was located ~8.6 km south-east of the Study Area.

Other conservation significant species recorded at a greater distance (>10 km) from the Study Area include *Euphorbia carissoides* (EBPC Act and NC Act: Vulnerable), *Cycas cairnsiana* (EBPC Act and NC Act: Vulnerable), *Leichhardtia brevifolia* (EBPC Act and NC Act: Vulnerable), and common death adder (*Acanthophis antarcticus*) (NC Act: Vulnerable). All these species have been recorded in rocky terrain associated with the Lochaber Ring Dyke formation that dominates the landscape south of the Copperfield River, and is located approximately 8 km away from the Study Area.

No conservation significant species have been recorded within the Study Area. Habitat within the Study Area is largely unsuitable for most of the species with potential to occur in a 10km buffer due to its poor condition and lack of habitat features (e.g. dense leaf litter for common death adder; rocky terrain for most threatened flora). Patches of eucalypt vegetation may provide foraging habitat to koala, while the air above may be used for foraging by white-throated needletail and fork-tailed swift. However, potential habitat within the Study Area does not represent important habitat for these species due to the large areas of remnant vegetation present in surrounding areas. No threatened or near threatened flora occur within the Study Area.

MSES and MNES

Below is an assessment of Matters of State Environmental Significance (MSES) and Matters of National Environmental Significance (MNES) in relation to the Study Area (Table 3; Table 4).

Table 3 MSES in the Study Area

MSES	Study Area assessment
Regulated vegetation: REs that are endangered or of concern; REs that intersect with a wetland shown on the vegetation management wetlands map; REs that are essential habitat; REs located within a defined distance of a relevant watercourse or drainage feature shown on the vegetation management watercourse and drainage feature map.	Not present in the Study Area. The Project will not impact on regulated vegetation.
Connectivity areas: REs that contain remnant vegetation and contains an area of land that is required for ecosystem functioning.	The Project will not impact on regulated vegetation as the Development Footprint is entirely located within a non-remnant area. Therefore the Project will not result in impacts to connectivity.
Wetlands and watercourses: a wetland in a wetland protection area; a wetland of high ecological significance shown on the map of Queensland wetland environmental values; a wetland or watercourse in high ecological value waters.	Not present in the Study Area.
Designated precinct in a strategic environmental area	Not present in the Study Area.
Protected wildlife habitat: high risk areas on the flora survey trigger map; areas containing threatened	The Project will not impact potential foraging habitat for koala as the Development Footprint is entirely

MSES	Study Area assessment
flora; a koala habitat area; habitat for an animal that is critically endangered, endangered, or vulnerable wildlife or a special least concern animal.	located within a non-remnant area and avoids clearing of remnant vegetation. The Study Area has limited aerial foraging habitat for white-throated needletail and fork-tailed swift, of which 2.78 ha is located within the Development Footprint. This habitat does not represent important habitat for these species due to its small extent and surrounding disturbances (e.g. cleared areas, renewable developments, pre-existing overhead lines).
Protected Areas—nature refuges	Not present in the Study Area.
Highly protected zones of State marine parks	Not present in the Study Area.
Fish habitat areas	Not present in the Study Area.
Waterway providing for fish passage	Not present in the Study Area.
Marine plants	Not present in the Study Area.
Legally secured offset areas	Not present in the Study Area.

Table 4 MNES in the Study Area

MNES	Study Area assessment
World Heritage Properties	Not present in the Study Area.
National Heritage Places	Not present in the Study Area.
Wetlands of International Importance	Not present in the Study Area.
Great Barrier Reef Marine Park	Not present in the Study Area.
Commonwealth Marine Area	Not present in the Study Area.
Listed Threatened Ecological Communities	Not present in the Study Area.
Listed threatened and/or migratory species	The Project will not impact potential foraging habitat for koala as the Development Footprint is entirely located within a non-remnant area and avoids clearing of remnant vegetation. The Study Area has limited aerial foraging habitat for white-throated needletail and fork-tailed swift, of which 2.78 ha is located within the Development Footprint. This habitat does not represent important habitat for these species due to its small extent and surrounding disturbances (e.g. cleared areas,

MNES	Study Area assessment
	renewable developments, pre-existing overhead lines).

Potential impacts

Potential impacts to MSES and/or MNES are limited due to the degraded condition of the Study Area and small scale of the works proposed. These are discussed below in Table 5.

Table 5 Potential impacts

Potential impact	Details
Vegetation clearing and habitat loss	Impacts related to vegetation clearing and habitat loss during construction are expected to be minimal as the Development Footprint is entirely located in non-remnant vegetation that is in poor condition and provides little habitat value to MSES and/or MNES species. No areas of regulated vegetation will be cleared to facilitate development of the Project therefore there will be no impact to remnant vegetation.
Fauna injury or mortality	Although vegetation to be cleared during construction is entirely non-remnant, there is potential for fauna to be present during clearing which may be struck by machinery or falling vegetation. This will be mitigated by implementing adequate vegetation clearing protocols, such as pre-clearings surveys and supervision of clearing activities by a fauna spotter catcher (FSC). During operational activities, grid connection lines connecting the BESS to the substation may pose a threat of collision for high-flying bird species. However, the risk is considered minimal given the short length of the grid connection lines, being less than 150 m, and location of the grid connection in a highly modified environment already containing pre-existing overhead lines.
Fragmentation	The area to be cleared consists entirely of non-remnant vegetation that provides limited habitat value or connectivity. The artificial waterbodies present in the southern section of the Study Area have been avoided by design. No impacts on connectivity are expected due to the Project.
Weeds and pests	Construction and operational activities have the potential to introduce new weeds or pests and/or allow existing infestations to spread, for example of rubber vine (*Cryptostegia grandiflora*), a Category 3 restricted invasive plant which was recorded in non-remnant areas of the Study Area. The Project will apply strict weed and pest adherence procedures to prevent spread of weeds, pathogens or other contaminants.
Erosion and sedimentation	During construction, removal of vegetation, creation of roads, and removal of topsoil can all lead to erosion. Erosion reduces landform stability and can impact waterway health when the soil washes into waterways leading to sedimentation. The Project will implement appropriate erosion and sedimentation controls to avoid runoff into the surrounding area.
Increased bushfire risk	During construction and decommissioning, the use of heavy machinery in long, dry grass, use of flammable liquids and welding activities could lead to increased risk of

Potential impact	Details
	bushfire. Fire may also be sparked by inappropriately discarded cigarettes, which may occur due to human activity during the construction, operation and decommissioning stages of the Project. Bushfire risks will be managed and minimised through the development of a Bushfire Management Plan.

Avoidance and mitigation

The BESS has been sited and designed to avoid and minimise environmental disturbance. The Project has been designed to avoid impacts through:

- Siting within previously disturbed and cleared land, and co-located adjacent to other renewable energy developments to maximise efficiency and minimise area of clearing required.
- Clearing for the Project is exclusively associated with non-remnant vegetation.
- Use of existing access roads for site access.

Additionally, a suite of mitigation measures will be implemented to ensure that construction, operational, and decommissioning activities minimise environmental disturbance. These include:

- Implementation of pre-clearings surveys and supervision of clearing activities by a FSC to relocate fauna and identify habitat features which may need sensitive clearing techniques during the site works stage.
- During site works, implementation of adequate vegetation clearing protocols, such as:
    - Use of sensitive clearing techniques where necessary
    - Staged clearing towards areas of habitat that are to be retained to allow fauna to disperse into remaining habitat (i.e. from north to south)
    - Clear delineation of clearing limits to avoid accidental clearing beyond the approved area and use of a FSC during clearing activities.
- Strict weed and pest control protocols to be implemented during all stages of the Project (i.e. site works, construction, commissioning, operation and maintenance, and decommissioning). Protocols to include:
    - Vehicle and machinery washdown procedures to avoid spread of weeds, pathogens or other contaminants
    - Monitoring and treatment of weed infestations, particularly Category 3 restricted invasive plants
    - Fill material (if required) for construction activities that is imported must be accompanied by a Weed Hygiene Declaration form
    - Adequate waste disposal facilities to avoid attracting pest animal
- Implementation of appropriate erosion and sedimentation controls during all stages of the Project to avoid erosion, sediment runoff and contamination of adjacent drainage lines. For example, no stockpiling of materials near waterways or drainage lines; and stabilisation and/or restoration of areas of temporary disturbance not required for operation of the Project.
- Implementation of measures to prevent chemical and other spills, such as appropriate chemical storage and refuelling procedures, and provision of spill kits.
- Development and implementation of a Bushfire Management Plan to manage the risk of bushfire during all stages of the Project.

Conclusion

The Project has been sited and designed with avoidance as a key guiding principle. This was facilitated by extensive survey effort associated with the Kidston Hybrid Project, which provided a clear understanding of ecological values in the Study Area and wider landscape. The Study Area comprises mostly non-remnant vegetation with minimal habitat value. Areas of remnant vegetation within the Study Area provide some habitat value and have been avoided.

The Study Area has limited foraging habitat for koala (0.31 ha), and aerial foraging habitat (6.47 ha) for white-throated needletail and fork-tailed swift, however, the Project will not result in loss of any of this habitat. No significant impacts on MSES and/or MNES are expected due to the degraded condition of the Study Area, and small scale and extent of the works proposed. Additionally, the Project will implement a suite of mitigation measures to minimise environmental disturbance during the construction, operation and maintenance and decommissioning stages.

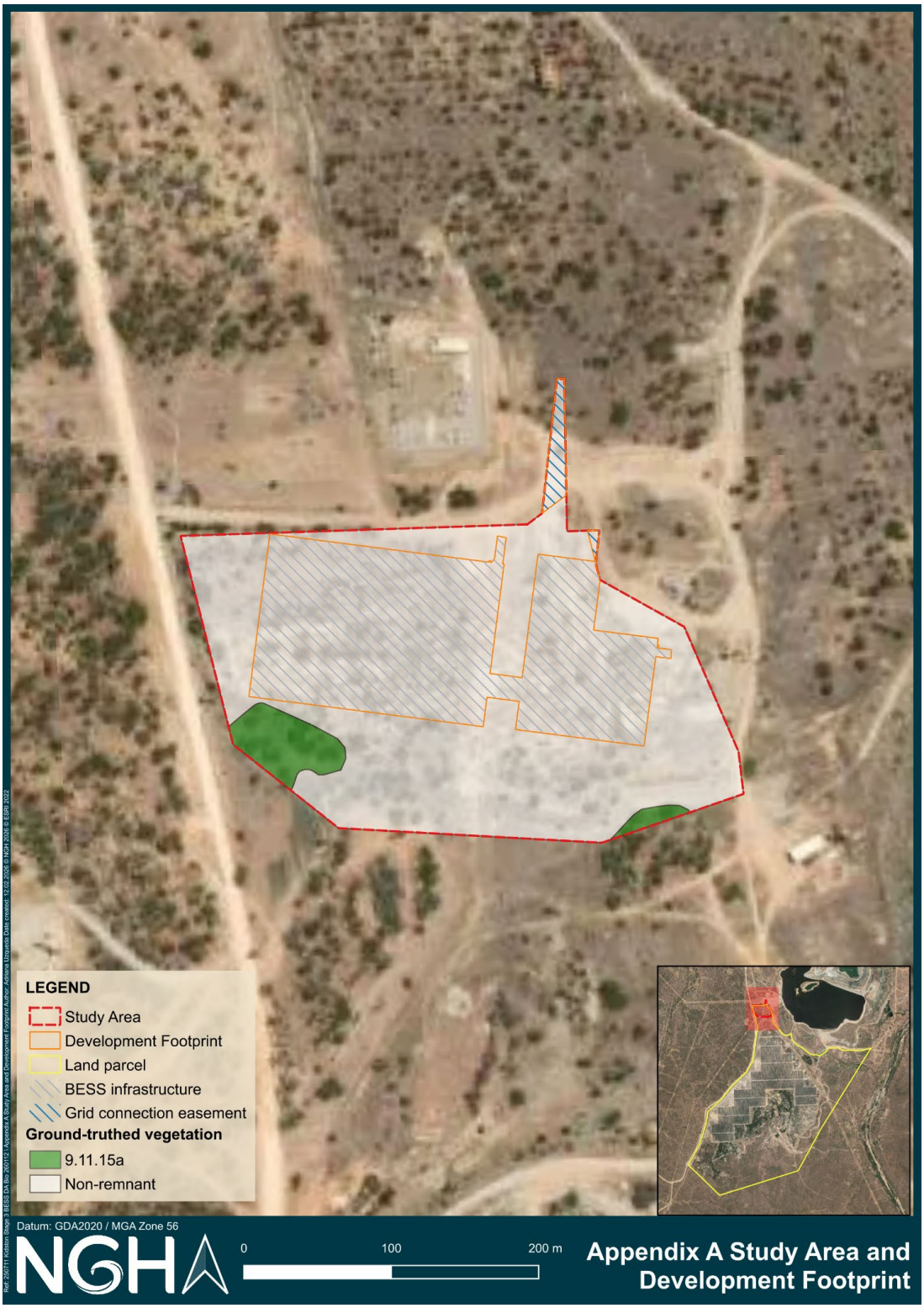
If you have any questions, please contact me or Amylee Quirk on (07) 4672-6133. We would be pleased to discuss any aspect of this project with you further.

Yours sincerely,



Adriana Uzqueda
Technical Lead – Biodiversity
07 4672-6141 / 0431 631 005

Appendix A Study Area and Development Footprint map



Appendix B Desktop searches

- PMST Report
- MSES Report
- Regulated vegetation management map
- WildNet records

Australian Government
Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 12-Jan-2026

Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	21
Listed Migratory Species:	11

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	17
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	1
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Species			[Resource Information]
Status of Conservation Dependent and Extinct are not MNES under the EPBC Act. Number is the current name ID.			
Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Chloebia gouldiae listed as Erythrura gouldiae Gouldian Finch [90091]	Endangered	Species or species habitat may occur within area	In feature area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Tyto novaehollandiae kimberli			
Masked Owl (northern) [26048]	Vulnerable	Species or species habitat may occur within area	In feature area
MAMMAL			
Dasyurus hallucatus			
Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat may occur within area	In feature area
Macroderma gigas			
Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In feature area
Mesembriomys gouldii rattoides			
Black-footed Tree-rat (north Queensland), Shaggy Rabbit-rat [87620]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides minor			
Greater Glider (northern), Greater Glider (north-eastern Queensland) [92008]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In feature area
Rhinolophus robertsi			
Large-eared Horseshoe Bat, Greater Large-eared Horseshoe Bat [87639]	Vulnerable	Species or species habitat likely to occur within area	In feature area
PLANT			
Cycas cairnsiana			
a cycad [5780]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Cycas platyphylla			
a cycad [55796]	Vulnerable	Species or species habitat may occur within area	In feature area
Dichanthium setosum			
bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Euphorbia carissoides [12431]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Macropteranthes montana [9003]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
Varanus mertensi Mertens' Water Monitor [1568]	Endangered	Species or species habitat likely to occur within area	In feature area

Listed Migratory Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Listed Marine Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Chalcites osculans as Chrysococcyx osculans Black-eared Cuckoo [83425]		Species or species habitat may occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area
Hirundo rustica Barn Swallow [662]		Species or species habitat may occur within area overfly marine area	In feature area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area overfly marine area	In feature area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis as Rostratula benghalensis (sensu lato)			
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Reptile			
Crocodylus johnstoni			
Freshwater Crocodile, Johnston's Crocodile, Johnstone's Crocodile [1773]		Species or species habitat may occur within area	In feature area

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Newcastle Range-The Oaks	Nature Refuge	QLD	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Kidston Solar Farm Stage 2, near Kidston, Qld	2018/8229		Completed	In feature area
Kidston Wind Farm	2024/09812		Assessment	In feature area
Powerlink Queensland Genex Kidston Connection Project	2021/9060		Post-Approval	In feature area
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

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Queensland Government

Department of the Environment, Tourism, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Lot: 12 Plan: SP345756

Environmental Reports - General Information

The Environmental Reports portal provides for the assessment of selected matters of interest relevant to a user specified location, or area of interest (AOI). All area and derivative figures are relevant to the extent of matters of interest contained within the AOI unless otherwise stated. Please note, if a user selects an AOI via the "central coordinates" option, the resulting assessment area encompasses an area extending for a 2km radius from the point of interest.

All area and area derived figures included in this report have been calculated via reprojecting relevant spatial features to Albers equal-area conic projection (central meridian = 146, datum Geocentric Datum of Australia 2020). As a result, area figures may differ slightly if calculated for the same features using a different co-ordinate system.

Figures in tables may be affected by rounding.

The matters of interest reported on in this document are based upon available state mapped datasets. Where the report indicates that a matter of interest is not present within the AOI (e.g. where area related calculations are equal to zero, or no values are listed), this may be due either to the fact that state mapping has not been undertaken for the AOI, that state mapping is incomplete for the AOI, or that no values have been identified within the site.

The information presented in this report should be considered as a guide only and a field survey may be required to validate values on the ground.

Please direct queries about these reports to: Planning.Support@detsi.qld.gov.au

Disclaimer

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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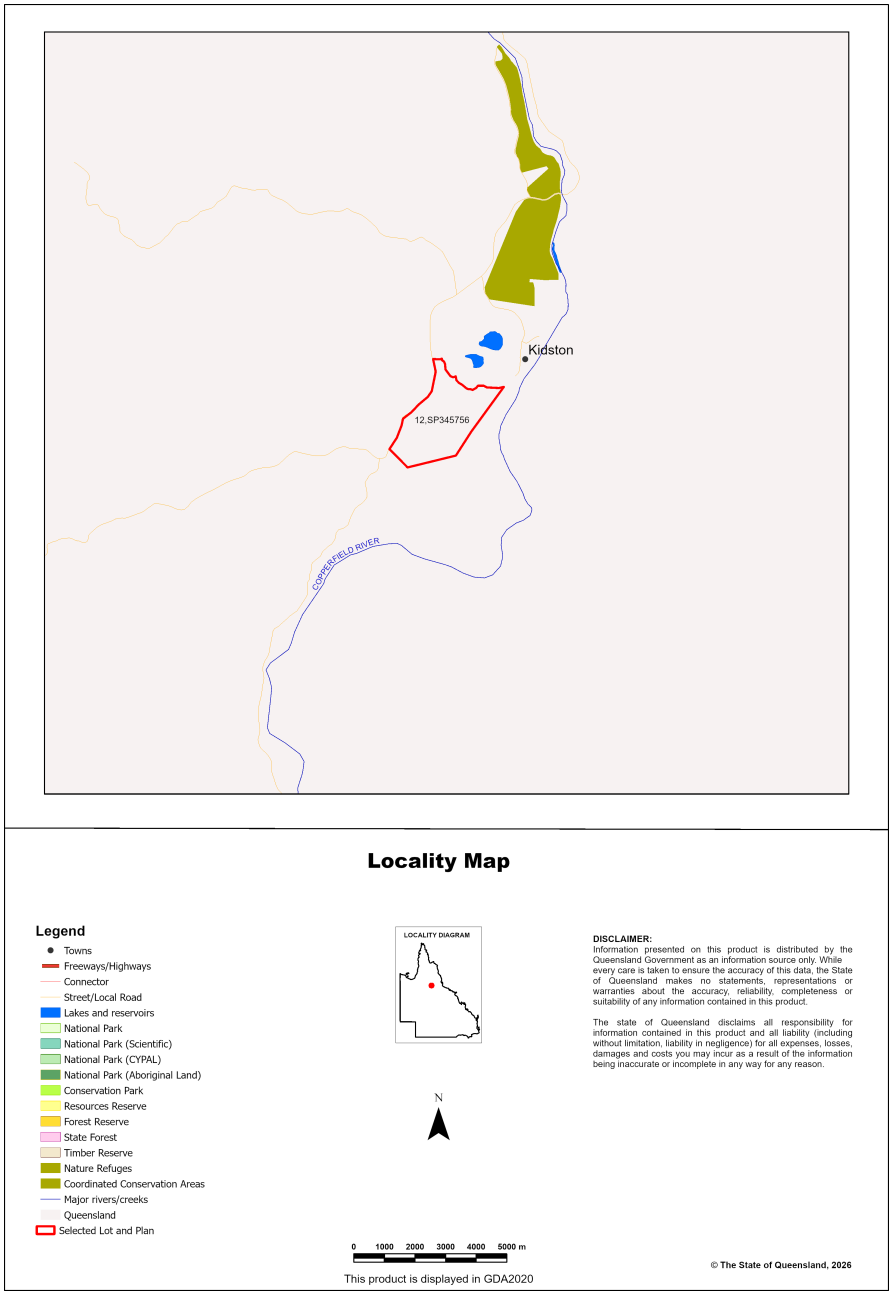
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Assessment Area Details

The following table provides an overview of the area of interest (AOI) with respect to selected topographic and environmental values.

Table 1: Summary table, details for AOI: Lot: 12 Plan: SP345756, with area 572.5 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Etheridge Shire	Gilbert	Einasleigh Uplands	Kidston



Matters of State Environmental Significance (MSES)

MSES Categories

Queensland's State Planning Policy (SPP) includes a biodiversity State interest that states:

'The sustainable, long-term conservation of biodiversity is supported. Significant impacts on matters of national or state environmental significance are avoided, or where this cannot be reasonably achieved; impacts are minimised and residual impacts offset.'

The MSES mapping product is a guide to assist implementation of the SPP biodiversity policy. While it supports the SPP, the mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

The SPP defines matters of state environmental significance as:

- Protected areas (including all classes of protected area except coordinated conservation areas) under the*Nature Conservation Act 1992;*

- *Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under theMarine Parks Act 2004 ;*

- *Areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008;*

- *Threatened wildlife under the Nature Conservation Act 1992* and special least concern animals under the Nature Conservation (Wildlife) Regulation 2006;

- Regulated vegetation under the *Vegetation Management Act 1999* that is:

  - Category B areas on the regulated vegetation management map, that are 'endangered' or 'of concern' regional ecosystems;
  - Category C areas on the regulated vegetation management map that are 'endangered' or 'of concern' regional ecosystems;
  - Category R areas on the regulated vegetation management map;
  - Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse and drainage feature map;
  - Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map;

- Strategic Environmental Areas under the *Regional Planning Interests Act 2014* ;

- Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Queensland Wetland Environmental Values under the Environment Protection Regulation 2019;

- Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water) Policy 2009, schedule 2;
- Legally secured offset areas.

MSES Values Present

The MSES values that are present in the area of interest are summarised in the table below:

Table 2: Summary of MSES present within the AOI

1a Protected Areas- estates	0 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	0 ha	0.0%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	0 ha	0.0%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	0 ha	0.0%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	0 ha	0.0%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	0 ha	0.0%
8d Regulated Vegetation - Essential habitat	0 ha	0.0%
8e Regulated Vegetation - intersecting a watercourse	5.7 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	21.17 ha	3.7%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	0 ha	0.0%

Additional Information with Respect to MSES Values Present

MSES - State Conservation Areas

1a. Protected Areas - estates

(No results)

1b. Protected Areas - nature refuges

(No results)

1c. Protected Areas - special wildlife reserves

(No results)

2. State Marine Parks - highly protected zones

(No results)

3. Fish habitat areas (A and B areas)

(No results)

Refer to **Map 1 - MSES - State Conservation Areas** for an overview of the relevant MSES.

MSES - Wetlands and Waterways

4. Strategic Environmental Areas (SEA)

(No results)

5. High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values

(no results)

6a. Wetlands in High Ecological Value (HEV) waters

(no results)

6b. Waterways in High Ecological Value (HEV) waters

(no results)

Refer to **Map 2 - MSES - Wetlands and Waterways** for an overview of the relevant MSES.

MSES - Species

7a. Threatened (endangered or vulnerable) wildlife

Not applicable

7b. Special least concern animals

Not applicable

7c i. Koala habitat area - core (SEQ)

Not applicable

7c ii. Koala habitat area - locally refined (SEQ)

Not applicable

7d. Wildlife habitat (sea turtle nesting areas)

Not applicable

Threatened (endangered or vulnerable) wildlife habitat suitability models

Species	Common name	NCA status	Presence
Boronia keysii	Keys boronia	V	None
Calyptorhynchus lathami	Glossy black cockatoo	V	None
Casuarius casuarius johnsonii	Sthn population cassowary	E	None
Crinia tinnula	Wallum froglet	V	None
Denisonia maculata	Ornamental snake	V	None
Euastacus bindal	Mount Elliot crayfish	CR	None
Euastacus binzayedi		CR	None
Euastacus eungella		E	None
Euastacus hystricosus		E	None
Euastacus jagara	Jagara hairy crayfish	CR	None
Euastacus maidae		CR	None
Euastacus monteithorum		E	None
Euastacus robertsi		E	None
Taudactylus pleione	Kroombit tinkerfrog	E	None
Litoria freycineti	Wallum rocketfrog	V	None
Litoria olongburensis	Wallum sedgefrog	V	None
Macadamia integrifolia		V	None
Melaleuca irbyana	swamp tea-tree	E	None
Macadamia ternifolia		V	None
Macadamia tetraphylla	bopple nut	V	None
Petrogale penicillata	brush-tailed rock-wallaby	V	None
Petrogale coenensis	Cape York rock-wallaby	E	None
Petrogale purpureicollis	purple-necked rock-wallaby	V	None
Petrogale sharmani	Sharmans rock-wallaby	V	None
Petrogale xanthopus celeris	yellow-footed rock-wallaby (Qld subspecies)	V	None
Petaurus gracilis	Mahogany Glider	E	None
Petrogale persephone	Proserpine rock-wallaby	E	None
Phascolarctos cinereus	Koala - outside SEQ*	E	None
Pezoporus wallicus wallicus	Eastern ground parrot	V	None
Xeromys myoides	Water Mouse	V	None

*For koala model, this includes areas outside SEQ. Check 7c SEQ koala habitat for presence/absence.

Threatened (endangered or vulnerable) wildlife species records

(No results)

Special least concern animal species records

(No results)

Shorebird habitat (critically endangered/endangered/vulnerable)

Not applicable

Shorebird habitat (special least concern)

Not applicable

**Nature Conservation Act 1992 (NCA) Status- Endangered (E), Vulnerable (V) or Special Least Concern Animal (SL). Environment Protection and Biodiversity Conservation Act 1999 (EPBC) status: Critically Endangered (CE) Endangered (E), Vulnerable (V)*

Migratory status (M) - China and Australia Migratory Bird Agreement (C), Japan and Australia Migratory Bird Agreement (J), Republic of Korea and Australia Migratory Bird Agreement (R), Bonn Migratory Convention (B), Eastern Flyway (E)

To request a species list for an area, or search for a species profile, access Wildlife Online at:

https://www.qld.gov.au/environment/plants-animals/species-list/

Refer to **Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals** and **Map 3b - MSES - Species - Koala habitat area (SEQ)** and **Map 3c - MSES - Wildlife habitat (sea turtle nesting areas)** for an overview of the relevant MSES.

MSES - Regulated Vegetation

For further information relating to regional ecosystems in general, go to:

https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/

For a more detailed description of a particular regional ecosystem, access the regional ecosystem search page at:

https://environment.ehp.qld.gov.au/regional-ecosystems/

8a. Regulated Vegetation - Endangered/Of concern in Category B (remnant)

Not applicable

8b. Regulated Vegetation - Endangered/Of concern in Category C (regrowth)

Not applicable

8c. Regulated Vegetation - Category R (GBR riverine regrowth)

Not applicable

8d. Regulated Vegetation - Essential habitat

Not applicable

8e. Regulated Vegetation - intersecting a watercourse**

A vegetation management watercourse is mapped as present

8f. Regulated Vegetation - within 100m of a Vegetation Management wetland

Regulated vegetation map category	Map number
B	7760

Refer to **Map 4 - MSES - Regulated Vegetation** for an overview of the relevant MSES.

MSES - Offsets

9a. Legally secured offset areas - offset register areas

(No results)

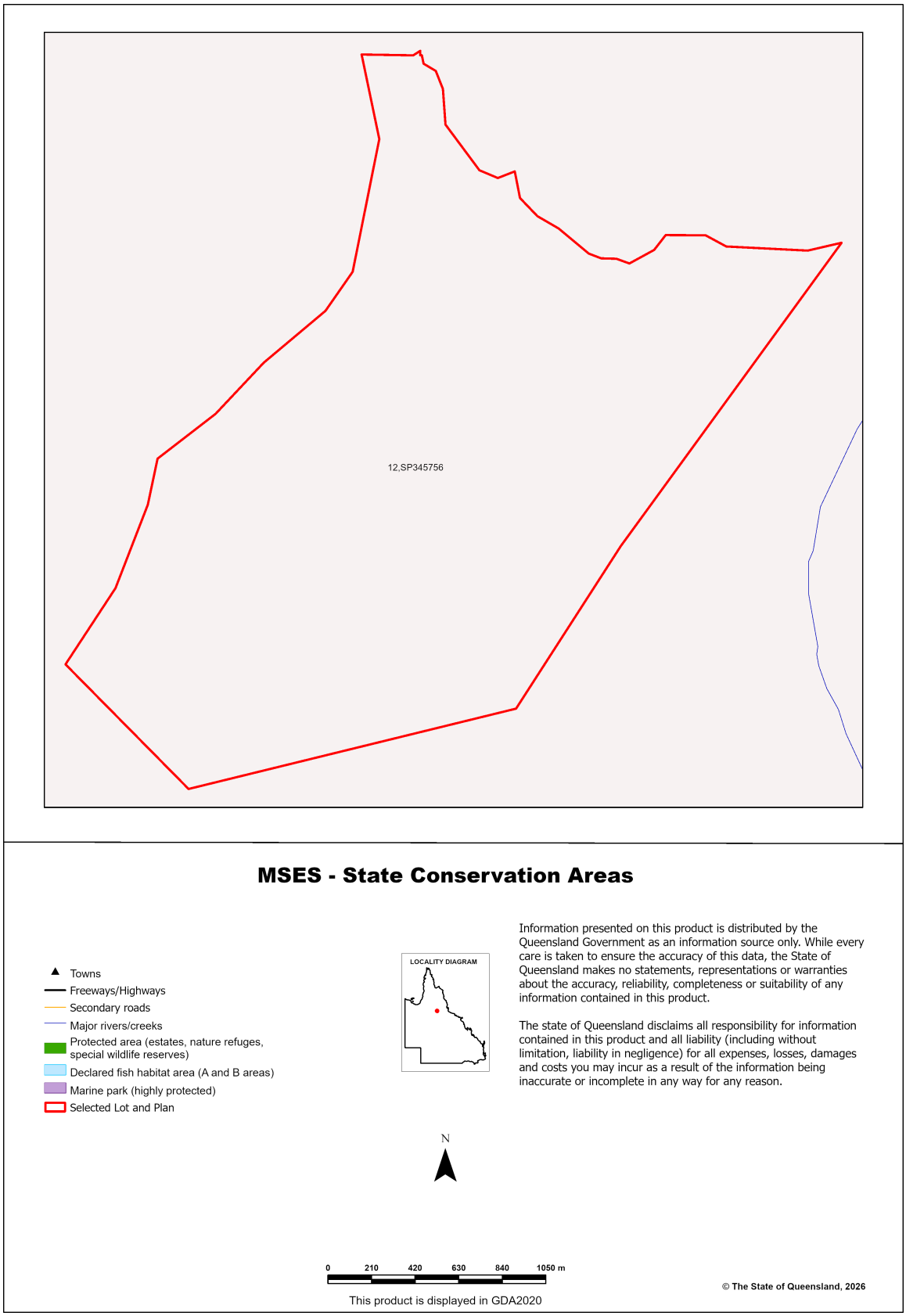
9b. Legally secured offset areas - vegetation offsets through a Property Map of Assessable Vegetation

(No results)

Refer to **Map 5 - MSES - Offset Areas** for an overview of the relevant MSES.

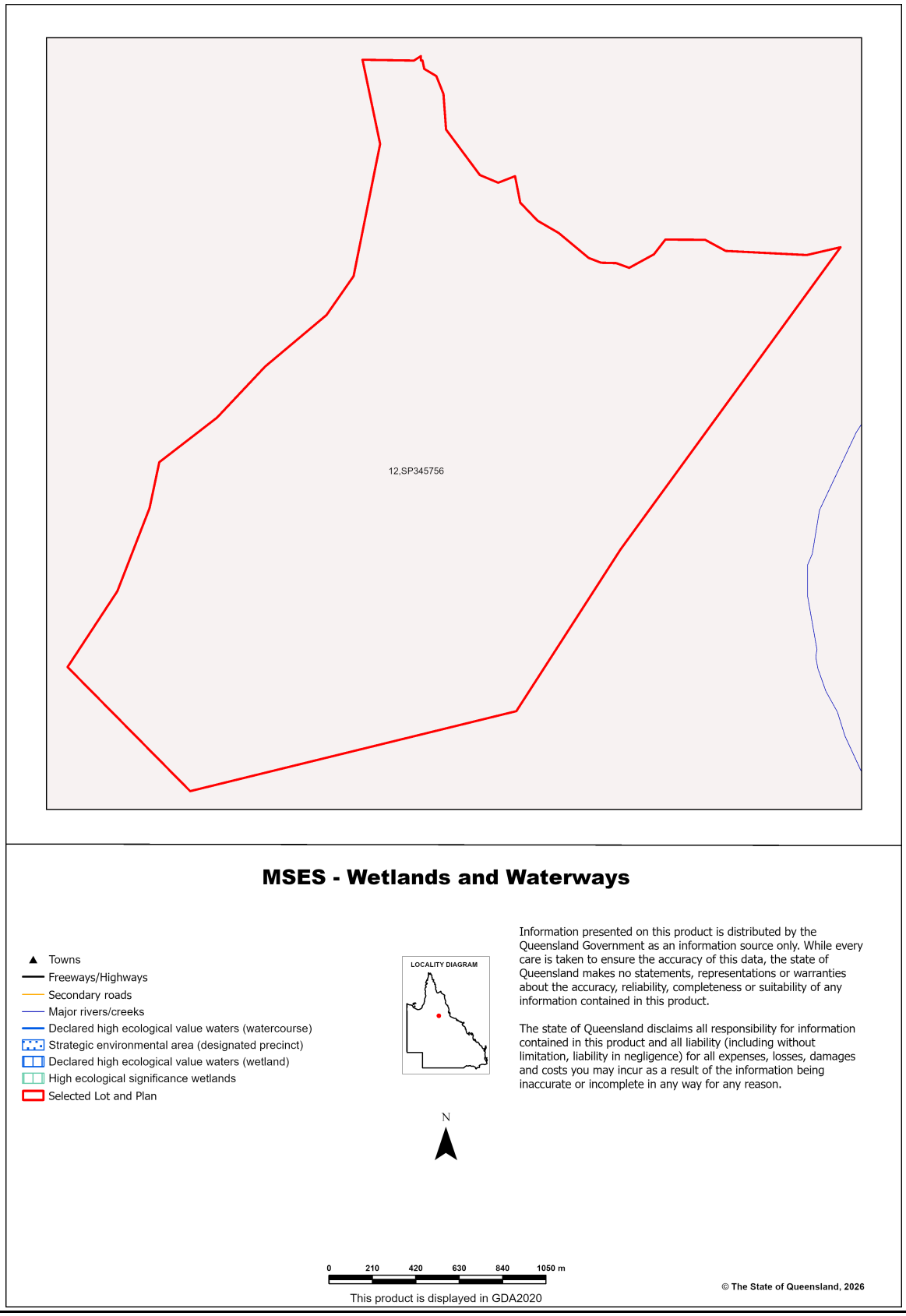
Matters of State Environmental Significance **12/01/2026 16:45:58**

Map 1 - MSES - State Conservation Areas



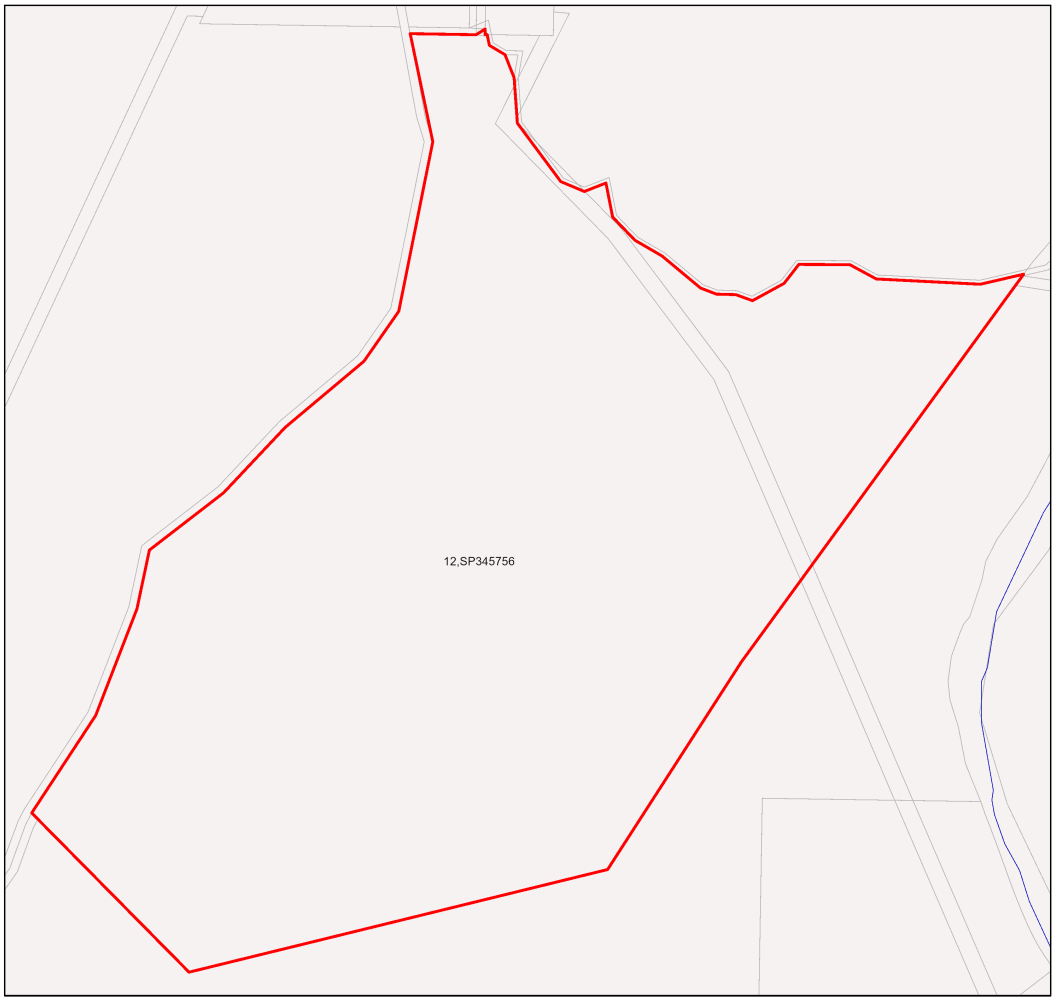
Matters of State Environmental Significance **12/01/2026 16:45:58**

Map 2 - MSES - Wetlands and Waterways



Matters of State Environmental Significance **12/01/2026 16:45:58**

Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



MSES - Species
Threatened (endangered or vulnerable) wildlife and special least concern animals

- ▲ Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (special least concern)
- Wildlife habitat (endangered or vulnerable)
- Selected Lot and Plan

LOCALITY DIAGRAM



N

0 210 420 630 840 1050 m

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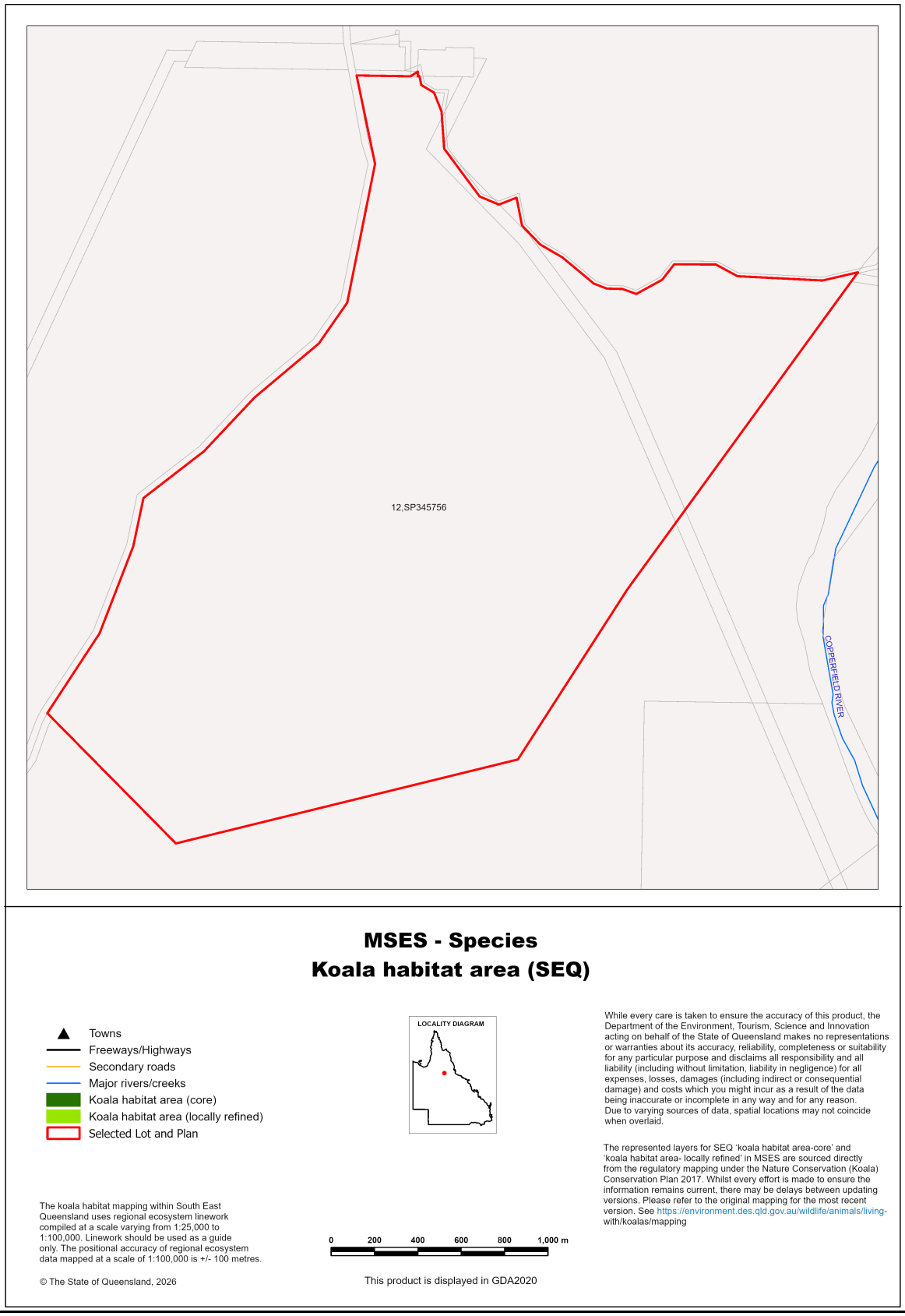
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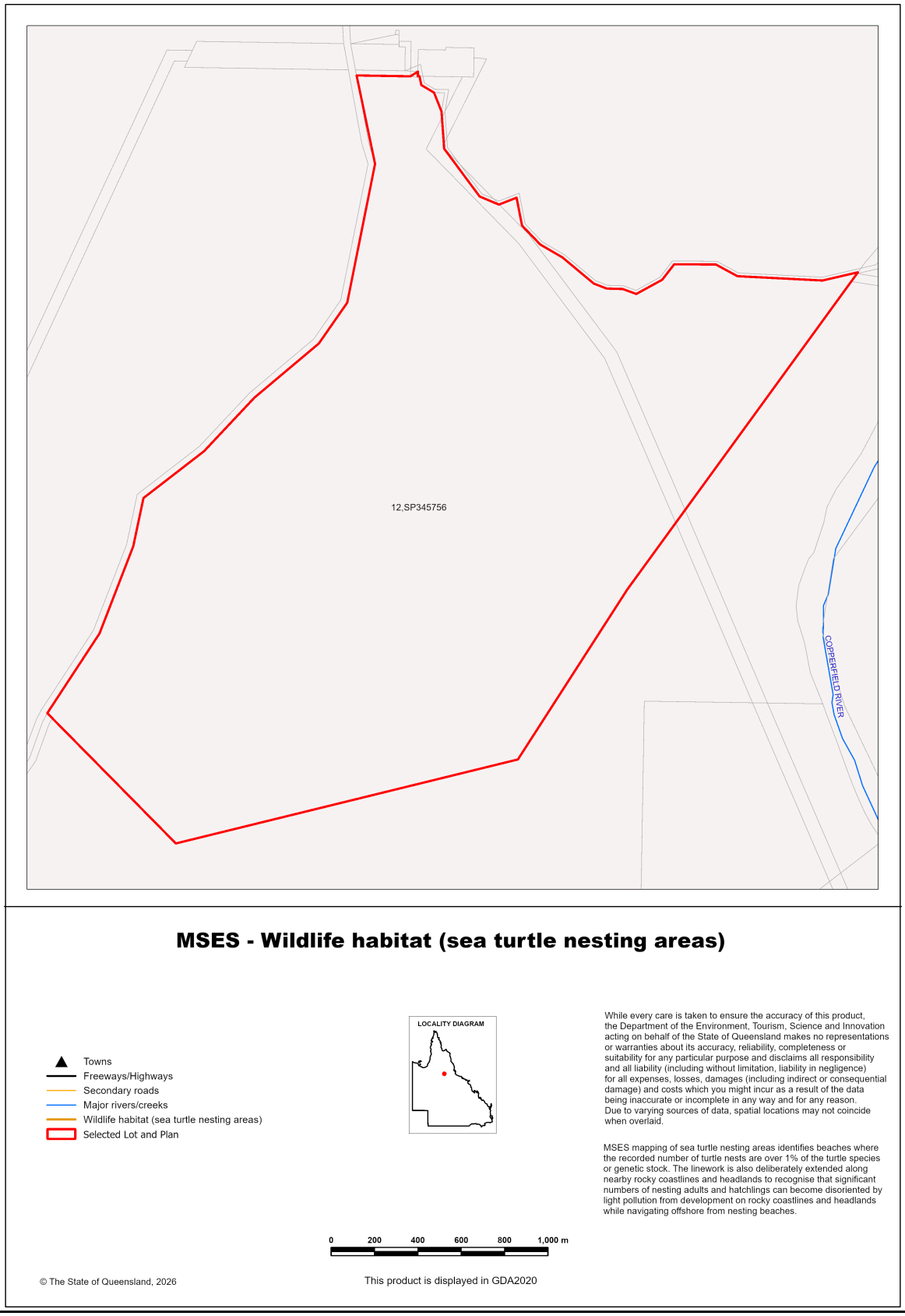
Matters of State Environmental Significance **12/01/2026 16:45:58**

Map 3b - MSES - Species - Koala habitat area (SEQ)



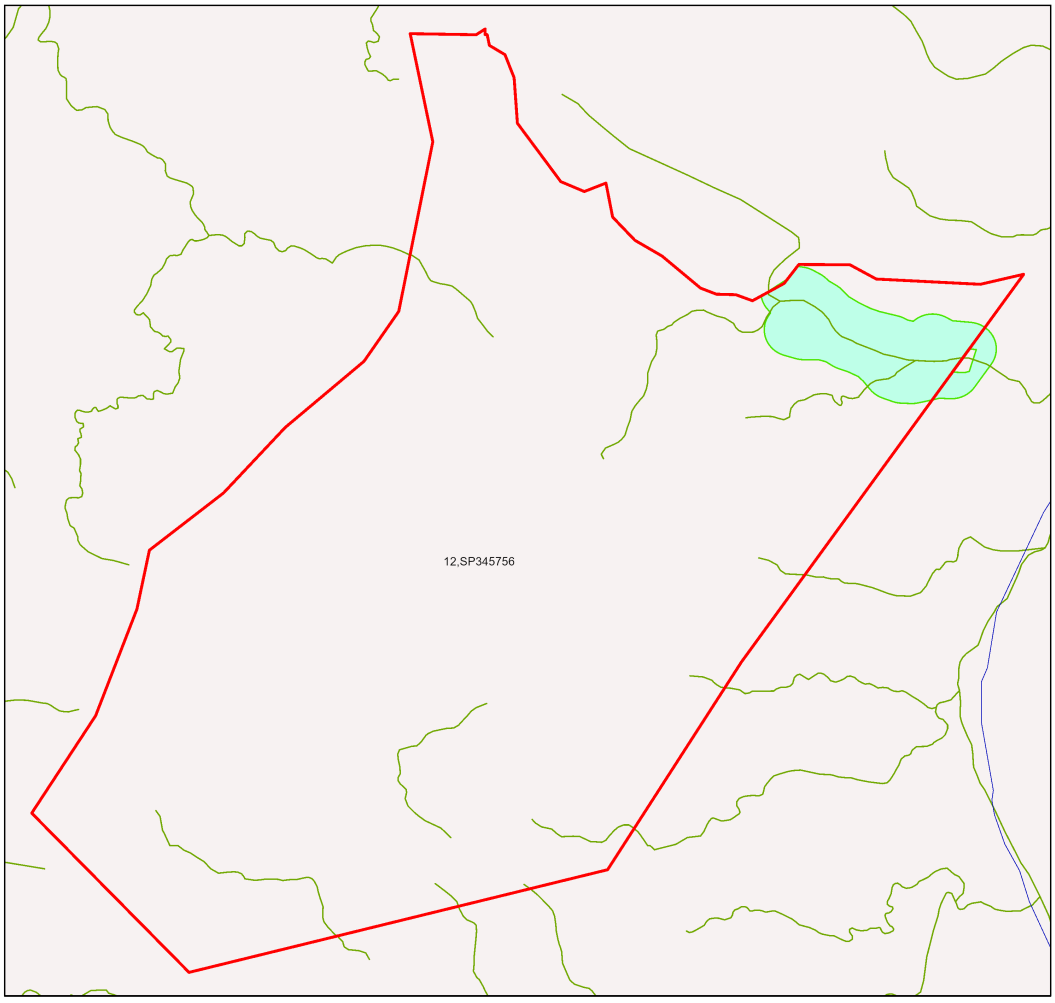
Matters of State Environmental Significance **12/01/2026 16:45:58**

Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



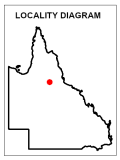
Matters of State Environmental Significance **12/01/2026 16:45:58**

Map 4 - MSES - Regulated Vegetation



MSES - Regulated Vegetation

- Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Regulated vegetation (intersecting a watercourse)
- Regulated vegetation (100m from wetland)
- Regulated vegetation (category B - endangered or of concern)
- Regulated vegetation (category C - endangered or of concern)
- Regulated vegetation (category R - GBR riverine)
- Regulated vegetation (essential habitat)
- Selected Lot and Plan



N

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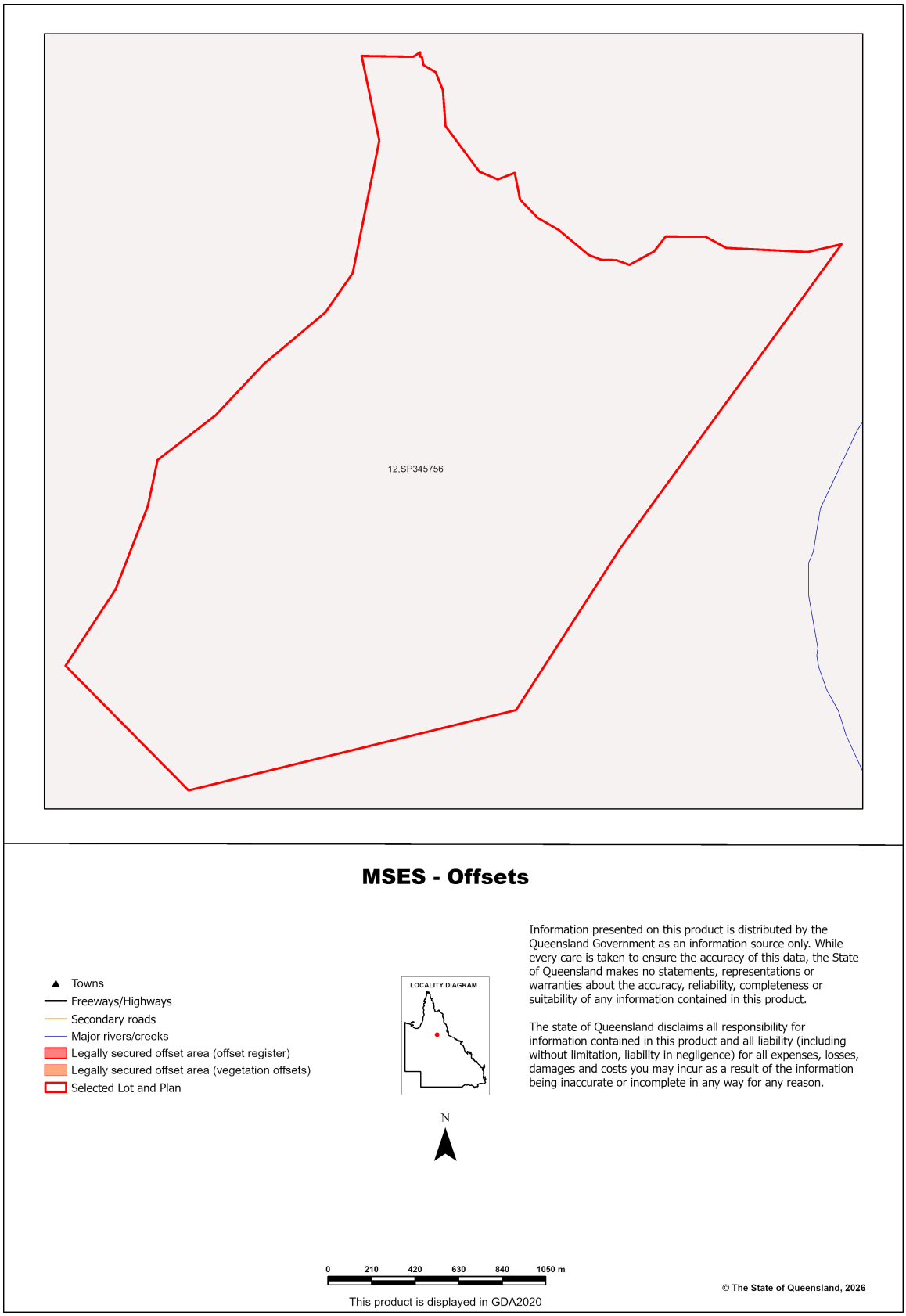
0 210 420 630 840 1050 m

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Matters of State Environmental Significance **12/01/2026 16:45:58**

Map 5 - MSES - Offset Areas



Appendices

Appendix 1 - Matters of State Environmental Significance (MSES) methodology

MSES mapping is a regional-scale representation of the definition for MSES under the State Planning Policy (SPP). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance can be downloaded from:

http://www.ehp.qld.gov.au/land/natural-resource/method-mapping-mses.html .

Appendix 2 - Source Data

The datasets listed below are available on request from:

http://qldspatial.information.qld.gov.au/catalogue/custom/index.page

- Matters of State environmental significance

Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying data sources. Several components of MSES mapping made for the current version may differ from the current underlying data sources. To ensure accuracy, or proper representation of MSES values, it is strongly recommended that users refer to the underlying data sources and review the current definition of MSES in the State Planning Policy, before applying the MSES mapping.

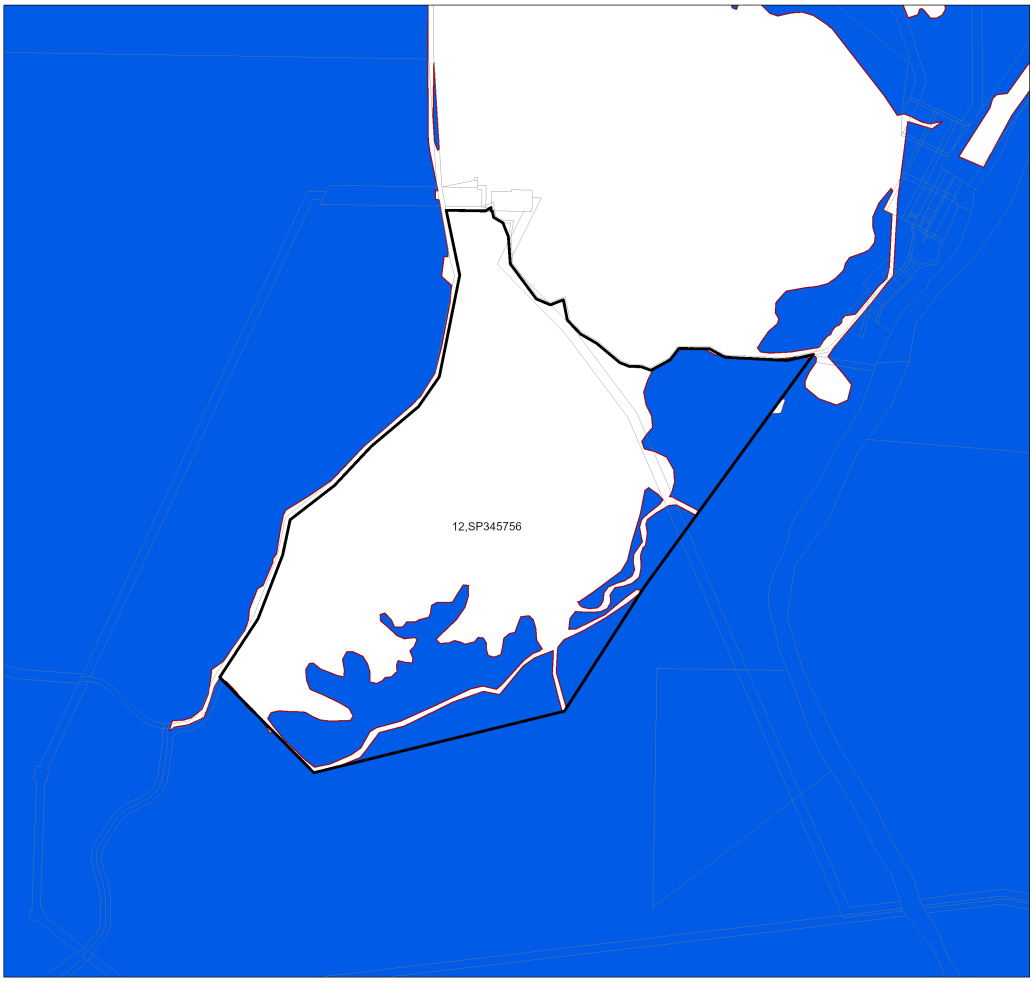
Individual MSES layers can be attributed to the following source data available at QSpatial:

MSES layers	**current QSpatial data (http://qspatial.information.qld.gov.au)**
Protected Areas-Estates, Nature Refuges, Special Wildlife Reserves	- Protected areas of Queensland - Nature Refuges - Queensland - Special Wildlife Reserves- Queensland
Marine Park-Highly Protected Zones	Moreton Bay marine park zoning 2008
Fish Habitat Areas	Queensland fish habitat areas
Strategic Environmental Areas-designated	Regional Planning Interests Act - Strategic Environmental Areas
HES wetlands	Map of Queensland Wetland Environmental Values
Wetlands in HEV waters	HEV waters: - EPP Water intent for waters Source Wetlands: - Queensland Wetland Mapping (Current version 5) Source Watercourses: - Vegetation management watercourse and drainage feature map (1:100000 and 1:250000)
Wildlife habitat (threatened and special least concern)	-WildNet database species records - habitat suitability models (various) - SEQ koala habitat areas under the Koala Conservation Plan 2019
VMA regulated regional ecosystems	Vegetation management regional ecosystem and remnant map
VMA Essential Habitat	Vegetation management - essential habitat map
VMA Wetlands	Vegetation management wetlands map
Legally secured offsets	Vegetation Management Act property maps of assessable vegetation. For offset register data-contact DETSI
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DETSI	- Department of the Environment, Tourism, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA2020	- Geocentric Datum of Australia 2020
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999

Lot: 12 Plan: SP345756 12/01/2026 16:54:16

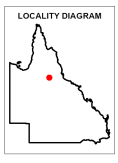


Regulated Vegetation Management Map

Queensland Government

Category A area (Vegetation offsets/compliance notices/VDecs)
Category B area (Remnant vegetation)
Category C area (High-value regrowth vegetation)
Category R area (Reef regrowth watercourse vegetation)
Category X area (Exempt clearing work on Freehold, Indigenous and Leasehold land)
Water
Other land parcel boundaries
Selected Lot and Plan

LOCALITY DIAGRAM



N

0 350 700 1,050 1,400 1,750 m

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Additional information required for the assessment of vegetation values is provided in the accompanying "Vegetation Management Supporting map". For further information go to the web site: www.nrmmrrd.qld.gov.au or contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development.

Digital data for the regulated vegetation management map is available from the Queensland Spatial Portal at http://www.spatial.information.qld.gov.au/

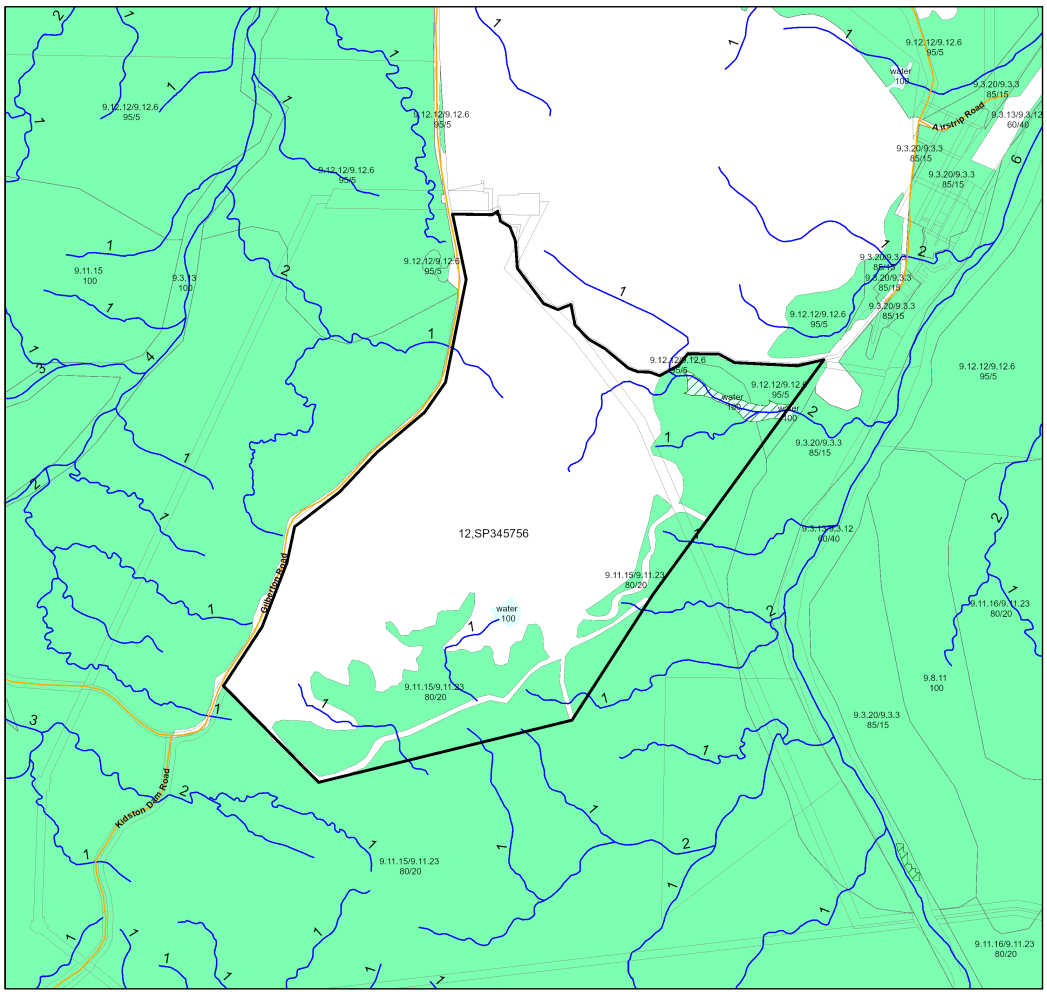
Land parcel boundaries are provided as locational aid only.

This map is updated on a monthly basis to ensure new PMAVs are included as they are approved.

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Lot: 12 Plan: SP345756

12/01/2026 16:54:16

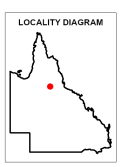


Vegetation Management Supporting Map

- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map (Stream order shown as black number against stream where available)
- Highway
- Connector
- Street/Local Road
- National Parks, State Forest and other reserves
- Other land parcel boundaries
- Selected Lot and Plan

Queensland Government

LOCALITY DIAGRAM



N

0 250 500 750 1,000 1,250 m

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Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

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Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.nrmmrrd.qld.gov.au or contact the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development.

Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at http://www.spatial.information.qld.gov.au/

Land parcel boundaries are provided as locational aid only.

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Lot: 12 Plan: SP345756 12/01/2026 16:54:16

Vegetation Management Act 1999 - Extract from the essential habitat database

Essential habitat is required for assessment under the:

- State Development Assessment Provisions - State Code 16: Native vegetation clearing which sets out the matters of interest to the state for development assessment under the *Planning Act 2016*; and
- Accepted development vegetation clearing codes made under the *Vegetation Management Act 1999*

Essential habitat for one or more of the following species is found on and within 1.1 km of the identified subject lot/s on the accompanying essential habitat map.

This report identifies essential habitat in Category A, B and Category C areas.

The numeric labels on the essential habitat map can be cross referenced with the database below to determine which essential habitat factors might exist for a particular species.

Essential habitat is compiled from a combination of species habitat models and buffered species records.

The Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development website http://www.nrmmrrd.qld.gov.au has more information on how the layer is applied under the State Development Assessment Provisions - State Code 16: Native vegetation clearing and the *Vegetation Management Act 1999*.

Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated.

Essential habitat, for protected wildlife, means a category A area, a category B area or category C area shown on the regulated vegetation management map-

1. that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database; or
2. in which the protected wildlife, at any stage of its life cycle, is located.

Protected wildlife includes critically endangered, endangered, vulnerable or near-threatened native wildlife prescribed under the *Nature Conservation Act 1992*.

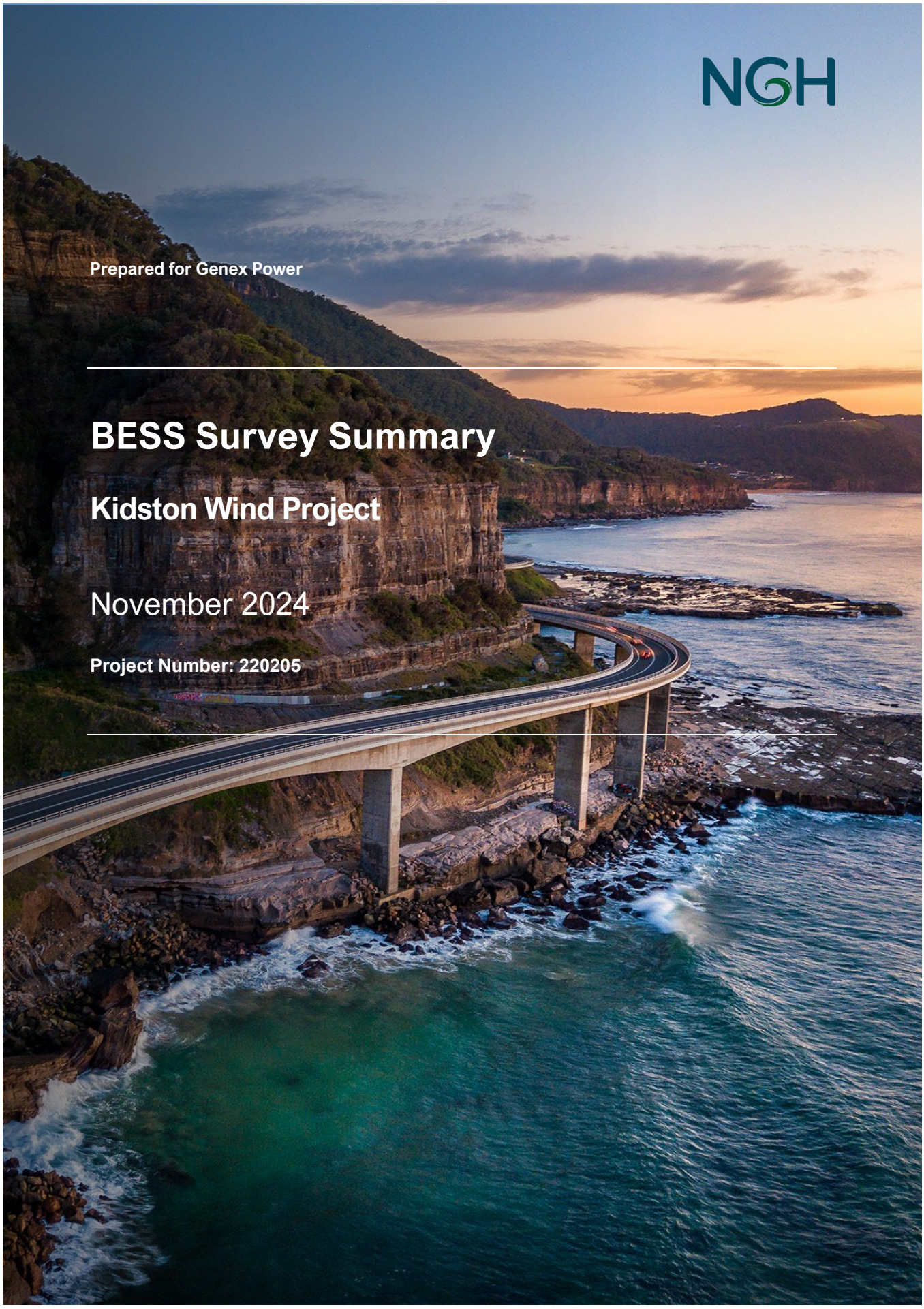
Essential habitat in Category A and/or Category B and/or Category C

No records

WN Taxon ID	Class	Family	Scientific name	Common name	NCA status	EPBC status	Superseded	Conservation significant	Establishment	Sensitive species	Sighting records	Specimen records	Sighting summary
27028	Actinopterygii	Melanotaeniidae	Melanotaenia splendida inornata	checkered rainbowfish			No	No	QA	No	1	0	1
27089	Actinopterygii	Terapontidae	Leiopotherapon unicolor	spangled perch			No	No	QA	No	1	0	1
716	Amphibia	Bufonidae	Rhinella marina	cane toad			No	No	II	No	1	0	1
1396	Aves	Acanthizidae	Gerygone olivacea	white-throated gerygone	C		No	No	QAI	No	1	0	1
1371	Aves	Acanthizidae	Smicrornis brevirostris	weebill	C		No	No	QA	No	1	0	1
1732	Aves	Accipitridae	Aquila audax	wedge-tailed eagle	C		No	No	QAI	No	1	0	1
1767	Aves	Alcedinidae	Dacelo novaeguineae	laughing kookaburra	C		No	No	QA	No	4	0	4
1998	Aves	Anatidae	Anas superciliosa	Pacific black duck	C		No	No	QAI	No	1	0	1
1279	Aves	Anhingidae	Anhinga novaehollandiae	Australasian darter	C		No	No	QAI	No	1	0	1
1826	Aves	Ardeidae	Egretta novaehollandiae	white-faced heron	C		No	No	QAI	No	2	0	2
1658	Aves	Artamidae	Artamus cinereus	black-faced woodswallow	C		No	No	QA	No	3	0	3
1654	Aves	Artamidae	Cracticus nigrogularis	pied butcherbird	C		No	No	QA	No	8	0	8
1656	Aves	Artamidae	Cracticus torquatus	grey butcherbird	C		No	No	QA	No	2	0	2
1644	Aves	Artamidae	Gymnorhina tibicen	Australian magpie	C		No	No	QAI	No	10	0	10
1193	Aves	Cacatuidae	Eolophus roseicapilla	galah	C		No	No	QA	No	7	0	7
1636	Aves	Campephagidae	Coracina novaehollandiae	black-faced cuckoo-shrike	C		No	No	QAI	No	2	0	2
1940	Aves	Charadriidae	Elseyornis melanops	black-fronted dotterel	C		No	No	QAI	No	1	0	1
27774	Aves	Charadriidae	Vanellus miles	masked lapwing	C		No	No	QAI	No	1	0	1
1932	Aves	Charadriidae	Vanellus miles miles	masked lapwing (northern subspecies)	C		No	No	QAI	No	3	0	3
1628	Aves	Climacteridae	Climacteris picumnus	brown treecreeper	C		No	No	QA	No	2	0	2
1793	Aves	Columbidae	Ocyphaps lophotes	crested pigeon	C		No	No	QA	No	4	0	4
1779	Aves	Coraciidae	Eurystomus orientalis	dollarbird	C		No	No	QAI	No	2	0	2
1605	Aves	Corcoracidae	Struthidea cinerea	apostlebird	C		No	No	QA	No	3	0	3
1609	Aves	Corvidae	Corvus orru	Torresian crow	C		No	No	QAI	No	3	0	3
1610	Aves	Corvidae	Corvus sp.		C		No	No	U	No	2	0	2
1738	Aves	Cuculidae	Eudynamys orientalis	eastern koel	C		No	No	QAI	No	1	0	1
1364	Aves	Estrildidae	Poephila cincta atropygialis	black-throated finch (black-rumped subspecies)	C		No	No	Q	No	1	0	1
1704	Aves	Falconidae	Falco cenchroides	nankeen kestrel	C		No	No	QAI	No	2	0	2
1678	Aves	Gruidae	Antigone rubicunda	brolga	C		No	No	QAI	No	2	0	2
1539	Aves	Meliphagidae	Entomyzon cyanotis	blue-faced honeyeater	C		No	No	QAI	No	2	0	2
1500	Aves	Meliphagidae	Manorina melanocephala	noisy miner	C		No	No	QA	No	1	0	1
1493	Aves	Meliphagidae	Philemon citreogularis	little friarbird	C		No	No	QAI	No	2	0	2
1589	Aves	Monarchidae	Grallina cyanoleuca	magpie-lark	C		No	No	QAI	No	2	0	2
1453	Aves	Neosittidae	Daphoenositta chrysoptera	varied sittella	C		No	No	QAI	No	2	0	2
1680	Aves	Otididae	Ardeotis australis	Australian bustard	C		No	No	QAI	No	2	0	2
1392	Aves	Pardalotidae	Pardalotus striatus	striated pardalote	C		No	No	QA	No	3	0	3
1339	Aves	Petroicidae	Microeca fascinans	jacky winter	C		No	No	QAI	No	2	0	2
1261	Aves	Phalacrocoracidae	Microcarbo melanoleucos	little pied cormorant	C		No	No	QAI	No	1	0	1
1263	Aves	Phalacrocoracidae	Phalacrocorax sulcirostris	little black cormorant	C		No	No	QA	No	1	0	1
1249	Aves	Podicipedidae	Tachybaptus novaehollandiae	Australasian grebe	C		No	No	QAI	No	1	0	1
1318	Aves	Pomatostomidae	Pomatostomus temporalis	grey-crowned babbler	C		No	No	QAI	No	1	0	1
1137	Aves	Psittaculidae	Platycercus adscitus adscitus	pale-headed rosella (northern form)	C		No	No	Q	No	1	0	1
1125	Aves	Psittaculidae	Trichoglossus moluccanus	rainbow lorikeet	C		No	No	QA	No	2	0	2
1161	Aves	Ptilonorhynchidae	Chlamydera nuchalis	great bowerbird	C		No	No	QA	No	1	0	1
1686	Aves	Rallidae	Fulica atra	Eurasian coot	C		No	No	QAI	No	1	0	1
1673	Aves	Rallidae	Gallinula tenebrosa	dusky moorhen	C		No	No	QAI	No	1	0	1
1576	Aves	Rhipiduridae	Rhipidura leucophrys	willie wagtail	C		No	No	QAI	No	2	0	2
1084	Mammalia	Bovidae	Bos taurus	European cattle			No	No	II	No	1	0	1
1068	Mammalia	Canidae	Canis familiaris (dingo)	dingo			No	No	QA	No	1	0	1
860	Mammalia	Phascolarctidae	Phascolarctos cinereus	koala	E	E	No	Yes	QA	No	1	0	1
1080	Mammalia	Suidae	Sus scrofa	pig			No	No	II	No	1	0	1
10598	Equisetopsida	Asteraceae	Blumea				No	No		No	1	0	1
8407	Equisetopsida	Asteraceae	Praxelis clematidea				No	No	NAQ	No	1	0	1
9312	Equisetopsida	Boraginaceae	Heliotropium cunninghamii		C		No	No	NTQ	No	1	1	1
9087	Equisetopsida	Casuarinaceae	Casuarina cunninghamiana		C		No	No	NTQ	No	5	0	5

WN Taxon ID	Class	Family	Scientific name	Common name	NCA status	EPBC status	Superseded	Conservation significant	Establishment	Sensitive species	Sighting records	Specimen records	Sighting summary
10539	Equisetopsida	Convolvulaceae	Evolvulus alsinoides var. sericeus		C		No	No	NTQ	No	1	1	1
8466	Equisetopsida	Cupressaceae	Callitris intratropica	coast cypress pine	C		No	No	NTQ	No	1	0	1
12420	Equisetopsida	Cyperaceae	Cyperus polystachyos		C		No	No	NTQ	No	1	0	1
17341	Equisetopsida	Cyperaceae	Eleocharis geniculata		C		No	No	NTQ	No	1	0	1
41293	Equisetopsida	Cyperaceae	Machaerina rubiginosa		C		No	No	NTQ	No	1	0	1
16220	Equisetopsida	Cyperaceae	Scleria brownii		C		No	No	NTQ	No	2	2	2
17057	Equisetopsida	Goodeniaceae	Goodenia armitiana		C		No	No	NTQ	No	1	1	1
15714	Equisetopsida	Leguminosae	Acacia				No	No		No	3	2	3
18207	Equisetopsida	Leguminosae	Acacia colei var. colei		C		No	No	NTQ	No	1	1	1
15751	Equisetopsida	Leguminosae	Acacia hammondii		C		No	No	NTQ	No	1	1	1
15755	Equisetopsida	Leguminosae	Acacia holosericea		C		No	No	NNQ	No	1	0	1
15728	Equisetopsida	Leguminosae	Acacia nesophila		C		No	No	NTQ	No	1	1	1
31404	Equisetopsida	Leguminosae	Acacia victoriae subsp. fasciaria		C		No	No	NTQ	No	1	1	1
15501	Equisetopsida	Leguminosae	Clitoria ternatea	butterfly pea			No	No	NAQ	No	1	1	1
18750	Equisetopsida	Leguminosae	Sesbania cannabina		C		No	No	NTQ	No	1	0	1
12876	Equisetopsida	Leguminosae	Stylosanthes scabra				No	No	NAQ	No	1	0	1
22197	Equisetopsida	Malvaceae	Sida hackettiana		C		No	No	NTQ	No	1	1	1
17144	Equisetopsida	Moraceae	Ficus opposita		C		No	No	NTQ	No	1	0	1
17763	Equisetopsida	Myrtaceae	Calytrix leptophylla		C		No	No	NTQ	No	1	1	1
17247	Equisetopsida	Myrtaceae	Eucalyptus camaldulensis		C		No	No	NTQ	No	15	0	15
9766	Equisetopsida	Myrtaceae	Lophostemon grandiflorus		C		No	No	NTQ	No	2	0	2
16684	Equisetopsida	Myrtaceae	Melaleuca bracteata		C		No	No	NTQ	No	2	1	2
18283	Equisetopsida	Myrtaceae	Melaleuca fluviatilis		C		No	No	NTQ	No	26	0	26
13420	Equisetopsida	Onagraceae	Ludwigia octovalvis	willow primrose	C		No	No	NTQ	No	2	1	2
16568	Equisetopsida	Pandanaceae	Pandanus				No	No		No	1	0	1
16660	Equisetopsida	Pentapetaceae	Melhania oblongifolia		C		No	No	NTQ	No	1	1	1
16473	Equisetopsida	Phyllanthaceae	Phyllanthus virgatus		C		No	No	NTQ	No	1	1	1
11119	Equisetopsida	Poaceae	Aristida calycina var. praealta		C		No	No	NTQ	No	1	1	1
20228	Equisetopsida	Poaceae	Arundinella				No	No		No	1	0	1
15606	Equisetopsida	Poaceae	Bothriochloa pertusa				No	No	NAQ	No	1	1	1
15483	Equisetopsida	Poaceae	Cymbopogon bombycinus	silky oilgrass	C		No	No	NTQ	No	1	1	1
15486	Equisetopsida	Poaceae	Cynodon dactylon				No	No	NAQ	No	1	0	1
14567	Equisetopsida	Poaceae	Echinochloa colona	awnless barnyard grass			No	No	NAQ	No	1	0	1
10338	Equisetopsida	Poaceae	Enneapogon robustissimus		C		No	No	NTQ	No	1	1	1
10343	Equisetopsida	Poaceae	Eragrostiella bifaria var. bifaria		C		No	No	NTQ	No	1	1	1
10532	Equisetopsida	Poaceae	Eragrostis				No	No		No	1	0	1
2869	Equisetopsida	Poaceae	Eragrostis fallax		C		No	No	NTQ	No	1	1	1
15382	Equisetopsida	Poaceae	Eriachne ciliata		C		No	No	NTQ	No	1	1	1
15169	Equisetopsida	Poaceae	Oxychloris scariosa	winged chloris	C		No	No	NTQ	No	1	1	1
17181	Equisetopsida	Santalaceae	Exocarpos latifolius		C		No	No	NTQ	No	1	0	1
29780	Equisetopsida	Sparrmanniaceae	Corchorus subargenteus		NT		No	Yes	NTQ	No	1	1	1
12527	Equisetopsida	Typhaceae	Typha domingensis		C		No	No	NTQ	No	1	0	1

Appendix C BESS Survey Summary Report



Prepared for Genex Power

BESS Survey Summary

Kidston Wind Project

November 2024

Project Number: 220205

BESS Survey Summary

Kidston Wind Project

Document verification

Project Title:	Kidston Wind Project
Project Number:	220205
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Revision	Date	Prepared by	Approved by
Draft v1.0	21/10/2024	Jamie Nielsen	Jo Davis
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We acknowledge the traditional owners of this land and pay our respect to Elders past, present and emerging. We recognise that the First Nations peoples of Australia have traditionally managed the resources of this land in a sustainable way, and that they are the original stewards of the Australian environment.

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Acronyms and abbreviations

BESS	Battery Energy Storage System
RE	Regional Ecosystem
WONS	Weed of National Significance

1.1. Introduction

Ecological surveys were conducted at the Battery Energy Storage System (BESS) area on the 7th and 8th of August 2024, here on referred to as the BESS Project Area. Surveys were conducted by Greg Calvert (Principal Ecologist) and Jamie Nielsen (Graduate Ecologist). Field survey methods consisted of regional ecosystem (RE) ground truthing, fauna habitat surveys and weed surveys. Fauna species were recorded incidentally as they were observed on site.

The BESS Project Area is located directly north of the Kidston Solar Project in North Queensland, running on the eastern side of Gilberton Road (Figure 1-1). The area covers a total of 8.53 ha and consisted of primarily non-remnant vegetation and several discrete patches of RE 9.11.15a. The BESS Project Area does not contain any waterbodies mapped on the Queensland VM watercourse and drainage feature map. However, an unmapped minor natural watercourse is present on the western side of the BESS Project Area, running parallel to an artificial drainage line that runs east to west through the centre of the BESS Project Area.

1.2. Ground-truthed regional ecosystems

Only one regional ecosystem is present in the BESS Project Area, RE 9.11.15a. This RE is present as three small patches in the south of the BESS Project Area (Figure 1-2). Overall, the vegetation in the BESS Project Area is in poor condition, driven by clearing, edge effects, weed abundance and grazing. Rubber vine (*Cryptostegia grandiflora*) was present within the non-remnant vegetation and is classed as a Category 3 restricted invasive plant and a Weed of National Significance (WONS). Vegetation in the BESS Project Area is detailed in Table 1.


LEGEND
BESS Project Area
Ingham
Townsville
0
0.75
1.5 km
Datum: GDA2020 / MGA Zone 55
NGH
Kidston BESS Survey Summary
Figure 1-1 BESS Project Area
Ref: 22-205 Kidston Wind Farm WWBW Bio 20240827 \ BESS Project Area Author: Jamie Nielsen Date created: 01.11.2024 © NGH 2024 © ESRI 2022

Table 1 Ground-truthed vegetation descriptions

RE	Field description	Class (VM Act)	BESS BESS Project Area	Representative photo
9.11.15a	Open woodland of *Eucalyptus crebra* (narrow-leaved ironbark) in association with *Eucalyptus microneura* (Gilbert river box), *Corymbia erythrophloia* (red bloodwood) and the occasional *Acacia salicina* (willow wattle). The predominant canopy height and cover ranged from 10.5 - 14 m and 25 – 35% respectively. The sub-canopy was relatively sparse covering approximately 15% of the area with the dominant species being *Melaleuca citrolens* (paperbark). Species that were present at a lesser frequency included *Terminalia aridicola* (arid peach), *Petalostigma banksii* (smooth-leaved quinine), *Hakea lorea* (bootlace oak), *Dolichandrone alternifolia* (lemonwood), *Melaleuca citrolens* (gulbarn). *P. pubescens, Acacia holosericea* (silver wattle) and *Carissa lanceolata* (conkerberry) were the dominate species in a sparingly scattered shrub layer, with occasional *A. salicina*, *Alphitonia excelsa* (soap bush), *Atalaya hemiglauca* (whitewood), and *Melaleuca citrolens* (gulbarn). Environmental weeds dominated the ground layer, predominantly *Bothriochloa pertusa* (Indian couch), with *Sida cordifolia* (flannel weed) and *Sida acuta* (spineyhead sida) also occurring frequently. Native species *Achyranthes aspera* (devil's whip) and *Aristida calycina* var. *calycina* (dark wiregrass) were also common. This RE occurs on metamorphic geologies on relatively flat plains.	LC	1.47	

Non-rem	The northern portion of the BESS Project Area was previously cleared and contained a large water hold in the late 1990's. A revegetation site is now present on the top of an artificial landform of unknown geology. The area contains a mixture of local and non-local flora species from different bioregions most notably *Senna notables* (cockroach bush), *Eucalyptus leichhardtii* (rusty jacket) and *Acacia auriculformis* (black wattle). It contains a mixture of species from both woodland and riparian communities. The area does not resemble any particular RE, although does contain some elements of the adjacent RE 9.11.15a with the presence of extremely sparse *E. crebra and A. salicina*. Most of the vegetation is short lived Acacias, especially *Acacia holosericea* and soil structure is very shallow, leading to common uprooting of larger trees. Annual *Sesbania cannabina* is widespread and would cause seasonally dense thickets during the wet season. Longer lived plants are spatially uncommon so there's nothing to regenerate after Acacias have senesced. At the southern end of the revegetation area there is a drainage line that is dominated by *E. crebra* and *A. salicina. Cryptostegia grandiflora* (rubber vine) was common at the western section of the drainage line and at the north-western section of the BESS Project Area (Figure 1).		7.06	


LEGEND
Rubber vine (Cryptostegia grandiflora)
Habitat features
Drainage line
Exposed waterhole
Hollow bearing tree
Hollow log
Log pile
Nest
Stagnant water
Ground-truthed regional ecosystem
9.11.15a
non-rem
BESS Project Area
0
75
150 m
Datum: GDA2020 / MGA Zone 55
NGH
Kidston BESS Survey Summary
Figure 1-2 Survey results
Ref: 22-205 Kidston Wind Farm WWBW Bio 20240827 | Bess area RE and hab features Author: Jamie Nielsen Date created: 01.11.2024 © NGH 2024 © ESRI 2022

1.3. Flora species

A total of 53 flora species were recorded in the BESS Project Area. This included 10 environmental weeds and one Weeds of National Significance, *Cryptostegia grandiflora* (rubber vine). A complete list of flora recorded in the BESS Project Area is provided in Table 2.

Table 2 Flora species within the BESS Project Area

Scientific name	Common name	Biosecurity/pest status	9.11.15a	Non-rem creek	Non-rem	Non-rem (revegetation site)
Acacia auriculiformis	Northern black wattle					1
Acacia colei	Cole's wattle					1
Acacia holosericea	Silver wattle		1	1	1	1
Acacia leptoloba	Irvinebank wattle					1
Acacia salicina	Willow wattle		1			1
Acacia victoriae	gundabluie					1
Achyranthes aspera	Devil's whip		1	1		1
Alphitonia excelsa	Soap bush		1			
Aristida calycina var. *calycina*	Dark wiregrass					1
Atalaya hemiglauca	Whitewood		1			
Bothriochloa pertusa	Indian couch	Environmental weed	1	1		
Carissa lanceolata	Conkerberry		1	1		
Casuarina cunninghamiana	River she-oak					1
Corymbia confertiflora	Cabbage gum					1
Corymbia erythrophloia	Variable barked bloodwood		1			

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Kidston Wind Project

Corymbia leichhardtii	Leichhardt's rusty jacket					1
Corymbia setosa	Rough-leaved bloodwood		1			
Cryptostegia grandiflora	Rubber vine	Category 3 restricted matter, Weed of National Significance		1		1
Cymbidium canaliculatum	Black orchid		1			
Cynodon dactylon var. *dactylon*	Green couch	Environmental weed		1		1
Dolichandrone alternifolia	Lemonwood		1			
Eclipta prostrata	White eclipta			1		
Eragrostis sp.			1			
Eucalyptus camaldulensis	River red gum					1
Eucalyptus crebra	Narrow-leaved ironbark		1			
Eucalyptus microneura	Gilbert river box		1			
Fimbristylis dichotoma	Common fringe-sedge			1		
Gardenia vilhelmii	Bread tree of the Lynd		1			
Hakea lorea	Bootlace oak		1			
Heteropogon contortus	Black spear grass			1		1
Ludwigia octovalvis	Willow primrose			1		
Maytenus cunninghamii	Yellow-berry bush		1			
Melaleuca citrolens	Paperbark, gulbarn		1			
Melaleuca fluviatilis	Pendulous paperbark					1
Melaleuca viminalis	Weeping bottlebrush			1		
Mesosphaerum suaveolens	Horehound	Environmental weed	1	1		
Passiflora foetida	Stinking passionfruit	Environmental weed			1	1
Petalostigma banksii	Smooth-leaved quinine		1			

BESS Survey Summary

Kidston Wind Project

Pterocaulon redolens	Apple bush					1
Pterocaulon serrulatum var. *serrulatum*	Ragwort					1
Senna notabilis	Cockroach bush					1
Senna occidentalis	Coffee senna	Environmental weed	1	1		1
Sesbania cannabina	Sesbania pea					1
Sida acuta	Spinyhead sida	Environmental weed	1			
Sida cordifolia	Flannel weed	Environmental weed	1	1		
Sida hackettiana	Native sida		1			
Themeda quadrivalvis	Grader grass	Environmental weed	1			
Stylosanthes hamata	Caribbean stylo	Environmental weed	1			
Stylosanthes scabra	Scrubby stylo	Environmental weed	1			
Terminalia aridicola	Arid peach		1			
Typha domingensis	Bulrush			1		
Ventilago viminalis	Supplejack		1			
Waltheria indica	Sleepy mornings			1		

1.4. Habitat types

The BESS Project Area is predominately non-remnant vegetation of low quality, with three discrete patches of Eucalypt woodland present. Habitat features were primarily present within the Eucalypt woodland including hollow-bearing trees, nests and a hollow log. Habitat types within the BESS Project Area are detailed in Table 3.

Table 3 Habitat types in the BESS Project Area

Habitat type and associated RE	Description	BESS Area (ha)	Representative photo
Eucalypt woodland (RE 9.11.15a)	Open woodland of mixed species including *Eucalyptus crebra, Eucalyptus microneura*, *Corymbia erythrophloia* and the occasional *Acacia salicina*. An open sub-canopy and sparse shrub layer were present. Native grasses in the area included *Aristida calycina* var. *calycina* and eragrostis sp. Habitat features include hollow bearing trees and large eucalypts with stick nests. This habitat type is suitable foraging and dispersal habitat for koala, with locally important koala trees *E. crebra* dominant. Koalas are known to be in the area with the species being confirmed in similar habitat in nearby surveys for the Kidston windfarm. This habitat type provides potential foraging habitat for white-throated needletail, fork-tailed swift and oriental cuckoo.	1.47	

BESS Survey Summary

Kidston Wind Project

Habitat type and associated RE	Description	BESS Area (ha)	Representative photo
Non-remnant vegetation	Habitat that has been previously cleared, modified, or degraded such that it no longer reflects its natural state. This includes the revegetated site at the northern end of the BESS Project Area. Flowering Eucalyptus provide a seasonal nectar source for birds. An artificial waterway provides water sources for birds, macropods, reptiles and frogs. Site is heavily grazed, native grounds cover species uncommon, some minor use by macropod species noted. It is unlikely that this habitat type is suitable for any threatened terrestrial species.	7.06	

1.5. Habitat features and animal breeding places

Habitat features and potential breeding places recorded in the BESS Project Area include stick and mud nests, hollow logs, log piles, hollow bearing trees and minor waterbodies. Stick nests were present throughout the remnant habitat and non-remnant areas in the northern portion of the site where some taller trees were present. Hollow bearing trees were only present within the remnant habitat of RE 9.11.15a. Tree hollows were rare and typically small.

Log piles and hollow logs are present scarcely throughout the BESS Project Area occurring mostly along the artificial drainage line and the edges of remnants sections from previous clearing activities. There was both small and medium openings within the hollow logs and log piles providing shelter for small mammals and reptiles. Two water sources were present within the BESS Project Area, one seasonal and the other an artificial drainage line that was degraded and presented as turbid due to livestock trampling through. The drainage line contained water at the time of the August survey during the dry season indicating this waterway provides a year-round water source for fauna such as mammals, reptiles and birds

Examples of habitat features and animal breeding places that were recorded are provided in Plate 1-1



Plate 1-1 Habitat features and breeding places

1.6. Fauna species

A total of 33 fauna species were recorded in the BESS Project Area. No threatened species or non-native fauna were recorded. A complete list of fauna species recorded in the BESS Project Area is provided in Table 4.

Table 4 Fauna species recorded within the BESS Project Area

Scientific name	Common name
Birds	
Aprosmictus erythropterus	Red-winged parrot
Ardeotis australis	Australian bustard
Cacatua galerita	Sulphur-crested cockatoo
Certhionyx pectoralis	Banded honeyeater
Coracina novaehollandiae	Black-faced cuckooshrike
Corvus orru	Torresian crow
Cracticus nigrogularis	Pied butcherbird
Egretta novaehollandiae	White-faced heron
Entomyzon cyanotis	Blue-faced honeyeater
Geopelia placida	Peaceful dove
Geophaps scripta peninsulae	Squatter pigeon (Northern)
Grallina cyanoleuca	Magpie-lark
Gymnorhina tibicen	Australian magpie
Haliastur sphenurus	Whistling kite
Lichenostomus flavus	Yellow honeyeater
Lichmera indistincta	Brown honeyeater
Lichmera indistincta	Brown honeyeater
Manorina melanocephala	Noisy miner
Milvus migrans	Black kite
Myiagra inquieta	Restless flycatcher
Ocyphaps lophotes	Crested pigeon
Oriolus sagittatus	Olive-backed oriole
Pardalotus striatus	Striated pardalote
Philemon citreogularis	Little friarbird
Philemon corniculatus	Noisy friarbird
Platycercus adscitus	Pale-headed rosella
Podargus strigoides	Tawny frogmouth
Rhipidura leucophrys	Willie wagtail
Struthidea cinerea	Apostlebird

Trichoglossus moluccanus	Rainbow lorikeet
Mammals	
Osphranter robustus	common wallaroo
Reptiles	
Cryptoblepharus pannosus	ragged snake-eyed skink

1.7. Conclusion

Ecological surveys were undertaken over two days at the site of the proposed BESS. The BESS Project Area is comprised predominantly of non-remnant vegetation of poor condition, and which provides limited resources for fauna. Remnant vegetation in the BESS Project Area is dominated by *E. crebra* and is in moderate condition. These areas provide some habitat for wildlife, such as tree hollows and log piles. Overall, the habitat is in poor condition, although it does provide low quality foraging habitat for koala. It would also be suitable transient habitat for birds migrating through. It is unlikely that clearing for a BESS alone would result in a significant impact to matters of environmental significance.

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Appendix F Risk Management Assessment Report

TECHNICALLY SUPERIOR
RISK MANAGEMENT

Fyfe Pty Ltd

Kidston Battery Energy Storage System
Risk Management Assessment Report

Release 1, 25 June 2026

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DOCUMENT CONTROL

Document	Kidston Battery Energy Storage System Risk Management Assessment Report
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Project Manager	Samara Smith
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Release	Issue Date	Reviewed	Approved	R4Risk Ref.	Comments
A	5-May-2026	B. Cooper	B. Cooper	314-02	DRAFT - Issued for client comment
1	25-Jun-2026	B. Cooper	B. Cooper	314-02	Issued following client comment

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APPENDIX A: RISK REGISTER A.1

1 EXECUTIVE SUMMARY

Fyfe Pty Ltd (Fyfe), on behalf of K3W Project Co Pty Ltd (K3W) engaged R4Risk to undertake a Risk Management Assessment Report (RMAR) for the proposed Kidston Battery Energy Storage System (BESS), located near Kidston, in Far North Queensland ("the Project"). The Project comprises a stand-alone grid-forming BESS of up to 250 MW/1,250 MWh, which will connect to the existing Aurumfield Substation.

Consistent with Queensland's planning framework, the RMAR was undertaken to demonstrate that the Project does not result in unacceptable adverse impacts on people, the environment, or infrastructure, and that fire and other environmental risks are avoided or mitigated through appropriate design and risk controls.

The scope of the risk assessment was to identify the hazards associated with the proposed BESS and qualitatively assess the risks. The assessment considered both hazards arising from the Project and externally initiated hazards impacting the Project (e.g. natural hazards). The risks were assessed based on the following impact categories:

- Health and safety
- Natural environment
- Built environment.

The following key project infrastructure was included in the assessment:

- Battery units
- Power conversion systems
- Project Substation
- Site facilities (i.e. storage facilities).

A total of 29 hazardous events were identified. Of those, 20 hazardous events were assessed as having the potential for off-site consequences. The outcomes of the off-site risk assessment are summarised in Table 1 and are as follows:

- Seven were assessed as having a *Very Low* residual risk
- Nine were assessed as having a *Low* residual risk
- Four were assessed as having a *Medium* residual risk
- No *High* or *Extreme* residual risks were identified.

The hazardous events with a *Very Low* residual risk were considered broadly acceptable and hence meet the intent of the performance outcomes. The hazardous events assessed as *Low* and *Medium* off-site risk were considered tolerable and to meet the intent of the performance outcomes, provided the identified controls are implemented and maintained.

State Code 27 [1] is a state assessment code under the State Development Assessment Provisions that applies to developments for battery storage facilities in Queensland. Identified risks were assessed against the relevant performance outcomes (POs) of State Code 27: Battery storage facility development. The RMAR demonstrates that risks to human health and safety, and to the built and natural environment arising from the Project have been minimised and are tolerable, using recognised hazard and risk criteria, thereby meeting the objectives of State Code 27. The POs and the assessed Project impact is summarised in Table 2.

Table 1: Off-Site Risks

Hazard No.	Hazardous Event	Potential Impact	Consequence Category	Likelihood Rating	Consequence Severity	Risk Rating
1	Battery module component failure	Thermal runaway	Health and Safety	Unlikely	Minor	Low
2	Overcharging / high-rate charging	Thermal runaway	Health and Safety	Unlikely	Minor	Low
3	Battery module coolant leak	Thermal runaway	Health and Safety	Unlikely	Minor	Low
4	Battery module electrolyte leak	Thermal runaway	Health and Safety	Unlikely	Minor	Low
10	Loss of containment of firefighting run-off water	Ground/water contamination	Environmental	Rare	Moderate	Low
12	Erosion	Ground/water contamination	Environmental	Rare	Moderate	Low
13	Loss of auxiliary power	Thermal runaway	Health and Safety	Unlikely	Minor	Low
14	External response to emergency	Impact to emergency responders	Health and Safety	Rare	Major	Medium
17	HV Powerline Failure	Thermal runaway	Health and Safety	Rare	Minor	Very Low
18	Aircraft crash	Thermal runaway	Health and Safety	Rare	Minor	Very Low
19	Vehicle impact	Thermal runaway	Health and Safety	Unlikely	Minor	Low
20	Tampering	Thermal runaway	Health and Safety	Rare	Minor	Very Low
21	Damage from wildlife	Thermal runaway	Health and Safety	Rare	Minor	Very Low
22	High ambient temperature	Thermal runaway	Health and Safety	Rare	Minor	Very Low
23	Low ambient temperature	Thermal runaway	Health and Safety	Rare	Minor	Very Low
24	Lightning strike	Thermal runaway	Health and Safety	Possible	Minor	Medium
25	Bushfire	Thermal runaway	Health and Safety	Possible	Minor	Medium
26	Flooding	Thermal runaway	Health and Safety	Unlikely	Minor	Low
27	Cyclone	Thermal runaway	Health and Safety	Rare	Minor	Very Low
28	Storm	Thermal runaway	Health and Safety	Possible	Minor	Medium

Table 2: Off-Site Risk Performance Outcomes

Performance Outcome	Criteria Requirement	Assessed Impact	Outcomes
PO2 – Risk Mitigation	Development is designed, sited and constructed to ensure that risks from physical hazards, chemical hazards and battery failure hazards are avoided and/or mitigated with respect to: • Human health and safety; and • The built and natural environment.	The hazardous events identified for the Project will be managed to reduce the associated risks to a tolerable level. Therefore, this outcome is satisfied.	Satisfied
PO3 – Risk Mitigation	Development mitigates the risks of fire, explosion and thermal runaway from battery storage infrastructure.	The hazardous events identified for the Project will be managed to reduce the associated risks to a tolerable level. Therefore, this outcome is satisfied.	Satisfied
PO4 – Risk Mitigation	Development is designed to ensure fire and thermal events can be contained and isolated to prevent escalation and propagation to other developments and uses on and offsite.	The hazardous events identified for the Project will be managed to reduce the associated risks to a tolerable level. Therefore, this outcome is satisfied.	Satisfied
PO5 – Incident Response	Development is designed to facilitate effective and efficient emergency service access and response in the event of a fire, bushfire (including cleared firefighting areas at the interface of hazardous vegetation), explosion, contamination leak or any other incident requiring an emergency service response.	The following controls have been identified to reduce the associated risks to a tolerable level: • Emergency Site Access • Operational Emergency Management Plan. With these controls in place, the Project will satisfy this performance outcome.	Satisfied
PO6 – Incident Response	The development: • Provides appropriate fire detection, monitoring and notification to the site operator; and • Ensures the electrical safety of the facility, in the event of an incident requiring emergency response.	The following controls have been identified to reduce the associated risks to a tolerable level: • Firefighting Infrastructure • SCADA and Operator Response • Operational Emergency Management Plan. With these controls in place, the Project will satisfy this performance outcome.	Satisfied
PO7 – Incident Response	Development demonstrates that there is capacity to provide a reliable, sustainable and fit-for-purpose water supply.	The following controls have been identified to reduce the associated risks to a tolerable level: • Firefighting Infrastructure With these controls in place, the Project will satisfy this performance outcome.	Satisfied

2 ACRONYMS AND GLOSSARY

2.1 ACRONYMS

APZ	Asset Protection Zone
AS	Australian Standard
AS/NZS	Australian/New Zealand Standard
BESS	Battery energy storage system
BMP	Bushfire Management Plan
BMS	Battery management system
CEMP	Construction environmental management plan
CO	Carbon monoxide
DES	Design controls
DG	Dangerous goods
ELF	Extra low frequency
EMF	Electromagnetic field
FSS	Fire Safety Study
Fyfe	Fyfe Pty Ltd
HCN	Hydrogen cyanide
HF	Hydrogen fluoride
H&S	Health and safety
HV	High voltage
IP	Ingress protection
MW	Megawatt
MVPS	Medium-voltage power systems
NFPA	National Fire Protection Association
NHRA	Natural Hazards Risk Assessment
OEM	Original equipment manufacturer
OEMP	Operational emergency management plan
OHTL	Overhead transmission line
OPS	Operational controls
PCS	Power conversion systems
PO	Performance outcome
RMAR	Risk management assessment report
SCADA	Supervisory control and data acquisition
SDS	Safety data sheet
SFAIRP	So far as is reasonably practicable
SFPE	Society of Fire Protection Engineers
UPS	Uninterruptible power supply

2.2 GLOSSARY

Battery energy storage system (BESS)	(a) A complete installation that – (i) converts electricity into stored energy; and (ii) releases stored energy as electricity; and (b) includes any equipment necessary for the operation of the plant, including battery units (containing battery cells, modules and racks), power conversion systems, control systems, balance-of-plant, site infrastructure, and grid connection assets.
Battery unit	A pre-assembled system of battery cells arranged into modules and racks within a container, including auxiliary equipment required for operation, monitoring and protection, such as the battery management system (BMS).
Cause	The initiating event or condition that directly leads to a loss of control of a hazard, resulting in a hazardous event.
Consequence	An outcome or impact resulting from a hazardous event that reflects the magnitude and severity of the event in terms of effects on human health and the built and natural environment.
Control	Any system, procedure, process, device or other means of eliminating, preventing, reducing or mitigating the risk of a hazardous event. Controls include physical equipment, process control systems, management processes, operating or maintenance procedures, the emergency plan and key personnel and their actions. Identified controls were classified according to the following categories • Original equipment manufacturer (OEM) • Project design controls (DES) • Operational controls (OPS).
Environment	Environment includes— (a) ecosystems and their constituent parts, including people and communities; and (b) all natural and physical resources; and (c) the physical characteristics of locations, places and areas, however large or small; and (d) the physical surroundings of people, including the land, waters, atmosphere, climate, sound, odours and tastes; and (e) the social, economic, aesthetic and cultural conditions that affect, or are affected by, things mentioned in paragraphs (a) to (d).
Hazard	An operation, activity or material with the potential to cause harm to people, property, the environment, business or some combination of these. A source of harm.
Likelihood	The probability or frequency of a hazardous event occurring, expressed in terms of how often or how easily it may happen. Likelihood is one of the two key components of risk, alongside severity.
Mitigation	The means for reducing the scale of the consequences of a hazardous event once it occurs. This includes approaches to minimising impacts, limiting escalation, and identification of suitable control measures.
Prevention	The means for reducing the likelihood of a hazardous event occurring. This includes approaches to inherent safety and the identification of suitable control measures that prevent a hazardous event from occurring.
The Project	The BESS is being developed as part of the Kidston BESS Project, referred to as “the Project”.
Project Substation	The BESS will connect to the Project Substation, which forms part of the Project site, that will raise the voltage to the level required for connection to the Aurumfield Substation.
Residual risk	The risk that remains after all proposed control measures for the establishment have been properly implemented.

Risk	The combination of likelihood and consequences. i.e. the chance of an event happening that can cause specific consequences.
SFAIRP	"So Far As Is Reasonably Practicable" – To reduce risk to a level so far as is reasonably practicable involves balancing reduction in risk against the time, trouble, difficulty and cost of achieving it. This activity requires consideration of: a) the likelihood of the hazard or risk concerned eventuating b) the degree of harm that would result if the hazard or risk eventuated c) what the person concerned knows, or ought reasonably to know, about the hazard or risk and any ways of eliminating or reducing the hazard or risk d) the availability and suitability of ways to eliminate or reduce the hazard or risk e) the cost of eliminating or reducing the hazard or risk.

3 INTRODUCTION

Fyfe Pty Ltd (Fyfe), on behalf of K3W Project Co Pty Ltd (K3W), requested R4Risk to complete a risk management assessment report (RMAR) for the proposed battery energy storage system (BESS) currently being developed as part of the Kidston BESS Project ("the Project").

The Project is being developed as part of the Kidston Clean Energy Hub ("Clean Energy Hub") near the town of Kidston in Far North Queensland. The Project comprises a stand-alone grid-forming BESS of up to 250 MW/1,250 MWh, which will connect to the existing Aurumfield Substation.

Consistent with Queensland's State Code 27: Battery Storage facility development [1], this RMAR was undertaken to demonstrate that the Project does not result in unacceptable adverse impacts on people, the environment, or infrastructure in surrounding land uses, and that fire and other environmental risks are avoided or mitigated through appropriate design and risk controls.

The scope of the risk assessment was to identify the hazards associated with the proposed BESS and qualitatively assess the risk of hazardous events that could occur. The assessment considered both hazards arising from the Project and externally initiated hazards impacting the Project (e.g. natural hazards). Risks were assessed by rating the severity of potential consequences and the likelihood of an event occurring, with mitigation applied. Risks were assessed based on the following impact categories:

- Health and safety (H&S)
- Natural environment
- Built environment.

As the Project is in the mid-development phase, some design elements have not been finalised yet and will be further developed during the detailed design stage. It is assumed that these elements will be finalised in accordance with relevant codes of practice, Australian Standards (AS) and legislation. Other assumptions or limitations have been identified in the report where appropriate (refer to Section 6).

4 STATE CODE 27: BATTERY STORAGE FACILITY DEVELOPMENT

The Queensland Planning Act 2016 [2] and the Queensland Planning Regulation 2017 [3] require that proposed developments for large-scale BESS be subject to assessment by the State Assessment and Referral Agency against the State Development Assessment Provisions State Code 27: Battery storage facility development [1].

State Code 27 establishes performance-based assessment benchmarks to ensure that battery storage facilities are appropriately located, designed, operated, and decommissioned to manage potential impacts on people, property, and the environment. The code lists 35 Performance Outcomes (POs), of which PO2 – PO7 have been the focus of this RMAR.

An overview of the State Code 27 POs relevant to this RMAR is provided in Table 3.

Table 3: State Code 27 Performance Outcomes Relevant to the RMAR [1]

Performance Outcome	Criteria Requirement
PO2 – Risk Mitigation	Development is designed, sited and constructed to ensure that risks from physical hazards, chemical hazards and battery failure hazards are avoided and/or mitigated with respect to: • Human health and safety; and • The built and natural environment.
PO3 – Risk Mitigation	Development mitigates the risks of fire, explosion and thermal runaway from battery storage infrastructure.
PO4 – Risk Mitigation	Development is designed to ensure fire and thermal events can be contained and isolated to prevent escalation and propagation to other developments and uses on and off-site.
PO5 – Incident Response	Development is designed to facilitate effective and efficient emergency service access and response in the event of a fire, bushfire (including cleared firefighting areas at the interface of hazardous vegetation), explosion, contamination leak or any other incident requiring an emergency service response.
PO6 – Incident Response	The development: • Provides appropriate fire detection, monitoring and notification to the site operator; and • Ensures the electrical safety of the facility, in the event of an incident requiring emergency response.
PO7 – Incident Response	Development demonstrates that there is capacity to provide a reliable, sustainable and fit-for-purpose water supply.

5 PROJECT DESCRIPTION

5.1 OVERVIEW

The Kidston BESS is a development proposed by K3W, near the town of Kidston in Far North Queensland. The Project comprises a stand-alone grid-forming BESS of up to 250 MW/1,250 MWh, which will connect from the Project Substation to the existing Aurumfield Substation at 275 kV. The Project is part of the Clean Energy Hub, which currently comprises the 50 MW Kidston Solar Project (operational) and the 250 MW/2,000 MWh Kidston Pumped Storage Hydro Project (under construction).

5.2 LOCATION AND SURROUNDING LAND USES

The Project is proposed within the Etheridge Shire local government area in Far North Queensland, approximately 280 km west of Townsville, near Kidston. The site is located on the historic Kidston Gold Mine and forms part of the broader Kidston Clean Energy Hub.

The BESS will be developed in the northern portion of the existing Kidston Solar Farm lot, adjacent to the Aurumfield Substation, as shown in Figure 1. Approximate distances from the Project to nearby Clean Energy Hub projects and infrastructure are as follows:

- Aurumfield Substation: 100 m
- Kidston Pumped Hydro: 300 m
- Kidston Solar Project: 500 m
- Nearest airport used to transport the Clean Energy Hub workforce: 3 km
- Clean Energy Hub workforce accommodation: 5.8 km.

The closest residential area not associated with the Clean Energy Hub is approximately 12 km away.

The BESS footprint is located within the decommissioned South Pond area, which has been subject to extensive prior ground disturbance from historic mining activities and subsequent renewable energy developments. Established access routes and electrical infrastructure associated with the Aurumfield Substation already exist on the land. The location within an existing industrial footprint reduces the need for additional land clearing, utilises established transmission and transport infrastructure linked to the Clean Energy Hub, and avoids community and residential areas.

The surrounding environment falls within the Einasleigh Uplands bioregion, comprising open woodland vegetation and a low population density. The area is classified as a rural zone under the Etheridge Shire Planning Scheme [4]. The Project location is 1.5 km from the nearest waterway, Charles Creek.

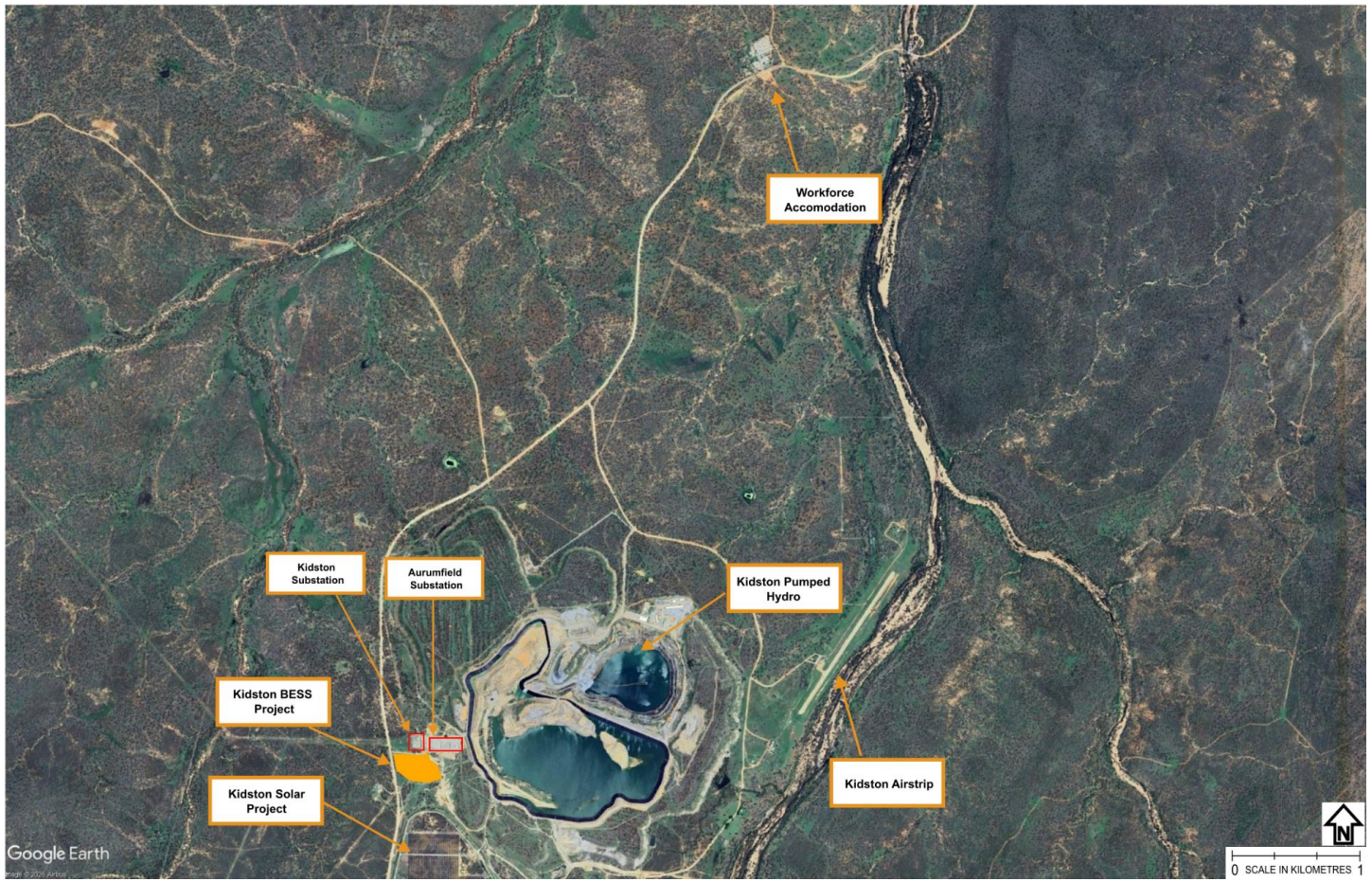


Figure 1: Kidston BESS Location

5.3 PLANT AND INFRASTRUCTURE

The proposed Project layout is shown in Figure 2. The Project area is split into two halves, separated by a 20 m wide easement for the 132kV OHTL for the Kidston Solar Project grid connection. An existing concrete pole (>20 m high) is situated in the centre of this easement area. Access to the Project will be via Gilberton Road, using the existing mine access road.

The "BESS Yard" is situated in the western half of the Project area and is arranged across four areas, separated by six metre wide access roads. As shown in Figure 3, the BESS Yard contains the battery units and associated electrical equipment. The battery units will be configured in parallel rows, with the power conversion systems (PCS) and medium voltage power systems (MVPS) units located at the ends of each row. This layout provides both operational access and additional separation between container groupings.

The eastern half of the Project area will site the Project Substation and associated site facilities, including the control room, switchgear room and storage warehouse.

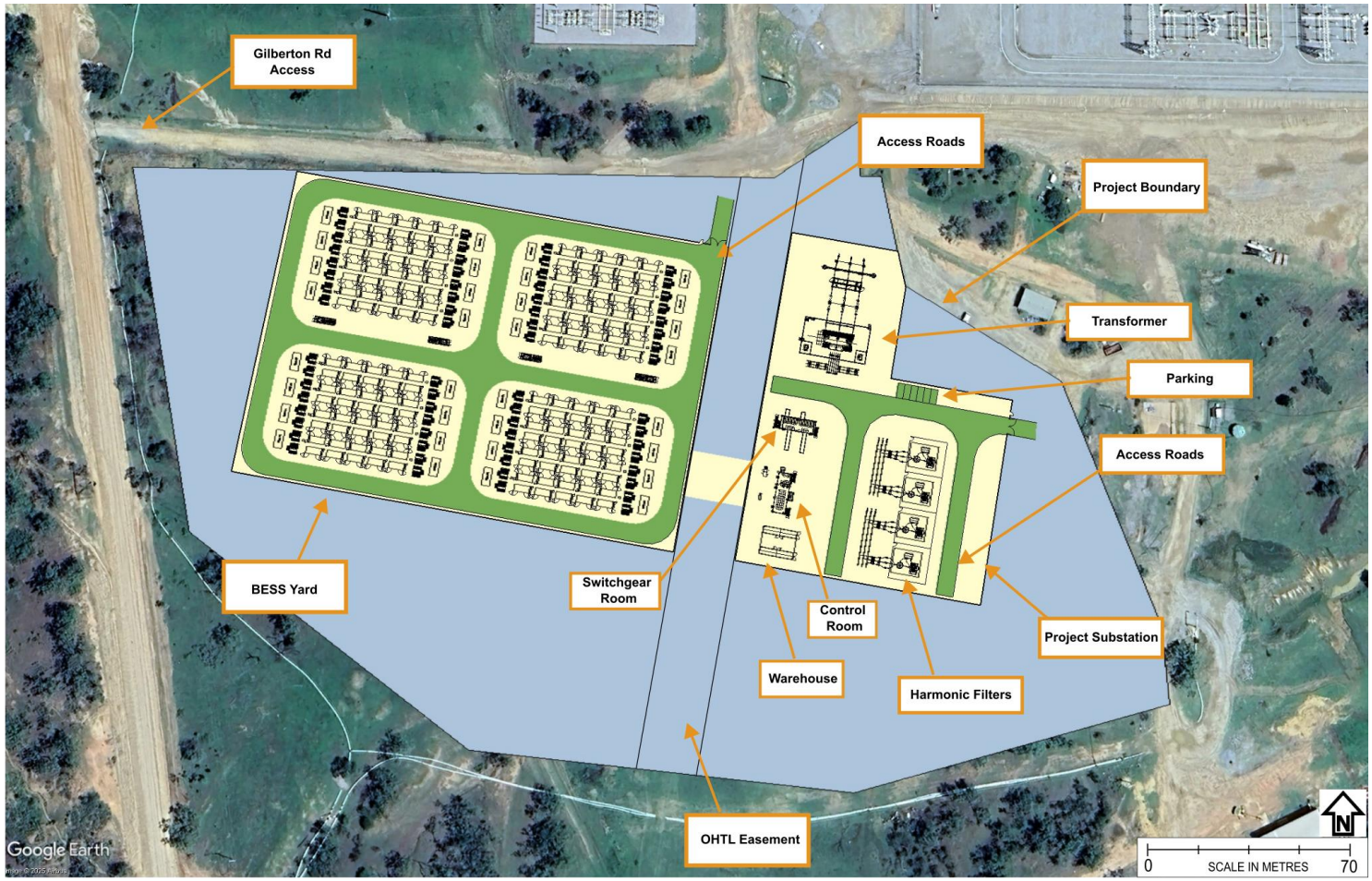


Figure 2: Kidston BESS Project Layout

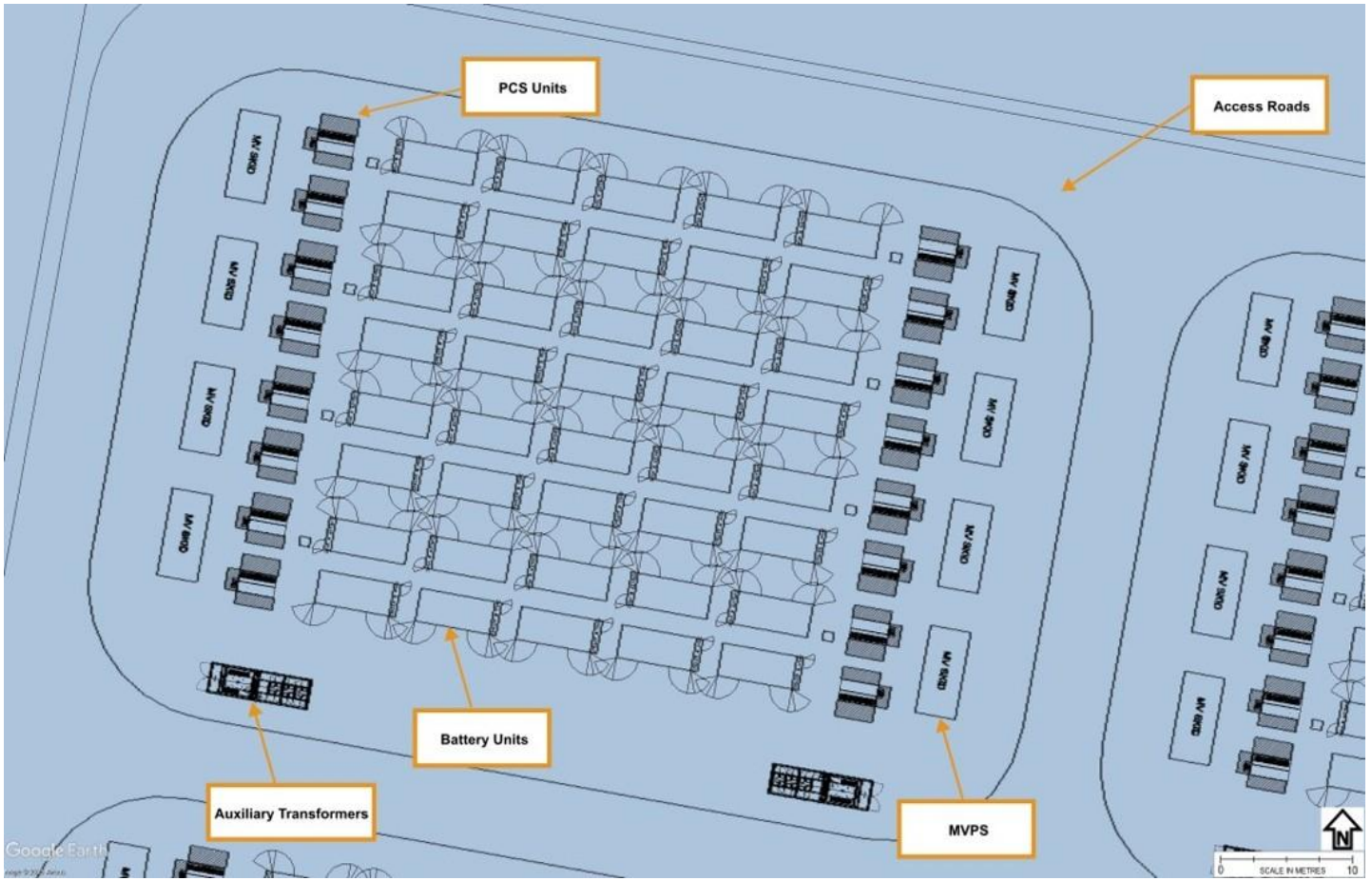


Figure 3: BESS Yard Layout

5.3.1 Battery Units

The BESS will comprise pre-assembled battery units, comparable in size to a standard 20-foot shipping container. The battery units consist of battery cells arranged into modules and racks within the container and include auxiliary equipment (e.g. a cooling system) required for operation. Up to 200 battery units will be manufactured off-site and transported to the Project for installation in the BESS yard.

The Project will use a supervisory control and data acquisition (SCADA) system and a battery management system (BMS), which together provide real-time monitoring, fault detection, remote diagnostics and operational control. A power plant controller integrated with an energy management system will manage BESS operations and ensure compliance with grid requirements.

5.3.2 General Electrical Equipment

The key electrical equipment within the BESS Yard comprises PCS, MVPS and auxiliary transformers. The PCS units contain inverters that convert stored direct current from the battery units to alternating current for export to the grid. Each MVPS includes a ring main unit and a step-up transformer. The electrical configuration comprises two PCS units shared across five battery units, with the two PCS units connected into a single MVPS, as shown in Figure 3.

In total, the Project will include up to 80 inverters and 40 step-up transformers. The PCS and MVPS will be supplied as containerised units manufactured off-site, encompassing the system components, and integrated with air-cooling systems. Underground electrical and fibre-optic cabling will link the battery units to the electrical equipment, and link these systems to the site office and distribution centre (which contain monitoring and control equipment).

5.3.3 Project Substation

The Project Substation is separated from the BESS Yard by a 132kV OHTL easement associated with the Kidston Solar Project. The Project Substation will comprise four harmonic filters and a transformer. The harmonic filters reduce electrical distortion, while the transformer raises the voltage to the level required for connection to the Aurumfield Substation. The BESS will connect from the Project Substation into the Aurumfield Substation.

5.3.4 Site Facilities

Site facilities will include operations and maintenance amenities, including accommodations for monitoring and control equipment, parking, communications equipment, and storage areas. A switchgear room, a control room and a warehouse will also be constructed adjacent to the Project Substation.

The switchgear room will house electrical switchgear and protection equipment required for the Project Substation operation, protection and isolation. The control room will accommodate monitoring, control, and communications systems. The warehouse will store minor quantities of dangerous goods (DG) required for operations and maintenance (e.g. solvents). Spare and waste battery units may also be temporarily stored in this area.

5.4 OPERATIONS

There are three stages of the Project:

- Construction and commissioning
- Operation
- Decommissioning.

The construction and commissioning phase is expected to last up to two years. This phase will include preparatory site work, construction of the site and installation of equipment, and commissioning of the plant. Up to 120 staff will be employed at the site during peak times.

The operational phase of the Project is expected to last approximately 25 years and will employ between two to four full-time staff. Operational activities will include monitoring and control of the BESS by on-site personnel and through a remote system providing real-time and historical performance information. Maintenance will cover general repairs to BESS infrastructure, internal tracks, drainage, and fencing.

At the end of the project life, the Project will be decommissioned. Decommissioning is expected to last approximately one year and will involve the removal of equipment and infrastructure.

6 STUDY ASSUMPTIONS

The Project is in the mid-development phase, and the detailed design will be completed in the lead-up to construction. The standard version of the *Grid Stack Pro 5000 V1E AESC 530Ah* ("GSP5000") battery product supplied by Fluence has been selected as the basis of design, however, the final product specification may be subject to change. The following sections detail the battery chemistry, design assumptions and controls applicable to Fluence's standard GSP5000. For this RMAR to apply, any alternative battery technology shall, at a minimum, adopt equivalent chemistry, design standards, and control measures.

6.1 BATTERY CHEMISTRY

Fluence's standard GSP5000 uses lithium-ion battery chemistry (lithium iron phosphate). Lithium-ion systems are the most common battery technology for grid-scale applications. Under credible abuse or fault conditions, lithium-ion batteries may undergo thermal runaway, resulting in fire, explosion, toxic release, and electrical hazards. Accordingly, the RMAR has considered the consequences based on lithium-ion technology.

6.2 BESS DESIGN

It is assumed that the Project design will be in line with recognised industry best practice, including relevant Australian and New Zealand Standards (AS/NZS) and the United States National Fire Protection Association (NFPA) codes. These are listed in Table 4.

Table 4: Relevant Standards

Standard	Description
AS IEC 62619: Secondary cells and batteries containing alkaline or other non-acid electrolytes [5]	AS IEC 62619 includes safety requirements for secondary lithium cells and batteries for use in industrial applications.
AS/NZS 4681: The storage and handling of Class 9 (miscellaneous) dangerous goods and articles [6]	AS/NZS 4681 provides requirements for the safe storage and handling of Class 9 (miscellaneous) dangerous goods.
AS/NZS 3000: Electrical installations (Wiring Rules) [7]	AS/NZS 3000 sets the fundamental safety requirements for the design, construction and verification of electrical installations.
AS 2067: Substations and high voltage installations exceeding 1 kV AC [8]	AS 2067 establishes safety and design requirements for high-voltage installations, including substations and associated power conversion equipment.
NFPA 855: Standard for the Installation of Stationary Energy Storage Systems [9]	NFPA 855 includes standards for the fire protection of BESS.

6.3 INHERENT BATTERY CONTROLS

The battery units will be sourced from an established and recognised supplier, with demonstrated experience in similar applications. The standard controls for grid-scale battery units listed in Table 5 are typically required to conform to the standards in Table 4, and are applicable to Fluence's standard GSP5000. These inherent controls would be included with the battery units supplied by the original equipment manufacturer (OEM).

Table 5: Inherent Battery Controls – OEM Supplied

Assumed Control / System	Description
Battery management system (BMS)	Each battery system unit will include an integrated BMS providing real-time fault detection, cell and module-level monitoring, and automatic isolation or shutdown under abnormal conditions.
Thermal management system	Battery units will include liquid cooling and heating systems, integrated with the BMS, to maintain cells within prescribed operating temperature limits.
Air cooling system	Air cooling systems within the battery units will be used for auxiliary electrical components and to control the humidity within the battery units.
Energy management system	An energy management system will be implemented to optimise charging and discharging cycles, monitor system performance, and manage integration with other energy resources to support network stability.
Fire and gas detection	Smoke, heat, and flammable gas detection systems with alarms and automated or manual response will be provided within battery units.
Explosion prevention	A container ventilation system will be implemented to maintain flammable gas concentrations below the lower explosive limit, in accordance with NFPA 855 [9] and NFPA 69 [10].
Explosion prevention	Explosion protection will be provided in the form of deflagration panels in accordance with NFPA 68 [11].
Ingress Protection	The battery units will be provided with an ingress protection (IP) rating appropriate to the site conditions. Fluence's standard GSP5000 is rated to IP55.

7 METHODOLOGY

This section presents a summary of the risk management methodology applied to this assessment. The risk management is consistent with Queensland's Planning Guideline State Code 27 [1] and generally follows the approach described in *AS/NZ ISO 31000:2018* [12] and *AS/NZS 5139:2019* [13]. The key steps in this approach are as follows:

- Hazard identification
- Control identification
- Risk assessment
  - Consequence assessment
  - Likelihood assessment
  - Residual risk rating and tolerability assessment
- State Code 27 PO assessment.

7.1 HAZARD IDENTIFICATION

The hazard identification stage involved identifying hazards resulting from the Project's operations that could impact people, surrounding land uses, and the environment. The following impact types were considered when assessing the consequences:

- Human health and safety; and
- The built and natural environment.

The analysis did not include hazards relating to regular occupational exposures to workers (e.g. slips, trips, strains). These hazards are expected to be managed through suitable, safe systems of work in accordance with Queensland's Work Health and Safety legislation. However, specific hazards associated with interactions with BESS infrastructure were included (e.g. electrocution).

The hazard identification process involved a systematic review of potential hazards associated with the Project infrastructure, including the battery units, PCS, MVPS, auxiliary transformers and the Project Substation. The following sources were consulted in this process:

- Relevant standards were used to establish the types of hazards and safety considerations applicable to large-scale utility BESS, including *NFPA 855* [9], which define recognised BESS hazards and associated design and installation requirements.
- The Best Practice Guide for Battery Storage Equipment [14] was consulted, which provides guidance on acceptable industry practices for identifying and managing battery-related hazards.
- Guidance reports published by the Australian Energy Council [15] and American Clean Power [16] detail historical BESS incidents. These were reviewed to identify failure modes and initiating events that have resulted in real-world incidents.

Potential hazardous scenarios were then developed by assessing credible initiating events in the context of the Project design and layout and considering their associated consequences. The identified hazards were discussed with project management representatives from K3W and Fyfe in a meeting held on 29 April 2026.

7.2 CONTROL IDENTIFICATION

Following the hazard identification step, controls were identified that would act to reduce the severity or likelihood of the hazard. These controls were a combination of preventive and mitigative controls. Each identified control was classified according to the following categories:

- Original equipment manufacturer (OEM)
- Project design controls (DES)
- Operational controls (OPS).

7.2.1 Original Equipment Controls (OEM)

Controls assumed to be provided with the OEM-supplied equipment were designated OEM. The Project is in the mid-development phase, and the detailed design will be completed in the lead-up to construction. Fluence's standard GSP5000 battery product has been selected as the basis of design; however, the final product specification may be subject to change. The OEM controls have been assumed based on Fluence's standard GSP5000, and are aligned with recognised industry best practice and relevant standards (refer to Section 6.3).

7.2.2 Design Controls (DES)

Controls classified as DES were project-specific design controls to be implemented during detailed design. These included controls associated with the non-OEM equipment (e.g. transformers) as well as the Project layout.

7.2.3 Operational Controls (OPS)

The operational controls identified were classified as OPS. These are predominantly administrative controls that rely on the development and implementation of procedures and manual intervention by on-site personnel (e.g. emergency response).

7.3 RISK ASSESSMENT

Following the hazard and control identification steps, the risk assessment step focused solely on the potential for off-site impacts. This approach is consistent with Queensland's planning framework and the purpose of the RMAR, which is to demonstrate that the Project does not result in unacceptable adverse impacts on people, the environment, or infrastructure in surrounding land uses. For the purposes of the RMAR, 'off-site' was defined as beyond the Project boundary.

7.3.1 Consequence Analysis

For each hazard, the potential magnitude and severity of the off-site consequences on the surrounding land, buildings, environment and personnel were assessed against the qualitative consequence criteria summarised in Table 6.

The consequence severity ratings were adapted from *AS/NZS 5139* [13]. When assessing the consequences, the impacts on surrounding land uses (i.e. the "off-site risk") were recorded.

Table 6: Consequence Categories [13]

Severity	Description		
	H&S	Asset Impact*	Environment
Catastrophic	• Any fatality of staff, contractor or public	• Equipment destruction, repair not possible, and repair cost greater than original cost of works.	• High, long term or widespread impact (spill, emission, or habitat disturbance) to sensitive environment • Environmental agency response with significant fine • Long term recovery of environment to pre-incident state not likely.
Major	• Non-recoverable occupational illness or permanent injury • Injury or illness requiring admission to hospital	• Equipment damage repaired at a cost of between 50% and 100% of original cost of works.	• Substantial impact – large spill or emission requiring Emergency Services attendance • Recovery of environment likely but not necessarily to pre-incident state • Any spill into sensitive area (wet tropics, fish habitat, potable water supply).
Moderate	• Injury or illness requiring medical treatment by a doctor • Dangerous/reportable electrical incident	• Equipment damage repaired at a cost of between 15% and 50% of original cost of works.	• Moderate impact – spill or emission not contained on site with clean up needed • Death or destruction of protected flora or fauna • Environment likely to recover to pre-incident state in short to medium term.
Minor	• Injury requiring first aid • Circumstances that lead to a near miss.	• Equipment damage repaired at a cost of between 2% and 15% of original cost of works.	• Small spill or emission that has no impact on site or installation • Environment expected to fully recover to pre-incident state • Environmental nuisance (short-term impact) caused by noise, dust, odour, fumes, light.
Insignificant	• No or minor injury.	• Simple equipment damage with no or same day repair at a cost of less than 2% of original cost of works.	• Small spill or emission that has no impact on site or installation • Clean up requires no special equipment and has no potential impact.

* Refers to off-site asset impacts

7.3.2 Likelihood Analysis

The likelihood rating was assigned using the likelihood definitions listed in Table 7. These definitions were adapted from *AS/NZS 5139:2019* [13]. The residual likelihood of the hazardous event occurring was evaluated (i.e. the control-mitigated likelihood).

Table 7: Likelihood Definitions [13]

Likelihood	Definition
Almost Certain	Expected to occur whenever system is accessed or operated. The event is expected to occur in most circumstances.
Likely	Expected to occur when system is accessed or operated under typical circumstances. There is a strong possibility the event may occur.
Possible	Expected to occur in unusual instances when the system is accessed or operated. The event may occur at some time.
Unlikely	Expected to occur in unusual instances for non-standard access or non-standard operation. Not expected to occur, but there is a slight possibility it may occur at some time.
Rare	Highly unlikely to occur in any instance related to coming in contact with the system or associated systems. Highly unlikely, but it may occur in exceptional circumstances, but probably never will.

7.3.3 Residual Risk Rating and Tolerability Assessment

Following the determination of the off-site consequence impact and the likelihood of hazardous scenarios, the resulting residual risk level was determined by plotting each scenario on the risk matrix shown in Table 8. The risk matrix was adapted from *AS/NZS 5139:2019* [13]. The risk rating considered the risk reduction provided by the identified controls (i.e. residual risk). The tolerability of the assessed residual risk was determined as outlined in Table 9.

Demonstration that risks have been reduced "so far as is reasonably practicable" (SFAIRP) includes assessing what was reasonably practicable, considering the likelihood and severity of harm and what was known, or ought reasonably to be known, about the availability, effectiveness and feasibility of additional controls. Battery technologies designed and implemented with controls in accordance with relevant standards (e.g. *NFPA 855* [9]) and industry practice were assumed to be adequate to demonstrate that risks have been reduced SFAIRP. Where standard controls are not adopted, there is an expectation on K3W to justify, including documented reasoning and, where applicable, a cost–benefit analysis, that further risk reduction would be grossly disproportionate to the benefit achieved.

Table 8: Risk Matrix [13]

	Likelihood				
Consequence	**Rare**	**Unlikely**	**Possible**	**Likely**	**Almost Certain**
Catastrophic	Medium	High	High	Extreme	Extreme
Major	Medium	Medium	High	High	Extreme
Moderate	Low	Medium	Medium	High	High
Minor	Very Low	Low	Medium	Medium	Medium
Insignificant	Very Low	Very Low	Low	Medium	Medium

Table 9: Risk Rating Definitions [13]

Risk Rating	State Code 27 Tolerability Assessment
Very Low	Considered to be broadly acceptable and meet the intent of the performance outcomes. No additional risk reduction is required.
Low	Considered to be broadly acceptable and to meet the intent of the performance outcomes, provided the identified controls are implemented and maintained.
Medium	Considered to meet the intent of the performance outcomes, provided the identified controls are implemented, maintained and reviewed by the risk owner.
High	Considered to meet the intent of the performance outcomes if it is demonstrated that risk is reduced so far as is reasonably practicable and the effectiveness of implemented control measures is regularly reviewed and documented.
Extreme	Considered intolerable and indicative that the performance outcomes would not be met without further risk reduction.

7.4 STATE CODE 27 PO ASSESSMENT

The risk assessment outcomes were reviewed against the relevant State Code 27 Performance Outcomes to demonstrate that the Project would appropriately manage impacts on people, property and the environment. Refer to Section 4 for further details on the relevant State Code 27 Performance Outcomes.

8 HAZARD IDENTIFICATION

The hazard identification was conducted as described in Section 7.1. Potential hazards, their associated consequences and control measures were collated in a risk register. The risk register was reviewed and approved by Project Management representatives from K3W and Fyfe, in a meeting held on 29 April 2026. The complete risk register is provided in Appendix A.

The following sections describe the potential hazards associated with the Project, including on-site, external, and natural hazards that may impact it. The Natural Hazards Risk Assessment (NHRA), prepared by Fyfe for the Project [17], was used to inform the identification and screening of natural hazards applicable to the Project. The NHRA considered local site conditions and the Project layout to determine the likelihood and potential consequences of these hazards.

8.1 ON-SITE HAZARDS

8.1.1 Battery Unit Failures

A single-cell energetic failure within a battery unit can initiate thermal runaway, a self-accelerating degradation process in which heat, pressure and internal reactions rapidly escalate. This process does not require external oxygen and is difficult to stop once initiated. Guidance published by the Australian Energy Council [15] and a technical report prepared by the Fire Protection Research Foundation [18] describe the four general causes of energetic battery failure (refer to Table 10).

Table 10: Thermal Runaway Causes

Failure Mechanism	Description
Thermal abuse	Thermal abuse (exposure to high temperature) can occur either as long-term storage of cells at temperatures above the design limit, or as acute exposures to high temperatures (e.g. fire). Operating at low temperatures can also degrade the battery cell chemistry and cause faults.
Electrical abuse	Electrical abuse refers to voltage/current overcharging, undercharging, or high-rate charging, and exposure to electrical faults, such as short circuits (e.g. high-rate discharging).
Mechanical abuse	Physical damage to battery units caused by impact from vehicles, dropped objects, etc., can cause mechanical damage and short circuiting.
Design flaws / manufacturing defects	Manufacturing defects can cause electrode deformation or other internal faults, leading to thermal runaway events after cycling the battery.

Thermal runaway can lead to:

- Release of toxic vapours
- Explosion
- Fire.

Thermal runaway generates toxic and flammable gases due to the decomposition of the electrolyte and the combustion of battery unit materials. The materials generated and the rate of generation are dependent on the battery technology. Typically, the toxic vapours generated in lithium-ion thermal runaway events include carbon monoxide (CO), hydrogen fluoride (HF), and hydrogen cyanide (HCN). These chemicals are highly toxic and pose a risk to the health and safety of exposed people. Particulates are also released in the vapours and can deposit in the ground soils and water surrounding the BESS.

A literature review of historical BESS incidents, supported by plume dispersion modelling, was undertaken by the Society of Fire Protection Engineers (SFPE) [19] to determine the health and environmental impacts from thermal runway events in outdoor, large-scale lithium-ion battery units. The research showed that the concentration of toxic particulates deposited into the surrounding environment

does not exceed harmful levels. Given that the Project area is largely clear of native vegetation and separated from any waterways, no off-site environmental impacts were identified.

Flammable gases such as hydrogen, methane and ethylene may also be generated in thermal runaway events. These pose an explosion and fire risk. There is also the potential for flammable gases to accumulate within the battery units, which, following ignition, could lead to an explosion. Following ignition of the flammable gases, a battery unit fire would continue for an extended period. This fire would cause localised heat radiation and toxic combustion products.

8.1.2 Chemical Battery Hazards

Physical damage to battery cells may result in leakage and loss of electrolyte or coolant liquid. Such damage may result from a vehicle or aircraft impact, lifting during construction, or the disposal of waste battery units.

Electrolyte leakage presents multiple hazards, depending on the battery technology. An external coolant leak could expose on-site personnel and the environment to corrosive and/or toxic materials. Additionally, the battery thermal management system could be disrupted, leading to high temperatures within the battery units and the potential for thermal runaway. A leak within the battery unit could cause an electrical short circuit in the battery system, leading to thermal runaway. The Fire Protection Research Foundation technical report also described that battery systems employing flammable electrolytes, mechanical damage or elevated temperatures may cause electrolyte venting or liquid release, presenting additional fire and explosion hazards [18].

Damaged batteries that retain stored energy can pose a risk of electric shock or arc flash during handling, maintenance, or disposal. Spare battery components will be stored in an appropriate warehouse co-located on-site at a low state of charge. This reduces the stored chemical energy available within the modules, limiting the potential for long-duration, self-sustaining fires. Waste battery components will be appropriately disposed of immediately, as part of maintenance and operations procedures. This aspect will be addressed as part of Project operating procedures for battery disposal and recycling during operation and decommissioning.

8.1.3 General Electrical Hazards

The Project infrastructure includes a range of electrical equipment. Direct contact with live electrical equipment operating above extra-low voltage, particularly under fault or abnormal conditions, presents a risk of serious injury or fatal electrocution. Electrical faults may also cause arc flash and localised fires. Electrical hazards are addressed through system design, in accordance with *AS/NZS 3000* [7] and other relevant Australian Standards. Therefore, the impacts arising from the electrical infrastructure are limited to on-site health and safety.

Direct contact with live electrical equipment operating above extra-low voltage, particularly under fault or abnormal conditions, presents a risk of serious injury or fatal electrocution. Therefore, the impacts arising from the electrical infrastructure are limited to on-site health and safety.

8.1.4 Transformer Hazards

Within the Project Substation, faults in transformers or switchgear, such as electrical failures, mechanical damage, overheating, or loss of insulating oil, can lead to explosions and fires. These have the potential to impact on-site personnel and surrounding equipment.

Transformer explosions can generate a blast wave and projectiles. These explosions are initiated by a limited quantity of vapourised oil, and as such, the blast effects are localised. A transformer explosion could also result in equipment rupture and the release of oil. Following the initial event, any remaining ignited transformer oil would drain into a bunded area, forming a pool fire within the bund. The Preliminary Fire Safety Study (FSS) [20] found that heat radiation impacts are limited to 49 m from the transformer, and based on the site layout, there would be no damaging impact from heat radiation on the surrounding site buildings and structures.

Given the absence of off-site receptors adjacent to the Project boundary, such an event would not result in off-site heat radiation impacts. In the detailed design phase, the transformer would be sited, and protective measures would be put in place (as needed) to prevent any impacts from a transformer fire on on-site equipment, including the battery units. This approach aligns with the relevant Australian Standards (e.g. AS 2067 [8]). Accordingly, potential consequences were assessed as on-site personnel exposure to fire or explosion hazards.

8.1.5 Electric and Magnetic Field Hazards

Acute exposure to extremely low frequency (ELF) electromagnetic fields (EMF) at high levels is known to affect nervous system function. While EMF will be generated by the Project, guidance from the Australian Radiation Protection and Nuclear Safety Agency indicates that exposure to high-level ELF EMF is rare and typically limited to specific medical procedures or specialised occupational settings [21]. For the Project, EMF exposure for personnel would be transient and does not represent an acute exposure risk. In the absence of nearby off-site receptors, there is no credible pathway for off-site EMF exposure.

8.1.6 Contaminated firewater

Firefighting activities may produce contaminated firewater containing electrolyte residues, combustion by-products, and other hazardous substances. Research undertaken by the SFPE included a review of historical BESS thermal runaway incidents and the environmental impacts of firefighting run-off generated during the associated response activities [19]. The review indicated that the application of firewater results in substantial dilution of hazardous substances, such that environmental impacts are limited. Therefore, in the event that containment measures fail, minor off-site environmental impacts could occur.

8.1.7 Dangerous Goods

Minor quantities of DG, such as transformer oil, flammable solvents and firefighting chemicals may be stored and handled on site within a dedicated, lockable maintenance shed. Vehicle refuelling will occur at the Kidston Pumped Hydro Project site and, as such, diesel and other fuels will not be stored within the BESS Project.

DG releases may occur during transport, storage, or maintenance activities, potentially causing localised on-site health and safety (e.g. chemical exposure) or environmental impacts, depending on the material involved. Given the small quantities of DG, any exposures could only be to on-site workers (i.e. no off-site impacts).

8.1.8 Commissioning Hazards

Commissioning activities for the BESS typically present a higher level of risk than steady-state operations, as systems are being energised, tested and transitioned through non-routine operating modes. The types of hazardous events that may occur during commissioning are similar to those that may occur during the subsequent operational phase for the BESS (e.g. thermal runaway). Additionally, construction activities within the Project area have the potential to cause localised erosion and generate contaminated run-off, which could impact the off-site environment.

8.2 EXTERNAL HAZARDS

The following sections detail external hazards that could impact the Project. Predominantly, these are hazards that can impact the battery units and cause thermal runaway by one of the initiating mechanisms, namely, mechanical abuse, thermal abuse or electrical abuse, as detailed in Section 8.1.1.

8.2.1 Loss of Auxiliary Power

A loss of power to the Project would disable the BMS, thermal management systems, and associated monitoring functions. This event may result in thermal abuse of battery cells due to the loss of active cooling and a reduced ability to detect abnormal temperatures or electrical conditions. Battery temperatures may rise under these conditions, potentially leading to thermal runaway.

8.2.2 External Response to Emergency

External emergency response would be carried out by the local rural volunteer fire brigade. External emergency responders may enter the Project area during emergency response activities, including bushfire, thermal runaway, or major electrical incidents. BESS facilities introduce hazards that differ in nature and behaviour from the fire scenarios typically encountered by rural fire brigades, including the potential for delayed thermal runaway, re-ignition, release of toxic or flammable gases, and residual stored energy in damaged equipment, as described in Section 8.1.1. External emergency responders may be exposed to hazards including radiant heat, toxic gases and live or damaged electrical equipment.

While this hazard is related to other thermal runaway events, it has been assessed separately to reflect the increased health and safety risks to external emergency responders.

8.2.3 Aurumfield Substation Electrical Fault

The Aurumfield Substation primarily comprises electrical switchgear, and the surrounding area is cleared of vegetation. Accordingly, an electrical fire at the Aurumfield Substation would not impact the Project. Possible impacts are limited to operational disruption or temporary grid connection unavailability.

8.2.4 High Voltage (HV) Powerline Arcing / Flashover

An electrical arcing or flashover event on the Kidston Solar Project HV (132 kV) OHTL, which traverses the Project area, could initiate a localised fire. The quantity of combustible material would limit any potential fire in the immediate area, which is largely cleared of vegetation, in alignment with the asset protection zone (APZ) requirements established in the Bushfire Management Plan (BMP). Accordingly, no impacts to the battery units were identified. Emergency response planning should consider management of such a fire.

8.2.5 HV Powerline Failure

A structural failure of the supporting concrete pole for the OHTL or sagging of the conductors may be caused by ageing or faulty equipment, or by vehicle impact. In such a scenario, a conductor could impact on-site people or fall onto the project infrastructure, including electrical equipment or battery units. If battery units or nearby infrastructure were impacted by a falling HV cable, this could potentially damage a unit and initiate a thermal runaway event.

8.2.6 Aircraft Crash

An aerodrome is located approximately three kilometres from the project location and is used to transport personnel to and from the Kidston Clean Energy Hub, as well as for occasional private aircraft operations. In the extremely unlikely event of an aircraft crash onto the BESS, the impact could cause physical damage to the battery units, potentially initiating a thermal runaway.

8.2.7 Vehicle Impact

A vehicle collision could physically damage equipment, including the battery units, and initiate thermal runaway. The adjacent Gilberton Road is a local road and will be used primarily for access to the Clean Energy Hub. The Traffic Impact Assessment prepared for the Project found that the road currently carries low traffic volumes [22]. Traffic will increase during construction and commissioning, including heavy vehicle movements associated with co-located Clean Energy Hub activities. Any credible vehicle impact to equipment would therefore involve on-site personnel at low speeds.

8.2.8 Tampering

Intentional tampering, including theft or sabotage, could expose people to electrical hazards and damage the battery units, leading to mechanical, electrical or thermal faults. Physical interference with the BESS, or malicious cyber interference affecting control and protection systems, could impair the BMS and lead to thermal runaway.

8.2.9 Damage from Wildlife

Wildlife may damage equipment (e.g. gnawing cables, depositing foreign objects inside equipment, shorting equipment), leading to mechanical, electrical or thermal faults that have the potential to initiate thermal runaway.

8.3 NATURAL HAZARDS

The following sections detail the natural hazards that could impact the Project. Specifically, these hazards may impact the battery units and cause thermal runaway by one of the four initiating mechanisms (i.e. mechanical abuse, thermal abuse, or electrical abuse or manufacturing defects), as detailed in Section 8.1.1.

8.3.1 High Ambient Temperature

The closest Bureau of Meteorology weather station with long-term, recent data is the Georgetown Post Office. More than 30 years of records are available, with a maximum recorded temperature of 43.5°C [23]. Maximum operating temperatures for LFP battery units are typically 45-50°C. Excessive ambient heat (e.g. heatwaves) could cause batteries to exceed their design range (assuming failure of other controls). This thermal abuse has the potential to initiate thermal runaway.

8.3.2 Low Ambient Temperature

The closest Bureau of Meteorology weather station with long-term, recent data is the Georgetown Post Office. More than 30 years of records are available, with a minimum recorded temperature of 0.3°C [23]. Operating battery cells at low temperatures (e.g. below 0°C) can degrade cell chemistry and cause internal faults.

8.3.3 Bushfire

The BMP has found the Project to be located within areas mapped as Potential Impact Buffer and adjacent to Medium Potential Bushfire Intensity land [24]. The Potential Impact Buffer represents land within 100 metres of vegetation mapped as capable of supporting a significant bushfire, where bushfire impacts such as ember attack, radiant heat, or flame contact may occur even if the fire front does not pass directly through the site. Medium Potential Bushfire Intensity areas are defined under the State Planning Policy mapping as areas capable of supporting a significant bushfire [25].

With inadequate bushfire management controls, battery units or electrical equipment may be exposed to high levels of radiant heat, leading to runaway thermal reaction. A bushfire may also interfere with the grid connection to the Project (e.g. down power lines).

8.3.4 Lightning Strike

The Bureau of Meteorology Severe Storms Archive reports that Queensland experiences frequent severe storm events that generate hazardous conditions, such as lightning [17,26]. A lightning strike within the Project area could cause an electrical overload, potentially triggering a fire involving battery units, transformers, or associated electrical infrastructure, with a consequent risk of thermal runaway. There is also a potential electrocution hazard to personnel on site during such events. The presence of four associated substations within the Clean Energy Hub increases the exposure to lightning-related impacts.

8.3.5 Flooding

The NHRA identifies that, while the Project site is located outside the mapped floodplain, there remains potential for Project infrastructure to be affected by flooding events. The Project area is located to the west of land subject to inundation during 1-in-50 and 1-in-100 year flood events associated with the nearby Einasleigh/Copperfield River [17,27]. Flooding in the vicinity may expose the battery units and electrical equipment to water ingress, leading to internal shorts. A flood may also interfere with the grid connection to the Project (e.g. down power lines) or disrupt the auxiliary power supply.

8.3.6 Cyclone

The Project NHRA found that the Project area is indirectly influenced by tropical cyclone activity and is subject to severe storm events, which are identified as a significant regional hazard [17]. Heavy winds could mechanically impact the battery units or electrical equipment (either directly or by causing impact from debris to impact them, such as from adjacent overhead powerlines). A storm event may lead to water ingress, resulting in internal shorts.

8.3.7 Storm

The NHRA describes that as Kidston lies within North Queensland, it is particularly influenced by severe storm systems, which are the most frequent natural hazard in Queensland [17]. Thunderstorms have the potential to generate hazardous conditions, including destructive winds, large hail, and dangerous lightning. A storm event may lead to physical damage or water ingress in the battery units or electrical equipment, resulting in internal shorts.

8.3.8 Earthquake

According to the 2023 National Seismic Hazard Assessment [28], the Project location is situated within a low earthquake hazard area, characterised by peak ground acceleration values of approximately 0.005–0.01 g at a 10% probability of exceedance in 50 years. These values indicate low expected ground-shaking demand over the typical project design life. On this basis, an earthquake was not considered a hazard with the potential to impact the Project.

8.4 SUMMARY

Table 11 summarises the hazards identified for the Project.

Table 11: Hazard Identification

Type	Hazardous Event	Potential Impacts
On-Site Hazard	Battery unit failures	Thermal runaway, leading to fire and/or explosion and the release of toxic and flammable gases.
	Chemical battery hazards	Physical damage to battery units resulting in loss of electrolyte or coolant liquid, initiating thermal runaway and/or exposing people to corrosive/toxic chemicals. Damaged or insufficiently discharged batteries can retain stored energy, creating potential for electric shock or arc flash during handling, maintenance, or disposal.
	General electrical hazards	Localised fire resulting from electrical failures, mechanical damage, or overheating Direct contact with live electrical equipment operating above extra-low voltage
	Transformer hazards	Fault in transformers or switchgear leading to explosion and fire
	EMF hazards	No impacts identified
	Contaminated firewater	Contaminated firewater migrating off-site
	Dangerous goods	Localised fire resulting from a spill of flammable DG Localised on-site environmental impacts
	Commissioning hazards	Erosion, with potential for contaminated run-off impacting off-site environment
External Hazard	Loss of auxiliary power	Impairment of the BMS, thermal management systems, and associated monitoring functions, leading to thermal runaway
	External response to emergency	Emergency responders exposed to electrical hazards (radiant heat, explosion and toxic gases) during emergency response
	Aurumfield Substation electrical fault	No impacts identified
	Hv powerline arcing / flashover	On-site personnel exposed to radiant heat during a localised fire event
	Hv powerline failure	Damage to battery units, initiating thermal runaway
	Aircraft crash	Damage to battery units, initiating thermal runaway
	Vehicle impact	Damage to battery units, initiating thermal runaway
	Tampering	Damage to battery units, initiating thermal runaway Electrocution of intruders
	Damage from wildlife	Damage to battery units, initiating thermal runaway
Natural Hazard	High ambient temperature	Exposure of the batteries to high levels of radiant heat, initiating thermal runaway
	Low ambient temperature	Degradation of cell chemistry, initiating thermal runaway
	Bushfire	Exposure of the battery units to high levels of radiant heat, initiating thermal runaway
	Lightning strike	Electrical overload leading to thermal runaway
	Flooding	Water ingress to the battery units, causing internal shorts and subsequent thermal runaway
	Cyclone	Physical damage or water ingress to the battery units, initiating thermal runaway
	Storm	Physical damage or water ingress to the battery units, initiating thermal runaway
	Earthquake	No consequences identified

9 CONTROL IDENTIFICATION

This section summarises the identified preventative and mitigative controls to manage potential off-site health, safety, and environmental impacts arising from hazards associated with the Project. Identified controls were classified according to the following categories:

- Original equipment manufacturer (OEM)
- Project design controls (DES)
- Operational controls (OPS).

9.1 PREVENTATIVE CONTROLS

Preventive controls act to stop the hazardous event from occurring. For thermal runaway events, these controls include those that maintain the battery units within defined operating parameters and those that prevent thermal, mechanical, or electrical abuse of batteries. Preventative controls were also identified to prevent external and natural hazards from impacting the battery units and triggering a thermal runaway event.

9.1.1 OEM Controls

Thermal Management System

Thermal management is provided through liquid cooling at the battery module level, with air-based cooling and humidity control at the container level. This system maintains the temperatures of battery cells, modules, and auxiliary electrical equipment within defined limits. Temperature conditions will be continuously monitored, with faults and excursions alarmed through the BMS and SCADA systems.

Battery Management System (BMS)

The BMS will continuously monitor cell voltage, current, and temperature to detect abnormal operating conditions and prevent conditions that could lead to thermal runaway or electrical failure. Safety functions include alarm generation, controlled shutdown, and automatic isolation of battery modules where faults are detected. The BMS is expected to meet the safety and testing requirements of *AS IEC 62619* [5].

Energy Management System

The energy management system will control and optimise charging and discharging profiles to prevent over-charge, over-discharge and sustained operation outside safe thermal and electrical limits. By managing power flows and integrating with the power plant controller, the energy management system will prevent electrical abuse of the batteries.

Containerised Battery Design

The containerised battery design will prevent unauthorised access and provide physical protection against damage from people, vehicles, wildlife and water ingress. The battery units will be provided with an IP rating suitable for the location. Fluence's standard GSP5000 is rated to IP55. The containerised design also limits the potential for installation errors and provides initial containment in the event of an electrolyte or coolant release.

9.1.2 Project Design Controls

Uninterruptible Power Supply (UPS)

A UPS will provide backup power to critical monitoring, control and communication systems, including the thermal management system, BMS and energy management system, to enable safe shutdown of the battery units in the event of a loss of power to the Project.

Asset Protection Zones (APZs)

APZs defined in the BMP will designate areas around the BESS free of combustible materials. The APZs limit the potential for bushfire-initiated fire within the battery units by reducing exposure to radiant heat, flame and ember attack from an approaching fire front. APZs also support emergency response access and firefighting activities and will be maintained through ongoing vegetation management.

In line with the requirements of the BMP, APZs of approximately 12 m to 22 m will be maintained around all built infrastructure to limit radiant heat exposure to no greater than 29 kW/m² [24]. This level of protection is sufficient to prevent escalation of a vegetation fire to damage critical site infrastructure, including battery units.

Site Drainage and Containment Systems

The drainage and water containment systems will be designed to manage flooding, stormwater flows, and firefighting run-off water. The system will prevent water ingress to the battery units and electrical infrastructure during storm and flood events, reducing the risk of short-circuiting, electrical failure and subsequent thermal runaway. During firefighting activities, the system will also provide containment of contaminated run-off to limit uncontrolled releases to surrounding off-site land and waterways, thereby reducing potential environmental impacts. The containment design includes a retention basin within the Project area. The design requirements for stormwater and firefighting run-off will be addressed during the detailed design stage based on the Stormwater Management Plan and Detailed FSS.

Lightning Protection System

Lightning protection systems and earthing will limit the likelihood and severity of lightning-induced damage, electrical surges and ignition sources affecting BESS equipment. The four substations within the Clean Energy Hub will be designed with interconnected earthing grids to manage fault currents and reduce electrical risk. These systems will be designed in accordance with relevant standards such as *AS/NZS 1768 – Lightning Protection* [29] *and* Energy Networks Australia EG-1 Substation Earthing Guide [30].

Plant Design for Earthquake and Wind

Plant and equipment installation will account for site-specific seismic forces and wind loadings to prevent physical damage to Project infrastructure that could disrupt the BESS, including the battery containers, PCS and MVPS units and transformer foundations. The design criteria will be aligned with relevant Australian structural and electrical standards.

Powerline Design

The OHTL will be designed with adequate structural supports to limit the likelihood of conductor failure or collapse under credible loading conditions. Ground clearance requirements will be maintained such that electrical faults will not result in arc propagation to ground, in accordance with relevant Australian Standards, including *AS/NZS 7000 - Overhead Line Design* [31]. As such, there is very low potential for overhead line failure to cause mechanical or electrical impacts on the BESS or associated infrastructure. Ongoing inspection and maintenance will be implemented to ensure clearances and structural integrity are maintained throughout the asset's life.

9.1.3 Operational Controls

Electrical Equipment Monitoring

Protection and monitoring systems for power conversion equipment and transformers, including electrical load and temperature, will be implemented to detect abnormal conditions that could escalate to fire or electrical failure. Alarms will trigger operator response (i.e. isolations) in accordance with Project operating procedures and the Operational Emergency Management Plan (OEMP), enabling timely intervention or shutdown.

Preventative Maintenance

Preventive maintenance schedules, inspections and testing will be implemented to maintain the mechanical and electrical integrity of the battery units, power conversion equipment and the Project Substation assets. This control prevents equipment degradation and latent faults that could lead to fire, electrical failure, loss of transformer oil, coolant or electrolyte leakage.

Site Traffic Management

Traffic management controls, including vehicle access restrictions, designated parking areas, and on-site speed limits, will be implemented to manage vehicle movements and minimise the likelihood of accidents impacting Project infrastructure.

Site Security Measures

Restricted site access, including perimeter fencing and security monitoring, will be implemented to prevent unauthorised entry, vandalism and tampering that could compromise the safe operation of the BESS. Cyber-related risks will be managed in accordance with the K3W cybersecurity policy.

9.2 MITIGATIVE CONTROLS

Mitigative controls reduce the magnitude and severity of hazardous events. Once thermal runaway has commenced within a cell, it is generally impossible to stop it. Therefore, mitigative controls for thermal runaway events are intended to limit propagation to adjacent modules and subsequent containers, and/or reduce the severity of consequences.

9.2.1 OEM Controls

Smoke, Heat and Flammable Gas Detection

Smoke, heat and flammable gas detection systems will provide an early indication of thermal runaway, fire or gas release within the battery units. The detection systems will integrate with the BMS and SCADA systems, and alarms will initiate operator responses to support escalation control, emergency isolation and emergency response, as detailed in the OEMP.

Explosion Prevention

The battery unit ventilation system will be designed to ensure that flammable gas concentrations remain below the lower explosive limit, and additional explosion prevention measures (e.g. deflagration panels) will be implemented, in line with NFPA 855 [9] requirements and testing outcomes (e.g. NFPA 68 [11] and NFPA 69 [10]).

9.2.2 Project Design Controls

Site Layout and Separation

Separation between battery units will be implemented to limit heat flux and fire spread, reducing the likelihood of thermal runaway propagation involving multiple battery units. Separation from surrounding assets and operational areas will further limit escalation impacts and prevent fire spread to adjacent equipment. Separation requirements are informed by UL 9540A [32] test outcomes and NFPA 855 [9] guidance.

Emergency Site Access

Site access provisions will support a safe and effective firefighting response, thereby limiting escalation and the severity of consequences. Access will be provided via an existing internal access track from Gilberton Road, which currently services other Clean Energy Hub facilities and substations, and where necessary, will be upgraded to a minimum width of six metres to accommodate emergency vehicles and operational traffic. Consistent with the Australasian Fire and Emergency Service Authorities Council (AFAC) guidance [33], access around the full perimeter of the battery units, and at least two site access points, with cleared and accessible firefighting areas will be established.

Firefighting Infrastructure

Firefighting infrastructure, including a reticulated water supply, will be provided to support fire response measures, limiting fire spread and escalation. Water may be sourced from Copperfield Dam under a licensed allocation of up to 4.65 GL/year and delivered to the site via a network of private water pipelines servicing the Clean Energy Hub, including the Kidston Solar and Hydro projects and accommodation facilities. In accordance with the requirements of the BMP, on-site connections will be provided with rural fire brigade tank fittings [24]. Firewater system capacity, along with fire detection and suppression requirements are defined in the Preliminary FSS [20].

9.2.3 Operational Controls

SCADA and Operator Response

A SCADA system will enable remote monitoring, alarm management and controlled shutdown of the BESS during abnormal or emergency conditions. Operator actions (i.e. isolations) will be implemented in accordance with the OEMP. The effectiveness of this control is contingent on continuous 24/7 remote monitoring and timely operator response to alarms.

Operational Emergency Management Plan (OEMP)

An OEMP will be developed and implemented in coordination with the Queensland Fire Department and local rural fire brigade before project start-up. The OEMP will:

- Identify site-specific BESS hazards relevant to emergency response scenarios
- Detail emergency response strategies, including staff movement restrictions and exclusion zones
- Document electrical isolation procedures for damaged or affected equipment (e.g. remote isolation via the SCADA system)
- Define requirements for external emergency response, including initiation, notification, and coordination arrangements. Setback distances will be established to support safe emergency responder access, and an emergency information booklet will be provided at the site perimeter to support first-responder actions.
- Establish communication protocols between site personnel and emergency responders during an incident
- Specify required personal protective equipment for responders, including respiratory protection.

Construction Environmental Management Plan (CEMP)

Erosion and sediment controls will be implemented through the CEMP and will mitigate off-site impacts from disturbed soils during construction activities. Measures such as sediment fencing, traps and stabilisation limit sediment mobilisation and environmental harm.

10 RISK ASSESSMENT

10.1 RISK EVALUATION

The following sections provide a summary of the risk assessment outcomes, with the complete risk register provided in Appendix A. The risk evaluation was conducted for off-site impacts only. The resulting residual risk ratings were used to assess the tolerability, as described in Section 7.3.3.

The hazard register and risk assessment outcomes were reviewed with representatives of Fyfe, K3W and R4Risk in a meeting on 29 April 2026. Site-specific hazards and the Project's control philosophy were discussed, and feedback was incorporated into the assessment.

10.2 CONSEQUENCE ASSESSMENT

The potential consequence severity was assessed using the consequence criteria outlined in Section 7.3.1. Consequence ratings were determined based on the severity of potential off-site health and safety impacts and impacts to off-site built and natural environments. If a hazardous event resulted in multiple consequences, the rating was based on the most severe outcome.

Off-site consequences were identified for the following hazardous event impacts:

- Thermal runaway
- Impact on emergency responders
- Ground/water contamination.

10.2.1 Thermal Runaway

As discussed in Section 8.1.1, thermal runaway has the potential to result in the generation of toxic vapours, explosion and fires.

The potential impact from a fire, explosion and toxic vapour generated during thermal runaway was assessed as part of the Preliminary FSS [20]. This modelling was based on large-scale fire test data for Fluence's standard GSP5000 [34] and assessed the impacts of a single battery unit fire. From this modelling, it was concluded that heat radiation impacts from a thermal runaway event are limited to the BESS Yard and adjacent access roads. Overpressure levels that could cause injury may extend slightly beyond the Project boundary. The dispersion modelling conducted as part of the Preliminary FSS found that the furthest downwind distance at which irritation and discomfort from toxic exposure (i.e. HF) may occur in individuals is 25 m, extending slightly beyond the Project boundary. However, given the absence of immediate off-site neighbours, no off-site health and safety impacts resulting from explosion or toxic vapour dispersion following thermal runaway were identified. On-site personnel may still be exposed to hazardous levels of heat radiation, overpressure impacts, or toxic smoke effects.

The closest off-site receptors are personnel at the Kidston Hydro Project site or at the adjacent Aurumfield Substation, both located more than 100 m from the nearest battery unit. Modelling from the Preliminary FSS indicates that exposure to harmful toxic gas (i.e. HF) is not expected at this distance; therefore, potential human health impacts would be limited to transient, low-level smoke inhalation. Accordingly, the consequence severity for off-site receptors was assessed as *Minor*.

This consequence severity rating and associated residual risk ratings are based on Fluence's standard GSP5000 and are considered applicable to similar LFP battery units. However, if an alternative battery product is selected during detailed design, the consequence impacts and required separation distances should be verified through additional consequence modelling. This should confirm toxic gas composition, release characteristics, and impact distances for fires, explosions, and toxic vapour releases associated with thermal runaway events. This verification would be undertaken as part of the Detailed FSS (which will be conducted in the lead-up to construction) and emergency planning. Where required, appropriate risk mitigation measures, such as shelter-in-place provisions or other controls, would be implemented to manage any potential off-site risks.

10.2.2 Impact on Emergency Responders

As discussed above, there is the potential for on-site exposure to fire, explosion, and toxic gas hazards associated with thermal runaway. Therefore, emergency responders entering the Project area may be exposed to radiant heat, smoke, toxic gases, and live electrical infrastructure. It is expected that emergency responders will be trained and aware of the hazards associated with BESS facilities and thermal runaway. As such, the consequence severity for emergency responders was assessed as *Major* due to the potential for permanent injury.

10.2.3 Ground/Water Contamination

Erosion during construction and firefighting water run-off may result in off-site impacts to adjacent land and waterways (i.e. Charles Creek), including the release of chemicals toxic to vegetation and aquatic ecosystems.

While significant dilution of contaminants would occur during firefighting due to the large volumes of water involved, there remains potential for contaminated run-off or sediment to migrate off-site. On this basis, the environmental consequences associated with erosion and run-off from firefighting were assessed as *Moderate.*

10.3 LIKELIHOOD ASSESSMENT

Likelihood ratings were determined based on the likelihood of hazardous events occurring when all identified control measures are in place (see Section 7.3.2).

10.3.1 On-Site Hazards

All thermal runaway events arising from on-site hazards were assessed as *Unlikely* following the implementation of:

- The identified controls listed in Section 9
- Compliance with relevant standards (e.g. fire detection, suppression and protection methods aligned with NFPA 855 [9])
- Use of proven battery technology from established suppliers.

The likelihood of off-site environmental impacts stemming from contaminated firewater run-off was assessed as *Rare*, based on the provision of containment strategies (i.e. a retention basin) incorporated into the site design and layout.

10.3.2 External Hazards

The likelihood for the majority of external hazards causing a thermal runaway event was estimated to be *Rare* based on:

- Remote location of the Project and security measures limiting access for intruders
- Containerised battery units limiting wildlife ingress
- The design of the HV OHTL with sufficient clearance to the ground to limit impacts of electrical faults
- Isolation measures and specialist training of emergency responders limit the potential fire and explosion impacts.

Two external hazards with potential to cause a thermal runaway event were assessed as *Unlikely*: vehicle collision with a battery unit and loss of auxiliary power. These likelihood ratings reflect the Project layout and low on-site vehicle speeds, which significantly limit the potential for vehicle-induced damage, and the provision of a UPS to maintain critical thermal management systems.

10.3.3 Natural Hazards

The likelihood of natural hazard events causing a thermal runaway event ranged from *Rare* to *Possible.* The likelihood assessment was based on a review of the Project location relative to the associated weather event frequency data (see Section 8.3) and the NHRA [17]. Bushfire, lightning and storm were

rated *Possible*, reflecting their higher frequency relative to other natural hazard events in the surrounding area.

10.4 RISK RATING AND TOLERABILITY ASSESSMENT

From a total of 29 hazardous events identified:

- Six events were associated with only health and safety consequences
- Two events were associated with only environmental impacts
- 19 events had the potential for both health and safety and environmental impacts
- Two events were assessed as not having any impact (either on health and safety or the environment)
- No hazardous events were identified that would impact the off-site built environment.

The outcomes of the risk assessment are summarised in Table 12. A total of 20 hazardous events were assessed as having the potential for off-site consequences. These included:

- Seven were assessed as having a *Very Low* residual risk
- Nine were assessed as having a *Low* residual risk
- Four were assessed as having a *Medium* residual risk
- No *High* or *Extreme* residual risks were identified.

The seven hazardous events with a *Very Low* residual risk were considered broadly acceptable and to meet the intent of the performance outcomes.

The nine scenarios with *Low* risk and the four *Medium* hazardous events were considered tolerable and to meet the intent of the performance outcomes, provided the identified controls are implemented and maintained.

Table 12: Off-Site Risks

Hazard No.	Hazardous Event	Potential Impact	Consequence Category	Likelihood Rating	Consequence Severity	Risk Rating
1	Battery module component failure	Thermal runaway	Health and Safety	Unlikely	Minor	Low
2	Overcharging / high-rate charging	Thermal runaway	Health and Safety	Unlikely	Minor	Low
3	Battery module coolant leak	Thermal runaway	Health and Safety	Unlikely	Minor	Low
4	Battery module electrolyte leak	Thermal runaway	Health and Safety	Unlikely	Minor	Low
10	Loss of containment of firefighting run-off water	Ground/water contamination	Environmental	Rare	Moderate	Low
12	Erosion	Ground/water contamination	Environmental	Rare	Moderate	Low
13	Loss of auxiliary power	Thermal runaway	Health and Safety	Unlikely	Minor	Low
14	External response to emergency	Impact to emergency responders	Health and Safety	Rare	Major	Medium
17	HV Powerline Failure	Thermal runaway	Health and Safety	Rare	Minor	Very Low
18	Aircraft crash	Thermal runaway	Health and Safety	Rare	Minor	Very Low
19	Vehicle impact	Thermal runaway	Health and Safety	Unlikely	Minor	Low
20	Tampering	Thermal runaway	Health and Safety	Rare	Minor	Very Low
21	Damage from wildlife	Thermal runaway	Health and Safety	Rare	Minor	Very Low
22	High ambient temperature	Thermal runaway	Health and Safety	Rare	Minor	Very Low
23	Low ambient temperature	Thermal runaway	Health and Safety	Rare	Minor	Very Low
24	Lightning strike	Thermal runaway	Health and Safety	Possible	Minor	Medium
25	Bushfire	Thermal runaway	Health and Safety	Possible	Minor	Medium
26	Flooding	Thermal runaway	Health and Safety	Unlikely	Minor	Low
27	Cyclone	Thermal runaway	Health and Safety	Rare	Minor	Very Low
28	Storm	Thermal runaway	Health and Safety	Possible	Minor	Medium

11 STATE CODE 27 ASSESSMENT

The relevant State Code 27 POs and the Project's assessed impacts are detailed in Table 13. All relevant POs were considered satisfied.

Table 13: Off-Site Risk Performance Outcomes

Performance Outcome	Criteria Requirement	Assessed Impact	Outcomes
PO2 – Risk Mitigation	Development is designed, sited and constructed to ensure that risks from physical hazards, chemical hazards and battery failure hazards are avoided and/or mitigated with respect to: • Human health and safety; and • The built and natural environment.	The hazardous events identified for the Project will be managed to reduce the associated risks to a tolerable level. Therefore, this outcome is satisfied.	Satisfied
PO3 – Risk Mitigation	Development mitigates the risks of fire, explosion and thermal runaway from battery storage infrastructure.	The hazardous events identified for the Project will be managed to reduce the associated risks to a tolerable level. Therefore, this outcome is satisfied.	Satisfied
PO4 – Risk Mitigation	Development is designed to ensure fire and thermal events can be contained and isolated to prevent escalation and propagation to other developments and uses on and offsite.	The hazardous events identified for the Project will be managed to reduce the associated risks to a tolerable level. Therefore, this outcome is satisfied.	Satisfied
PO5 – Incident Response	Development is designed to facilitate effective and efficient emergency service access and response in the event of a fire, bushfire (including cleared firefighting areas at the interface of hazardous vegetation), explosion, contamination leak or any other incident requiring an emergency service response.	The following controls have been identified to reduce the associated risks to a tolerable level: • Emergency Site Access • Operational Emergency Management Plan. With these controls in place, the Project will satisfy this performance outcome.	Satisfied
PO6 – Incident Response	The development: • Provides appropriate fire detection, monitoring and notification to the site operator; and • Ensures the electrical safety of the facility, in the event of an incident requiring emergency response.	The following controls have been identified to reduce the associated risks to a tolerable level: • Firefighting Infrastructure • SCADA and Operator Response • Operational Emergency Management Plan. With these controls in place, the Project will satisfy this performance outcome.	Satisfied
PO7 – Incident Response	Development demonstrates that there is capacity to provide a reliable, sustainable and fit-for-purpose water supply.	The following controls have been identified to reduce the associated risks to a tolerable level: • Firefighting Infrastructure With these controls in place, the Project will satisfy this performance outcome.	Satisfied

12 CONCLUSION

This RMAR has assessed the proposed Kidston BESS against the relevant State Code 27 POs to determine whether risks to human health and safety, and to the built and natural environment, are managed to a tolerable level. Hazards associated with the Project, including battery failure, fire, thermal runaway, environmental contamination, and emergency response, have been systematically identified and assessed.

The key findings of the risk assessment are as follows:

- No hazardous events were identified that would result in unacceptable adverse impacts
- Four hazardous events were assessed as having a *Medium* off-site residual risk and nine hazardous events were assessed as having a *Low* off-site residual risk**.** These risks were considered tolerable through the adoption of industry best practice design, operational controls and emergency planning
- All other assessed hazardous events resulted in *Very Low* off-site residual risk and were considered broadly acceptable
- The Project satisfies the relevant State Code 27 POs, provided the identified proposed controls are implemented for the Project.

The RMAR demonstrates that risks to human health and safety, and to the built and natural environment arising from the Project have been minimised and are tolerable, using recognised hazard and risk criteria, thereby meeting the objectives of State Code 27.

13 REFERENCES

1 State of Queensland, the Department of State Development, Infrastructure, Local Government and Planning, “State Development Assessment Provisions – State Code 27: Battery storage facility development”, Version 3.5, December 2025.

2 Queensland Government, “Planning Act 2016”, as at 27 April 2026, https://www.legislation.qld.gov.au/view/html/inforce/current/act-2016-025

3 Queensland Government, “Planning Regulation 2017”, as at 1 May 2026, https://www.legislation.qld.gov.au/view/html/inforce/current/sl-2017-0078.

4 Etheridge Shire Council, “Etheridge Shire Council Planning Scheme”, December 2025.

5 Australian Standard, AS IEC 62619:2023, “Secondary cells and batteries containing alkaline or other non-acid electrolytes”, Standards Australia, 2023.

6 Australian/New Zealand Standard, AS/NZS 4681:2000, “The storage and handling of Class 9 (miscellaneous) dangerous goods and articles”, Standards Australia, 2000.

7 Australian/New Zealand Standard, AS/NZS 3000:2018, “Electrical installations (Wiring Rules)”, Standards Australia, 2018.

8 Australian Standard, AS/NZS 2067:2016, “Substations and High Voltage Installations Exceeding 1kV a.c.”, Standards Australia, 2016.

9 National Fire Protection Association (NFPA), “NFPA 855: Standard for the Installation of Stationary Energy Storage Systems”, 2026.

10 National Fire Protection Association (NFPA), “NFPA 69 – Standard on Explosion Prevention Systems”, 2024.

11 National Fire Protection Association (NFPA), “NFPA 68 – Standard on Explosion Protection by Deflagration Venting”, 2023.

12 Australian Standard, AS ISO 31000:2018, “Risk management – Guidelines”, Standards Australia, 2018.

13 Australian/New Zealand Standard, AS/NZS 5139:2019, “Electrical installations – Safety of battery systems for use with power conversion equipment”, Standards Australia, 2025.

14 Ai Group, Consumer Electronics Suppliers Association, Clean Energy Council, CSIRO and Smart Energy Council, “Best Practice Guide: Battery Energy Storage”, Version 1.0, 6 July 2018.

15 Australian Energy Council Limited, Battery Energy Storage Systems Guidance Report, Revision 1, 12 September 2024.

16 Fire & Risk Alliance, LLC, “Assessment of Potential Impacts of Fires at BESS Facilities”, American Clean Power, April 25 2025, https://cleanpower.org/wp-content/uploads/gateway/gateway/2025/04/Safety-Executive_Summary_04-25-25.pdf.

17 Fyfe Pty Ltd, “Kidston Natural Hazards Risk Assessment”, File No. 250711, Final V1, 30 April 2026.

18 The Fire Protection Research Foundation, “Lithium-Ion Batteries Hazard and Use Assessment”, July 2011, https://www.nrc.gov/docs/ML1719/ML17191A294.pdf

19 Society of Fire Protection Engineers (SFPE) Foundation, “Environmental and health impacts of thermal runaway events in outdoor lithium-ion battery energy storage system installations”, June 2025, https://doi.org/10.64167/3d04-pax1.

20 R4Risk, “Kidston Battery Energy Storage System – Preliminary Fire Safety Study”, Release 1, R4Risk Ref.: 314-04, 25 June 2026.

21 Australian Radiation Protection and Nuclear Safety Agency, “Extremely low frequency electric and magnetic fields”, https://www.arpansa.gov.au/understanding-radiation/what-is-radiation/non-ionising-radiation/low-frequency-electric-magnetic-fields , Accessed 13 March 2025.

22 Rytenskild Traffic Engineering, “Traffic Impact Assessment – Kidston BESS Project”, Version 1, 28 April 2026

23 Bureau of Meteorology, Climate Statistics for Australian Locations, Georgetown Post Office, Site No. 030018, https://www.bom.gov.au/climate/averages/tables/cw_030018.shtml.

24 Fyfe Pty Ltd, “Kidston Bushfire Management Plan”, File No. 250711, Final V1, 30 April 2026.

25 Queensland Fire and Emergency Services, “Bushfire Resilient Communities - Technical Reference Guide for the State Planning Policy State Interest ‘Natural Hazards, Risk and Resilience – Bushfire”, October 2019, https://www.fire.qld.gov.au/sites/default/files/2021-05/Bushfire-Resilient-Communities.pdf.

26 Bureau of Meteorology, Australian Severe Storms Archive, https://www.bom.gov.au/australia/stormarchive/, Accessed 20 March 2026.

27 Queensland Government. (2025b). Queensland Floodplain Assessment Overlay (QFAO), https://www.data.qld.gov.au/dataset/queensland-floodplain-assessment-overlay, Accessed 20 March 2026.

28 Geoscience Australia, “Peak Ground Acceleration 10% in 50-year mean hazard (g)”, Series:PP-2231-8”, https://www.arcgis.com/home/item.html?id=2c98e762d404406bab0e14079a5ddc43, Accessed 17 March 2026.

29 Australian Standard, AS/NZS 1768:2007, “Lightning Protection.”, Standards Australia, 2007.

30 Energy Networks Australia (ENA), “Substation Earthing Guide”, ENA DOC 045-2022 (EG-1), 2022.

31 Australian/New Zealand Standard, AS/NZS 7000:206, “Overhead Line Design”, Standards Australia, 2016.

32 Underwriters Laboratories (UL), “ANSI/CAN/UL 9540A – Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems”, Fifth Edition, March 2025.

33 Australasian Fire and Emergency Service Authorities Council Limited, “Large-scale battery energy storage system installations guideline”, Version 1.0, 5 February 2025.

34 TUV Rheinland, “AESC-INF-04-009 Grid Stack Pro 5000 V1E AESC 530Ah Large-Scale Fire Test – Test Report”, Report No.: CN25A03C 001, 28 October 2025.

APPENDIX A: RISK REGISTER

This appendix summarises the hazard identification and risk assessment conducted on the Kidston BESS Project. The hazards are listed alongside the identified potential causes, consequences, and controls. The residual risk (i.e. the risk following the implementation of the identified controls) was estimated for hazards with potential off-site impacts.

Risk Register

Hazardous Event	Cause	Consequence	Controls	Type	Consequence Category		Off-Site Impact?	Off-Site Residual Risk			Comment
					H&S	Env.		L	S	RR	
1. Battery module component failure	Component failures within battery system equipment could be caused by: - Internal short circuits - Physical damage to battery equipment (e.g. dropped objects) - Manufacturing defects - Failure to return to service correctly (e.g. remove foreign objects, ensure plant is fully assembled, enable all systems).	Thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site due to heat radiation and/or toxic exposure - On-site environmental impacts from toxic combustion by-product deposition. - Minor health impacts to off-site receptors from smoke inhalation.	Preventative maintenance	OPS	☑	☑	Yes	Unlikely	Minor	Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			Explosion prevention	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			SCADA and operator response	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
2. Over charging / high-rate charging	Overcharging or high-rate charging of batteries could be caused by an Energy Management System fault or out of range voltage from the PCS/ transformer.	Thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site due to heat radiation and/or toxic exposure - On-site environmental impacts from toxic combustion by-product deposition. - Minor health impacts to off-site receptors from smoke inhalation..	Energy management system	OEM	☑	☑	Yes	Unlikely	Minor	Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Electrical equipment monitoring	OPS							
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			Explosion prevention	OEM							
			SCADA and operator response	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
3. Battery module coolant leak	A leak of coolant from the battery modules could be caused by a mechanical failure, damage to a battery container (i.e. during lifting) or incorrect maintenance.	- Internal leak causing ingress of coolant to battery or other electrical components and short circuiting. - Battery thermal runaway, resulting in fire/explosion and release of smoke and toxic vapours. Potential for minor health impacts to off-site receptors from smoke inhalation. - External leak causing injury during contact with personnel and/or on-site environmental impacts.	Preventative maintenance	OPS	☑	☑	Yes	Unlikely	Minor	Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Containerised battery design - minimises the degree of release	OEM							
			Battery management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			Explosion prevention	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			SCADA and operator response	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
			First aid as per SDS	OPS							
4. Battery module electrolyte leak	A release of electrolyte from a battery cell could be caused by damage such as crush or puncture during installation or maintenance.	Thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site due to heat radiation and/or toxic exposure - On-site environmental impacts from toxic combustion by-product deposition. - Minor health impacts to off-site receptors from smoke inhalation.	Preventative maintenance	OPS	☑	☑	Yes	Unlikely	Minor	Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Containerised battery design - minimises the degree of release	OEM							
			Battery management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			Explosion prevention	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			SCADA and operator response	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							

Hazardous Event	Cause	Consequence	Controls	Type	Consequence Category		Off-Site Impact?	Off-Site Residual Risk			Comment
					H&S	Env.		L	S	RR	
			Operational Emergency Management Plan	OPS							
			First aid as per SDS	OPS							
5. Incorrect disposal of hazardous waste	Storage of waste and/or damaged battery system equipment (e.g. electrolyte, damaged cells).	- Fire - Thermal runaway reaction of waste battery system equipment and release of toxic gases within the immediate area.	Battery storage and disposal procedures	OPS	☑	☑	No				It was considered that a fire within hazardous waste storage areas would be contained to the area, and limited by the combustible material available and would not escalate to other areas of the site.
			Spare battery modules kept at a low state of charge	OPS							
			Battery recycling strategy	OPS							
			Site drainage system and containment systems	DES							
			Firefighting infrastructure	DES							
			Emergency site access	DES							
			Site layout and separation	DES							
			Operational Emergency Management Plan	OPS							
6. Exposure to electrical hazards	Electrical failures, mechanical damage, or overheating caused by: - Faulty equipment - Incorrect installation - Incorrect maintenance - BMS / control system failure - Battery casing / enclosure damage - Water ingress into electrical infrastructure.	- Arc flash/bursts resulting in fire - Electrocution.	Earthing design	DES	☑	☐	No				
			Preventative maintenance	OPS							
			Containerised battery design	OEM							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
			Site induction and training (i.e. high voltage areas)	OPS							
			Warning signs (electrical hazards, arc flash)	OPS							
7. Transformer fault	Faults in transformers or switchgear, such as electrical failures, mechanical damage, overheating.	Transformer explosion/fire causing injury/fatality to a person on-site.	Transformer bund	DES	☑	☐	No				
			Power conversion equipment cooling system	DES							
			Preventative maintenance	OPS							
			Electrical equipment monitoring	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
8. Loss of insulating oil in transformers	Loss of transformer insulating oil or moisture ingress into transformer oil result in arcing, high voltage hazards and transformer fire. Potential causes include: - Maintenance errors - Failure of fittings / seals, corrosion.	- Electrocution - Transformer explosion/fire causing injury/fatality to a person on-site.	Transformer bund	DES	☑	☐	No				
			Preventative maintenance	OPS							
			Electrical equipment monitoring	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
9. Exposure to extremely low frequency electric and magnetic fields (ELF EMF)	Normal operation of energised high-voltage electrical infrastructure.	High level exposure of EMF to on-site personnel may affect function of the nervous system.	Exposure to personnel is short duration in nature	OPS	☑	☐	No				Adverse health effects from ELF EMF have not been established based on findings of reviews conducted by credible authorities.
10. Loss of containment of firefighting run-off water	Response to a fire	Firefighting run-off water contains toxic firefighting chemicals, which could run off into ground soil or nearby waterways (i.e. Charles Creek).	Site drainage system and containment systems	DES	☐	☑	Yes	Rare	Moderate	Low	Residual Risk was evaluated based on off-site Environmental consequences. Due to the volume of water used in fighting battery fires, considerable dilution of firefighting chemicals would occur.
11. Spill of dangerous goods	A spill of dangerous goods may be caused by: - Impact from vehicles, dropped objects, or plant movement during operations or maintenance	- Localised on-site health and safety (e.g. chemical exposure) - Localised on-site environmental impacts	Procedures for storage and handling of dangerous goods	OPS	☑	☑	No				Operations and maintenance activities may involve the use of minor quantities of flammable solvents, transformer oil etc.
			Preventative maintenance	OPS							
			Spill kits	DES							

Hazardous Event	Cause	Consequence	Controls	Type	Consequence Category		Off-Site Impact?	Off-Site Residual Risk			Comment
					H&S	Env.		L	S	RR	
	- Improper operations and maintenance, including overfilling.		Site layout and separation	DES							Appropriate storage and handling of firefighting chemicals will be considered as per the FSS.
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
12. Erosion	Erosion could occur during the construction phase of the Project.	Contaminated water run off into nearby waterways (i.e. Charles Creek).	The Project area is a flat landform	DES	☐	☑	Yes	Rare	Moderate	Low	Residual Risk was evaluated based on off-site Environmental consequences.
			Construction Environment Management Plan	OPS							
			Site drainage system and containment systems	DES							The Natural Hazard Risk Assessment has identified the unmitigated likelihood of erosion as 'Moderate' and the overall risk of erosion as Low due to the flat nature of the land.
13. Loss of auxiliary power	A loss of auxiliary power to the battery units may result in shutdown of the thermal monitoring and cooling systems.	Thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site due to heat radiation and/or toxic exposure - On-site environmental impacts from toxic combustion by-product deposition. - Minor health impacts to off-site receptors from smoke inhalation.	Uninterruptible power supply	DES	☑	☑	Yes	Unlikely	Minor	Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Explosion prevention	OEM							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			Operational Emergency Management Plan	OPS							
14. External response to emergency	Emergency responders entering the Project area when responding to a fire or thermal runaway event.	There is the potential for injury from exposure to: - Radiant heat, smoke and toxic combustion by-products - Live electrical infrastructure.	Emergency site access	DES	☑	☐	Yes	Rare	Major	Medium	Residual Risk was evaluated based on Health & Safety consequences to emergency responders.
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
15. Aurumfield substation electrical fault	An electrical fault at the Aurumfield substation.	No consequences of concern within the Project were identified. There is potential for operational disruptions or grid connection issues.	Electrical isolation via transformers, inverters, and protection systems	DES	☐	☐	No				
			Electrical equipment monitoring	OPS							
16. HV powerline arcing / flashover	An arcing / flashover event may be caused by: - Degradation or contamination of insulators - Transient overvoltage events - Elevated temperatures.	Electrical arcing/flashover causing a fire within the Project area. There is potential for injury to onsite personnel impacted by heat radiation.	Powerline design	DES	☑	☐	No				
			Asset protection zones	DES							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
17. HV powerline failure	A structural failure of a transmission tower or sagging of the conductors may be caused by ageing or faulty equipment or on-site vehicle impact.	Injury/fatality to person on site due to impact or exposure to live electrical equipment. Impact to battery units causing battery thermal runaway, fire/explosion and release of smoke and toxic gases impacting off-site personnel and the environment.	Powerline design	DES	☑	☑	Yes	Rare	Minor	Very Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			Explosion prevention	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			Site layout and separation	DES							
			Asset protection zones	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
18. Aircraft crash	An aerodrome is located approximately 3 km from the Project location and is used to transport personnel to and from the Kidston Clean Energy Hub, as well as for occasional private aircraft operations. An aircraft impact could result in physical damage to Project infrastructure, including battery units, with the potential to initiate a thermal runaway event.	Thermal runaway, fire/explosion and release of toxic gases leading to: - Minor, short-term injury to off-site receptors from smoke inhalation - On-site environmental impacts from toxic combustion by-product deposition.	Emergency site access	DES	☑	☑	Yes	Rare	Minor	Very Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).

Hazardous Event	Cause	Consequence	Controls	Type	Consequence Category		Off-Site Impact?	Off-Site Residual Risk			Comment
					H&S	Env.		L	S	RR	
19. Vehicle impact	A vehicle collision could physically damage equipment, including the battery units. The adjacent Gilberton Road is expected to experience a low level of daily traffic. Any vehicle impact is likely to be from on-site personnel at low speeds.	A vehicle impacting the battery units may cause thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site - Minor, short-term injury to off-site receptors from smoke inhalation - On-site environmental impacts from toxic combustion by-product deposition.	Site traffic management	OPS	☑	☑	Yes	Unlikely	Minor	Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Containerised battery design	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
20. Tampering	Intentional tampering, such as theft or sabotage, could damage battery modules or inverters/transformers.	- Electrocution - Transformer explosion/fire. - Battery thermal runaway, fire/explosion and release of smoke and toxic vapours impacting off-site personnel and the environment.	Site security measures	OPS	☑	☑	Yes	Rare	Minor	Very Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Containerised battery design	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
21. Damage from wildlife	Wildlife may damage equipment (e.g. gnawing cables, depositing foreign objects inside equipment, shorting equipment).	- Electrocution - Transformer explosion/fire. - Battery thermal runaway, fire/explosion and release of smoke and toxic vapours impacting off-site personnel and the environment.	Containerised battery design	OEM	☑	☑	Yes	Rare	Minor	Very Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Preventative maintenance	OPS							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
22. High ambient temperature	Excessive ambient heat (e.g. heat waves) could potentially lead to overheating of the battery cells.	Thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site due to heat radiation and/or toxic exposure - On-site environmental impacts from toxic combustion by-product deposition. - Minor health impacts to off-site receptors from smoke inhalation.	Preventative maintenance	OPS	☑	☑	Yes	Rare	Minor	Very Low	The closest Bureau of Meteorology weather station with long-term, recent data is the Georgetown Post Office. More than 30 years of records are available, with a maximum recorded temperature of 43.5°C
			Battery management system	OEM							Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Thermal management system	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation)
			Smoke, heat and flammable gas detection	OEM							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							

Hazardous Event	Cause	Consequence	Controls	Type	Consequence Category		Off-Site Impact?	Off-Site Residual Risk			Comment
					H&S	Env.		L	S	RR	
											and excludes impacts to intruders.
23. Low ambient temperature	Operation of battery cells at cell temperatures below 0°C could lead to degradation of the cell chemistry, potentially leading to thermal runaway reaction.	Thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site due to heat radiation and/or toxic exposure - On-site environmental impacts from toxic combustion by-product deposition. - Minor health impacts to off-site receptors from smoke inhalation.	Preventative maintenance	OPS	☑	☑	Yes	Rare	Minor	Very Low	The closest Bureau of Meteorology weather station with long-term, recent data is the Georgetown Post Office. More than 30 years of records are available, with a minimum recorded temperature of 0.3°C.
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			Explosion prevention	OEM							Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			SCADA and operator response	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
24. Lightning strike	Queensland as a state experiences frequent episodes of severe storm events which generate hazardous conditions such as lightning. A lightning strike within the Project area could result in electrical overload, initiating a fire event involving the batteries or the electrical equipment.	- Electrocution - Transformer explosion/fire. - Battery thermal runaway, fire/explosion and release of smoke toxic vapours impacting off-site personnel and the environment.	Lightning protection system	DES	☑	☑	Yes	Possible	Minor	Medium	The Natural Hazard Risk Assessment has identified the unmitigated likelihood of a storm event as 'Almost Certain'.
			Transformer bund	DES							
			Battery management system	OEM							
			Thermal management system	OEM							Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Smoke, heat and flammable gas detection	OEM							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
25. Bushfire	The Project is located within areas of Potential Impact Buffer and next to Medium Potential Bushfire Intensity. A bushfire in the vicinity may result in exposure of the battery units or electrical equipment to high levels of radiant heat, leading to runaway thermal reaction.	- Transformer explosion/fire - Battery thermal runaway, fire/explosion and release of smoke and toxic vapours impacting off-site personnel and the environment.	Asset protection zones	DES	☑	☑	Yes	Possible	Minor	Medium	The Natural Hazard Risk Assessment has identified the unmitigated likelihood of a bushfire event as 'Likely'.
			Battery management system	OEM							
			Thermal management system	OEM							
			Emergency site access	DES							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
26. Flooding	The Project area is directly adjacent to a Level 1 Flood Hazard Prone Area, and the broader area has a documented history of flooding events. Flooding on site may result in exposure of the battery units / transformers to water ingress, resulting in internal shorts.	- Electrocution - Transformer explosion/fire. - Battery thermal runaway, fire/explosion and release of smoke and toxic vapours impacting off-site personnel and the environment.	Containerised battery design	OEM	☑	☑	Yes	Unlikely	Minor	Low	A flood may also interfere with the grid connection to the Project (e.g. down power lines).
			Site drainage system and containment systems	DES							
			Thermal management system - humidity control	OEM							The Natural Hazard Risk Assessment has identified the unmitigated likelihood of a flood event as 'Moderate'.
			SCADA and operator response	OPS							
			Explosion prevention	OEM							Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
27. Cyclone	Kidston is indirectly influenced by tropical cyclone activity and is subject to severe storm events, which are identified as a significant regional hazard.	- Electrocution - Transformer explosion/fire. - Battery thermal runaway, fire/explosion and release of smoke and toxic vapours impacting off-	Plant design for wind	DES	☑	☑	Yes	Rare	Minor	Very Low	The Natural Hazard Risk Assessment has identified the unmitigated likelihood of a cyclone event as 'Very Unlikely'.
			Containerised battery design	OEM							

Hazardous Event	Cause	Consequence	Controls	Type	Consequence Category		Off-Site Impact?	Off-Site Residual Risk			Comment
					H&S	Env.		L	S	RR	
	Heavy winds, intense rainfall and rapid-onset flooding during a cyclone could physically damage the battery units. Water ingress in the battery units or electrical equipment may result in internal shorts.	site personnel and the environment.	Thermal management system - humidity control	OEM							Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Site drainage system and containment systems	DES							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
28. Storm	The Project location is particularly influenced by severe storm systems which are the most frequent natural hazard in Queensland. Thunderstorms have the potential to generate hazardous conditions including destructive winds, large hail, and dangerous lightning. A storm event may lead to physical damage or water ingress in the battery units or electrical equipment, resulting in internal shorts.	- Electrocution - Transformer explosion/fire. - Battery thermal runaway, fire/explosion and release of smoke and toxic vapours impacting off-site personnel and the environment.	Plant design for wind	DES	☑	☑	Yes	Possible	Minor	Medium	The Natural Hazard Risk Assessment has identified the unmitigated likelihood of a storm event as 'Almost Certain'.
			Containerised battery design	OEM							
			Thermal management system - humidity control	OEM							Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Site drainage system and containment systems	DES							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
29. Earthquake	An earthquake could mechanically impact the battery units or adjacent plant (e.g. power lines). The Project is located in a Low earthquake risk area.	Considering the proposed layout and equipment type (i.e. no major structures). No major consequence events were identified as a result of an earthquake. Failure of the HV powerlines is considered in "HV powerline failure".	Plant design for earthquake	DES	☐	☐	No				

Appendix G Fire Safety Study

TECHNICALLY SUPERIOR
RISK MANAGEMENT

Fyfe Pty Ltd

Kidston Battery Energy Storage System
Preliminary Fire Safety Study

Release 1, 25 June 2026

R4Risk Ref.: 314-04

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1 EXECUTIVE SUMMARY

Fyfe Pty Ltd (Fyfe) requested R4Risk to undertake a preliminary fire safety study (FSS) on behalf of K3W Project Co Pty Ltd (K3W) for the proposed commissioning of a battery energy storage system (BESS). The BESS will be installed as part of the Kidston BESS Project ("the Project") near the town of Kidston in Far North Queensland.

The FSS was split into the following two stages:

- Stage 1 – Preliminary FSS
- Stage 2 – Detailed FSS.

Stage 1 of the FSS ("the Preliminary FSS") assessed the potential impacts of BESS fire scenarios and provided guidance for fire prevention, detection, isolation, and firefighting in line with applicable codes and standards. The Project is in the mid-development phase, and the detailed design will be completed in the lead-up to construction. The analysis was based on information available at the time of submission, and where information was unavailable, limitations and assumptions were identified.

Stage 2 of the FSS ("the Detailed FSS") will be conducted in the lead-up to construction when more information becomes available.

The Preliminary FSS identified general fire hazards related to BESS installations with the assumption that industry-standard fire safety controls typically applicable to utility-scale BESS will be provided. Fire safety requirements were provided where opportunities were identified to enhance fire safety controls and ensure the overall fire system aligns with guidance from applicable codes and standards.

The key findings of this FSS are:

- The analysis to determine the minimum separation between battery units is based on preliminary information and an assumed battery type; therefore, a reassessment of this aspect of the FSS should be undertaken as part of the final design following confirmation of the battery supplier and technology. Once reassessed, the separation distances should serve as the basis for the final site layout.
- Downwind impacts from toxic plumes for the criterion representing life-threatening effects are limited to the immediate vicinity of the affected unit, with the criterion representative of irritation and discomfort extending beyond the site boundary onto the adjacent access road.
- Overpressure impacts from a battery unit explosion are largely confined to the BESS Yard, with the criterion representative of a 10% probability of injury extending beyond the site boundary onto the adjacent access road. Asset damage is limited to neighbouring units, with no credible impact to the Project Substation or other site structures.
- Heat radiation from a fire within the Project Substation transformer bund does not impact surrounding site buildings or structures.
- The hydrant system design must be able to supply a minimum of two fire hydrants operating simultaneously at a flow rate of 600 L/min and a pressure of 350 kPa (unassisted) or 700 kPa (when boosted by a fire brigade pumping appliance). This should be based on the two most hydraulically disadvantaged hydrants.

1.1 FIRE SAFETY REQUIREMENTS

The following fire safety requirements have been identified in the Preliminary FSS.

1. *A fit-for-purpose preventative maintenance program should be implemented for the BESS equipment and associated electrical infrastructure to prevent deterioration and/or failures that could contribute to the occurrence of identified fire scenarios. This should include:*

    a. *A documented inspection, testing, and maintenance program for BESS equipment and associated electrical infrastructure to identify degradation, faults, or abnormal conditions that could lead to a fire event.*

b. *Monitoring of key battery parameters via the BMS (e.g. voltage, temperature, current) and identifying conditions indicative of abnormal operation.*

c. *Periodic testing and inspection of safety systems, including electrical isolation devices, fire and gas detection, air cooling system, and explosion prevention measures, to ensure correct operation under fault conditions.*

d. *Inspection and maintenance of the thermal management and energy management systems, to ensure continued effectiveness in maintaining battery unit equipment within their specified operating limits.*

2. *Following confirmation of the battery technology, undertake a reassessment of minimum separation distances between the battery units as part of the final design. Preliminary fire modelling undertaken on Fluence's standard GSP5000 battery has determined that the supplier-proposed separation distances underpinning the current layout may require refinement following confirmation of the final battery technology to prevent fire propagation. Once reassessed, the separation distances should serve as the basis for the final site layout.*

3. *Ensure separation between stored spare battery modules and dangerous goods and/or other combustible materials within the warehouse to reduce the potential for fire escalation.*

4. *Maintain spare battery modules stored within the warehouse at a state of charge below 30% as indicated within NFPA 855, to limit the potential for long-duration, self-sustaining fires and remove the requirement for fixed firefighting systems (e.g. sprinklers).*

5. *Integrate the gas, heat, fire, and smoke detection systems with the BMS and SCADA systems to automatically initiate system shutdowns, electrical isolation, and raise alarms to notify site personnel.*

6. *Integrate the battery unit fire and smoke detection systems with the BMS and SCADA systems such that their activation automatically notifies emergency services.*

7. *Install smoke detectors within the Project site warehouse to provide early warning to site personnel in the event of a fire involving stored battery modules or dangerous goods.*

8. *Provide a means for manual electrical isolation of individual battery units from the BESS, including the installation of emergency shutdown devices located within the control room and/or at other safe, readily accessible locations remote from the BESS Yard, to enable operator-initiated isolation in the event that automated or primary isolation measures fail.*

9. *Provide a fire hydrant system in line with AS 2419.1. Including the following requirements:*

a. *Hydrant layout should ensure coverage to all identified fire design scenarios (e.g. BESS container units, Project Substation, etc.). The coverage provided by each hydrant is between 10 m and 70 m, in line with AS 2419.1. Additionally, each hydrant outlet should be located at least 10 m from the nearest electrical infrastructure.*

b. *The hydrant system design must be able to supply a minimum of two fire hydrants operating simultaneously at a flow rate of 600 L/min and a pressure of 350 kPa (unassisted) or 700 kPa (when boosted by a fire brigade pumping appliance). This should be based on the two most hydraulically disadvantaged hydrants.*

c. *It can be verified that the reticulated firewater system can achieve the flow and pressure requirements for at least four hours, or, alternatively, provision is made for an on-site water storage or a diesel-operated firewater pump where these requirements cannot be met.*

10. *The Project Substation transformer should be placed within a bund sized to contain the entire oil release from the transformer, with an additional allowance for rainfall and firefighting water, and an underflow discharge to remove water from the bund without contaminating the surrounding soil and waterways.*

11. *Where a containment system is connected to a reticulated stormwater system, the containment system should be designed such that it can be automatically isolated from the stormwater system upon the activation of any fire safety measures, such as smoke / fire detection.*

12. *Confirm the sizing and adequacy of firewater and spill containment systems once information on the final firewater system arrangement and site layout become available.*

2 ACRONYMS AND GLOSSARY

2.1 ACRONYMS

AEGL	Acute Exposure Guideline Level
AFAC	Australasian Fire and Emergency Service Authorities Council
APZ	Asset protection zone
AS	Australian Standard
AS/NZS	Australian Standards / New Zealand Standards
BAL	Bushfire attack level
BESS	Battery energy storage system
BMP	Bushfire Management Plan
BMS	Battery management system
CO	Carbon monoxide
CO_2	Carbon dioxide
DG	Dangerous goods
ELF	Extremely low frequency
EMF	Electromagnetic field
FRNSW	Fire and Rescue New South Wales
FSS	Fire Safety Study
H_2	Hydrogen
HCN	Hydrogen cyanide
HF	Hydrogen fluoride
HIPAP	Hazardous Industry Planning Advisory Paper
HRR	Heat release rate
HV	High voltage
IP	Ingress protection
K3W	K3W Project Co Pty Ltd
LEL	Lower explosive limit
LFP	Lithium iron phosphate
LSFT	Large-scale fire testing
MVPS	Medium-voltage power systems
NC	No criteria
NFPA	National Fire Protection Association
NO	Nitrogen monoxide
NR	Not reached
OEMP	Operational emergency management plan
OHTL	Overhead transmission line
PCS	Power conversion systems
PO	Performance outcome
QFD	Queensland Fire Department
RMAR	Risk management assessment report
SARA	State Assessment and Referral Agency
SCADA	Supervisory control and data acquisition
SDS	Safety data sheet

SEP	Surface emissive power
STEL	Short-term exposure limit
UL	Underwriters Laboratories

2.2 GLOSSARY

Battery energy storage system (BESS)	(a) A complete installation that – (i) converts electricity into stored energy; and (ii) releases stored energy as electricity; and (b) includes any equipment necessary for the operation of the plant, including battery units (containing battery cells, modules and racks), power conversion systems, control systems, balance-of-plant, site infrastructure, and grid connection assets.
Battery unit	A pre-assembled system of battery cells arranged into modules and racks within a container, including auxiliary equipment required for operation, monitoring and protection, such as the battery management system (BMS).
Bund	Embankment or wall that forms the perimeter of a compound.
Consequence	An outcome or impact resulting from a hazardous event that reflects the magnitude and severity of the event in terms of effects on human health and the built and natural environment.
Control	Any system, procedure, process, device or other means of eliminating, preventing, reducing or mitigating the risk of a hazardous event. Controls include physical equipment, process control systems, management processes, operating or maintenance procedures, the emergency plan and key personnel and their actions.
Firewater	Water used in the fire protection system to deliver foam and/or cooling water.
Material Change of Use	Refers to a significant alteration in how a property, building or land is utilised.
Mitigation	The means for reducing the scale of the consequences of a hazardous event once it occurs. This includes approaches to minimising impacts, limiting escalation, and identification of suitable control measures.
Prevention	The means for reducing the likelihood of a hazardous event occurring. This includes approaches to inherent safety and the identification of suitable control measures that prevent a hazardous event from occurring.
The Project	The BESS is being developed as part of the Kidston BESS Project, referred to as “the Project”
Project Substation	The BESS will connect to the Project Substation, which forms part of the Project site, that will raise the voltage to the level required for connection to the Aurumfield Substation

3 INTRODUCTION

3.1 BACKGROUND AND OBJECTIVES

K3W Project Co Pty Ltd (K3W) are seeking development approval from the State Assessment and Referral Agency (SARA) for a Material Change of Use for the construction of a Battery Energy Storage System (BESS). The Kidston BESS Project ("the Project") is being developed as part of the Kidston Clean Energy Hub near the town of Kidston in Far North Queensland.

A preliminary fire safety study (FSS) must be submitted as part of the approval process, in line with the relevant POs of Queensland State Code 27: Battery storage facility development [1].

Fyfe Pty Ltd requested R4Risk to undertake an FSS on behalf of K3W for the proposed operations at the Project site. The FSS was split into the following two stages:

- Stage 1 – Preliminary FSS
- Stage 2 – Detailed FSS.

Stage 1 of the FSS ("the Preliminary FSS") (this document) was intended to provide a framework for the detailed assessment and is based on the preliminary design information available at the time of application lodgement. This stage includes an assessment of general BESS fire hazards and provides high-level guidance on the fire prevention philosophy, firefighting requirements, and firewater considerations in consultation with applicable codes and standards.

The Project is in the mid-development phase, and the detailed design will be completed in the lead-up to construction. Stage 2 of the FSS ("the Detailed FSS") will be completed once detailed design has been finalised (i.e. when the battery technology, site layout and proposed fire protection systems are confirmed). This stage will be a comprehensive FSS that evaluates the adequacy of the proposed design against the performance requirements.

3.2 SCOPE

The scope of the Preliminary FSS covered a high-level review of the major equipment and operations associated with hazardous materials and areas at the Project site, including:

- Battery units
- Power conversion systems
- Project Substation
- Site facilities (i.e. storage facilities).

The following were excluded from the scope of this study:

- The existing Aurumfield Substation
- The Kidston Solar and Pumped Hydro Projects within the Clean Energy Hub
- Essential safety measures per building codes required for buildings at the Project site.

4 FSS METHODOLOGY

4.1 OVERVIEW

The Preliminary FSS assessed the potential impacts of BESS fire scenarios and provided guidance for fire prevention, detection, isolation, and firefighting in line with applicable codes and standards.

The methodology applied in this study was consistent with the principles and objectives described in Hazardous Industry Planning Advisory Paper (HIPAP) No.2 "Fire Safety Study Guidelines" [2]. A key aspect of the HIPAP guidelines is that the fire safety 'system' should be based on a specific analysis of hazards and consequences and that the proposed system's elements should be tested against that analysis.

This Preliminary FSS discusses fire prevention, detection, isolation, and protection measures ("fire systems") necessary to manage the hazards associated with credible fire scenarios at the Project site. A "performance-based" approach, which considers the hazards presented by each representative scenario, was used to identify the intended roles and performance objectives of the fire systems.

The basic steps involved in the preparation of the FSS were as follows:

1. *Qualitative Identification of Hazardous Scenarios*
   The equipment and activities proposed for the Project site were reviewed to identify credible fire scenarios for analysis. This task included a review of credible BESS fire events documented in the literature.

2. *Consequence Analysis*
   The potential consequences of the identified fire scenarios were modelled to determine the potential effects.

3. *Fire Prevention Strategies / Measures*
   Fire prevention (i.e. the minimisation of the likelihood of fires and/or reduction in their severity or extent) is the preferred means of managing fire risk. Strategies to prevent fires and limit their severity were identified using guidance in relevant codes and standards for BESS installations, with reference to the identified scenarios.

4. *Fire Detection, Isolation and Protection*
   Fire detection, isolation, and protection measures to manage fire hazards were identified using guidance from relevant codes and standards for BESS installations.

5. *Firefighting Water Demand and Supply*
   The firefighting water demand was calculated for each identified scenario in accordance with relevant codes and standards. The firewater provision to the site was assessed, and fire safety requirements were provided where necessary.

The approach is illustrated by the flowchart presented in Figure 1 [2].

The findings of the FSS were assessed against the requirements of Queensland State Code 27: Battery storage facility development [1], detailed in Section 4.2.

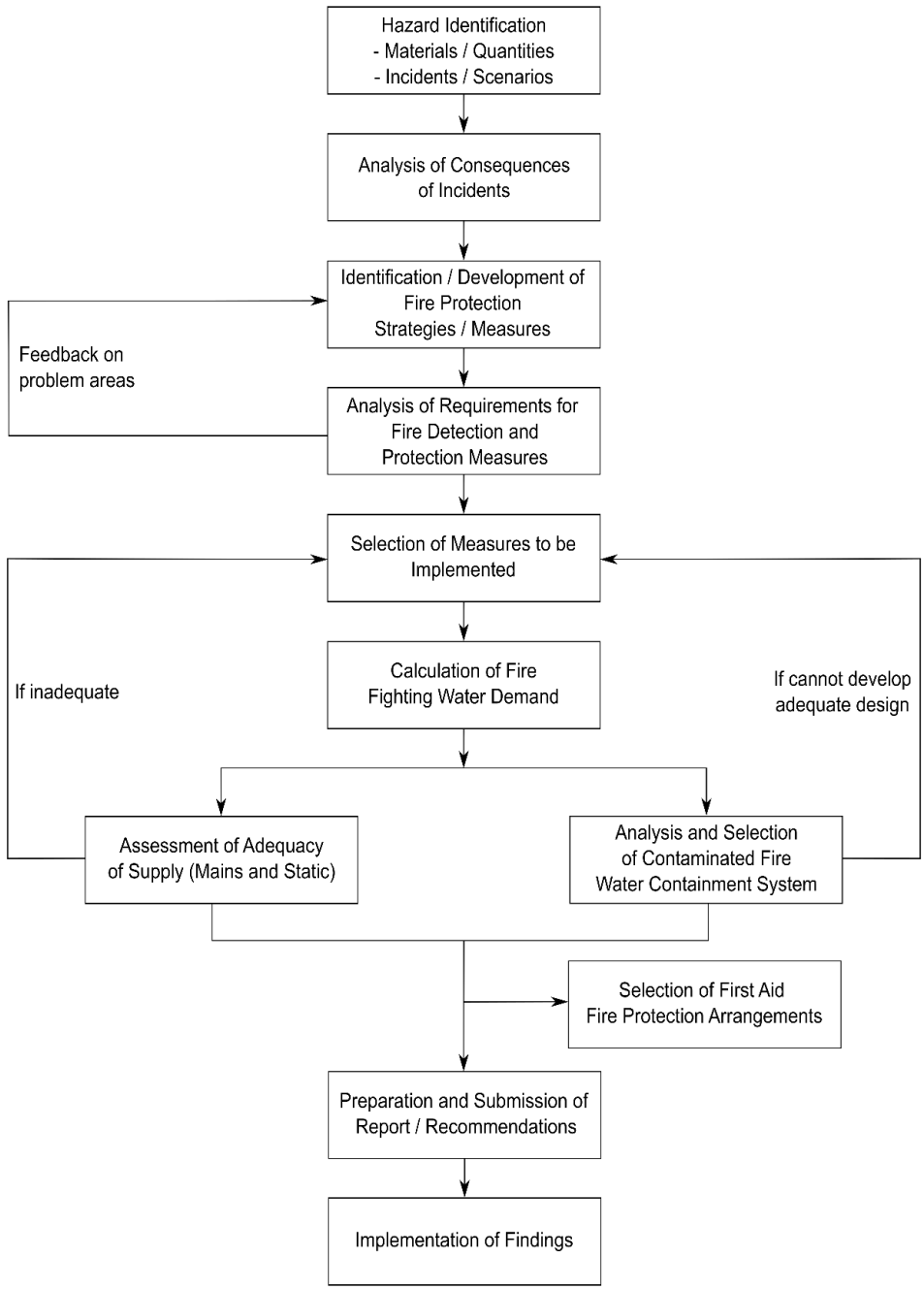


Figure 1: Fire Safety Study Methodology [2]

4.2 State Code 27: Battery Storage Facility Development

The Queensland Planning Act 2016 [3] and the Queensland Planning Regulation 2017 [4] require SARA to assess proposed large-scale BESS developments against the State Development Assessment Provisions, State Code 27: Battery storage facility development [1].

State Code 27 establishes performance-based assessment benchmarks to ensure that battery storage facilities are appropriately located, designed, operated, and decommissioned to manage potential impacts on people, property, and the environment. The code lists a total of 35 POs, of which PO3 – PO7 and PO18 have been the focus of this FSS.

An overview of the State Code 27 POs relevant to this FSS is provided in Table 1.

Table 1: State Code 27 Performance Outcomes Relevant to the FSS [1]

Performance Outcome	Criteria Requirement
PO3 – Risk Mitigation	Development mitigates the risks of fire, explosion and thermal runaway from battery storage infrastructure.
PO4 – Risk Mitigation	Development is designed to ensure fire and thermal events can be contained and isolated to prevent escalation and propagation to other developments and uses on and off-site.
PO5 – Incident Response	Development is designed to facilitate effective and efficient emergency service access and response in the event of a fire, bushfire (including cleared firefighting areas at the interface of hazardous vegetation), explosion, contamination leak or any other incident requiring an emergency service response.
PO6 – Incident Response	The development: • Provides appropriate fire detection, monitoring and notification to the site operator; and • Ensures the electrical safety of the facility, in the event of an incident requiring emergency response.
PO7 – Incident Response	Development demonstrates that there is capacity to provide a reliable, sustainable and fit-for-purpose water supply.
PO18 – Protecting water quality and stormwater management	Development prevents the release of contaminants to surface water or groundwater in the event of an incident, including a fire or explosion.

4.3 GUIDELINES, CODES AND STANDARDS

4.3.1 Primary Codes and Guidelines

Fire system performance requirements were defined based on guidance obtained from the following BESS-specific industry codes and guidelines:

- Australasian Fire and Emergency Service Authorities Council (AFAC) (2025), Large-scale battery energy storage system installations [5]
- Fire and Rescue New South Wales (FRNSW), Technical information sheet (2026), Large-scale external lithium-ion battery energy storage systems [6]
- National Fire Protection Association (NFPA) 855 (2026), Standard for the Installation of Stationary Energy Storage Systems [7]

The AFAC guidance has been specified by the Queensland Fire Department (QFD) for use until Queensland-specific guidance is published. Other Australian state fire departments have published guidance documents, the most recent of which was developed by FRNSW. Given the evolving nature of battery technologies, the FRNSW guidance was used to inform the most current requirements. In the

absence of an applicable Australian Standard for large-scale battery installations, the American national standard NFPA 855 was adopted. These documents are summarised below.

AFAC Guideline

The QFD has adopted the AFAC FSS guideline for large-scale BESS installations with a capacity of 2 MWh or greater, situated externally and not housed within a building. The guideline establishes the key inputs and analysis expected within an FSS, including:

- Identification of fire, explosion and toxicity hazards (including risks to responders)
- Assessment of credible fire scenarios and escalation pathways
- Analysis of on-site and off-site consequence impacts
- Specification of fire prevention, detection and protection measures
- Determination of firefighting water demand, supply and containment
- Consideration of site-specific factors (e.g. bushfire, flood, separation, emergency access).

FRNSW Guideline

FRNSW has published a technical information sheet that outlines the key requirements for preparing an FSS for large-scale external lithium-ion BESS installations. These include, but are not limited to, the following:

- Assessment of credible incidents, including full-enclosure fire with failed protection systems
- Detailed consequence analysis covering fire propagation, explosion and toxic emissions
- Requirement for large-scale fire testing (LSFT) to inform consequence analysis
- Demonstration of adequate separation between BESS units and infrastructure
- Justification of fire detection and protection systems (performance, redundancy, automation)
- Development of emergency plans and provision of emergency response information.

NFPA 855

NFPA 855 is an American National Standard which provides a framework for the fire-safe design, installation, and operation of BESS installations, defining minimum requirements for managing fire, explosion, and related hazards. It sets expectations for separation distances, fire detection and suppression, ventilation, explosion control, and emergency response provisions, with the objective of limiting fire propagation and supporting firefighter intervention. The latest edition of NFPA 855 (2026) sets a requirement for fire and explosion testing in line with the Underwriters Laboratories (UL) code UL 9540A [8] and LSFT. UL 9540A includes a test methodology for robustly evaluating the potential for thermal runaway fire propagation within battery systems.

4.3.2 Other Relevant Standards

Relevant Australian Standards (AS) and other NFPA guidance were also consulted, as outlined in Table 2.

Table 2: Relevant Standards

Standard	Description
AS IEC 62619: Secondary cells and batteries containing alkaline or other non-acid electrolytes [9]	AS IEC 62619 includes safety requirements for secondary lithium cells and batteries for use in industrial applications.
AS/NZS 3000: Electrical installations (Wiring Rules) [10]	AS/NZS 3000 sets the fundamental safety requirements for the design, construction and verification of electrical installations.
AS 2067: Substations and high voltage installations exceeding 1 kV AC [11]	AS 2067 establishes safety and design requirements for high-voltage installations, including substations and associated power conversion equipment.
AS 2419.1: Fire hydrant installations Part 1: System design, installation and commissioning [12]	AS 2419.1 specifies the requirements for the design, installation and commissioning of fire hydrant systems to ensure adequate water supply for firefighting.

Standard	Description
AS 1940: The storage and handling of flammable and combustible liquids [13]	AS 1940 sets out requirements for the safe storage, handling and transfer of flammable and combustible liquids to minimise fire and explosion risk.
NFPA 68: Standard on Explosion Protection by Deflagration Venting [14]	NFPA 68 provides requirements for the design and application of deflagration venting systems to safely relieve explosion overpressure and reduce damage.
NFPA 69: Standard on Explosion Prevention Systems [15]	NFPA 69 specifies requirements for explosion prevention systems, including detection, control and suppression measures to prevent the occurrence of combustible atmospheres or ignition.

5 PROJECT DESCRIPTION

5.1 OVERVIEW AND OPERATIONS

The Project proposes a stand-alone grid-forming BESS of up to 250 MW / 1,250 MWh, which will connect from the Project Substation into the existing Aurumfield Substation at 275 kV. The Project is part of the Kidston Clean Energy Hub (Clean Energy Hub), which currently comprises the 50 MW Kidston Solar Project (operational) and the 250 MW / 2,000 MWh Kidston Pumped Storage Hydro Project (under construction).

The construction and commissioning phase is expected to last up to 2 years and will include preparatory site work, construction of the Project, and installation of equipment, as well as commissioning of the plant. This stage of the project would employ up to 120 staff during peak times.

The operational phase of the Project is expected to last approximately 25 years and will employ two to four full-time staff.

Operational activities will include monitoring and control of the BESS by on-site personnel and through a remote system providing real-time and historical performance information. Maintenance will cover general repairs to BESS infrastructure, internal tracks, drainage, and fencing.

At the end of the project life, the Project will be decommissioned. Decommissioning is expected to last approximately one year and will involve the removal of equipment and infrastructure.

5.2 SITE LOCATION AND SURROUNDING LAND USES

The Project is proposed within the Etheridge Shire local government area in Far North Queensland, approximately 280 km west of Townsville, near Kidston. The Project site is located on the historic Kidston Gold Mine and forms part of the broader Clean Energy Hub.

The BESS will be developed in the northern portion of the existing Kidston Solar Farm lot, adjacent to the Aurumfield Substation, as shown in Figure 2. Approximate distances from the Project to nearby Clean Energy Hub projects and infrastructure are as follows:

- Aurumfield Substation: 100 m
- Kidston Pumped Hydro: 300 m
- Kidston Solar Project: 500 m
- Nearest airport used to transport the Clean Energy Hub workforce: 3 km
- Clean Energy Hub workforce accommodation: 5.8 km.

The closest residential area not associated with the Clean Energy Hub is approximately 12 km away.

The Project footprint is located within the decommissioned South Pond area, which has been subject to extensive prior ground disturbance from historic mining activities and subsequent renewable energy developments. Established access routes and electrical infrastructure associated with the Aurumfield Substation already exist on the land.

The surrounding environment falls within the Einasleigh Uplands bioregion, comprising open woodland vegetation and a low population density. The area is classified as a rural zone under the Etheridge Shire Planning Scheme [16]. The Project location is 1.5 km from the nearest waterway, Charles Creek.



Figure 2: Kidston BESS Location

5.3 PLANT AND INFRASTRUCTURE

The proposed Project layout is shown in Figure 3. The Project area is split into two halves, separated by a 20 m wide easement for a 132 kV overhead transmission line (OHTL) for the Kidston Solar Project grid connection. An existing concrete pole (>20 m high) is situated in the centre of this easement area. Access to the Project will be via Gilberton Road, using the existing mine access road.

The "BESS Yard" is situated in the western half of the Project area and is arranged across four areas, separated by 6 m-wide access roads. As shown in Figure 4, the BESS Yard contains the containerised units ("battery units"), associated power conversion system (PCS) units, medium-voltage power systems (MVPS) and auxiliary transformers. The battery units will be configured in parallel rows, with the PCS and MVPS units located at the ends of each row. This layout provides both operational access and additional separation between container groupings.

The eastern half of the Project area will site the Project Substation and associated site facilities, including the control room, switchgear room and storage warehouse.

5.3.1 Battery Energy Storage Systems

BESS installations are designed to store electrical energy and discharge it in a controlled manner to support grid stability, power quality, and energy management objectives. While the exact BESS technology for the Project has not yet been finalised, the proposed BESS configuration and systems for the current design stage are discussed in the following sections, noting that these are only preliminary and may be revised as the design progresses through subsequent stages.

5.3.2 Battery Units

The BESS will comprise pre-assembled battery equipment housed in battery units comparable in size to a standard 20-foot shipping container. The equipment comprises the smallest units ("the cells"), enclosed within battery modules ("modules"), stacked in rows ("racks") within the battery unit. Up to 200 containers will be manufactured off-site and transported to the Project for installation in the BESS Yard, as shown in Figure 4.

The BESS will use a supervisory control and data acquisition (SCADA) system and a battery management system (BMS), which together provide real-time monitoring, fault detection, remote diagnostics and operational control. A power plant controller integrated with an energy management system will manage BESS operations and ensure compliance with grid requirements.

Each battery unit will include an integrated thermal management system, which provides liquid cooling at the battery module level, with air-based cooling and humidity control at the battery unit container level.

5.3.3 General Electrical Equipment

The key electrical equipment within the BESS Yard comprises PCS units, MVPS, and auxiliary transformers. The PCS units contain inverters that convert stored direct current from the battery units to alternating current for export to the grid. Each MVPS includes a ring main unit and a step-up transformer. The electrical configuration comprises two PCS units shared across five battery units, with the two PCS units connected into a single MVPS, as shown in Figure 4.

In total, the Project will include up to 80 inverters and 40 step-up transformers. The PCS and MVPS will be supplied as containerised units manufactured off-site, encompassing the system components, and integrated with air-cooling systems. Electrical and fibre-optic cabling will link the battery units to the PCS and MVPS and link these systems to the site office and distribution centre (which contain monitoring and control equipment).

5.3.4 Project Substation

The Project Substation is separated from the BESS Yard by a 132 kV OHTL easement associated with the Kidston Solar Project. The Project Substation will comprise four harmonic filters and a transformer.

The harmonic filters reduce electrical distortion, while the transformer raises the voltage to the level required for connection to the Aurumfield Substation. The BESS will separately connect from the Project Substation to the Aurumfield Substation.

5.3.5 Site Facilities

Site facilities will include operations and maintenance amenities, including accommodations for monitoring and control equipment, parking, communications equipment, and storage areas. A switchgear room, a control room and a warehouse will also be constructed adjacent to the Project Substation.

The switchgear room will house electrical switchgear and protection equipment required for the Project Substation operation, protection and isolation. The control room will accommodate monitoring, control, and communications systems. The warehouse will store minor quantities of dangerous goods (DG) required for operations and maintenance (e.g. solvents). Spare and waste battery units may also be temporarily stored in this area.

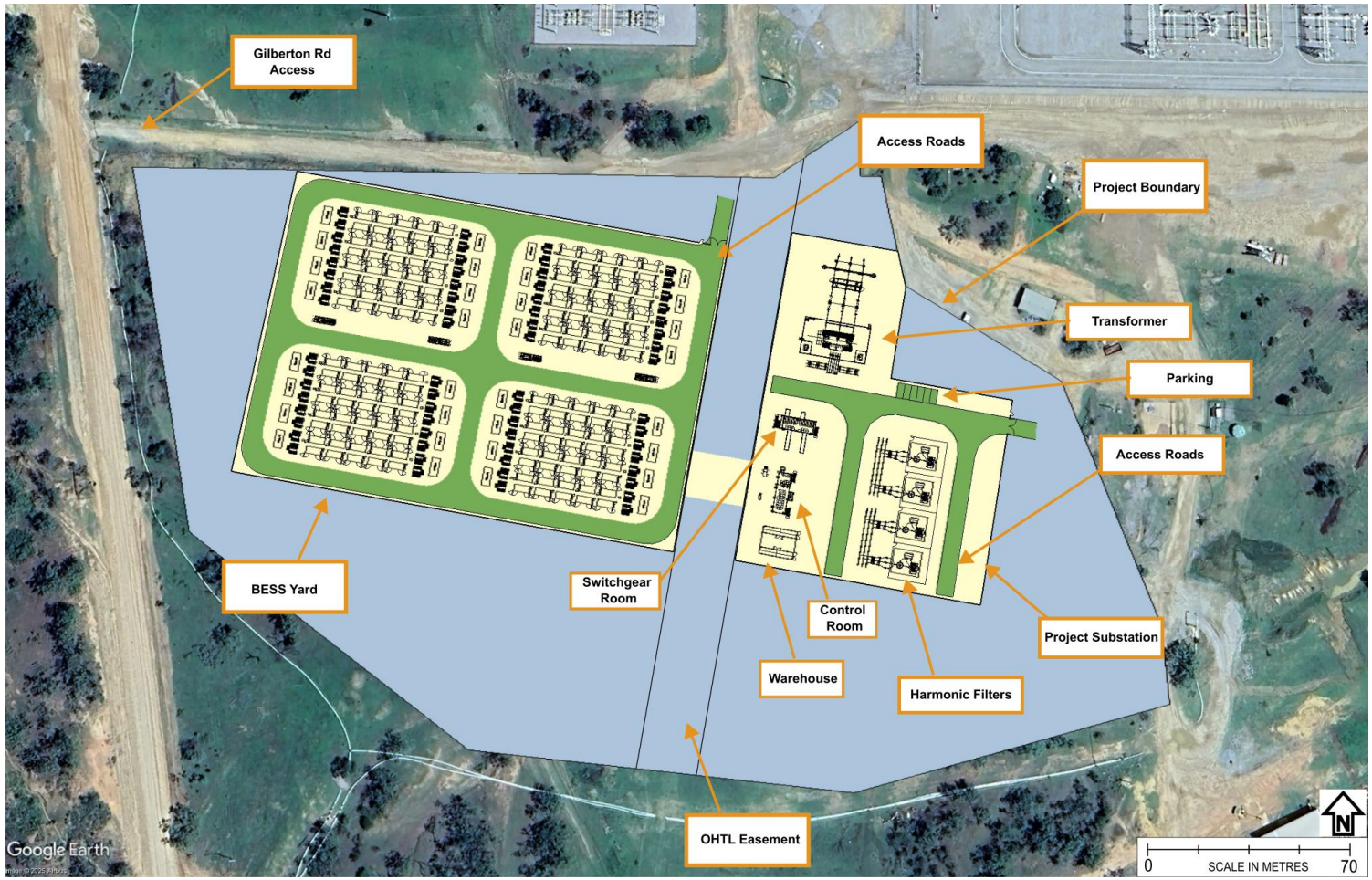


Figure 3: Kidston BESS Site Layout

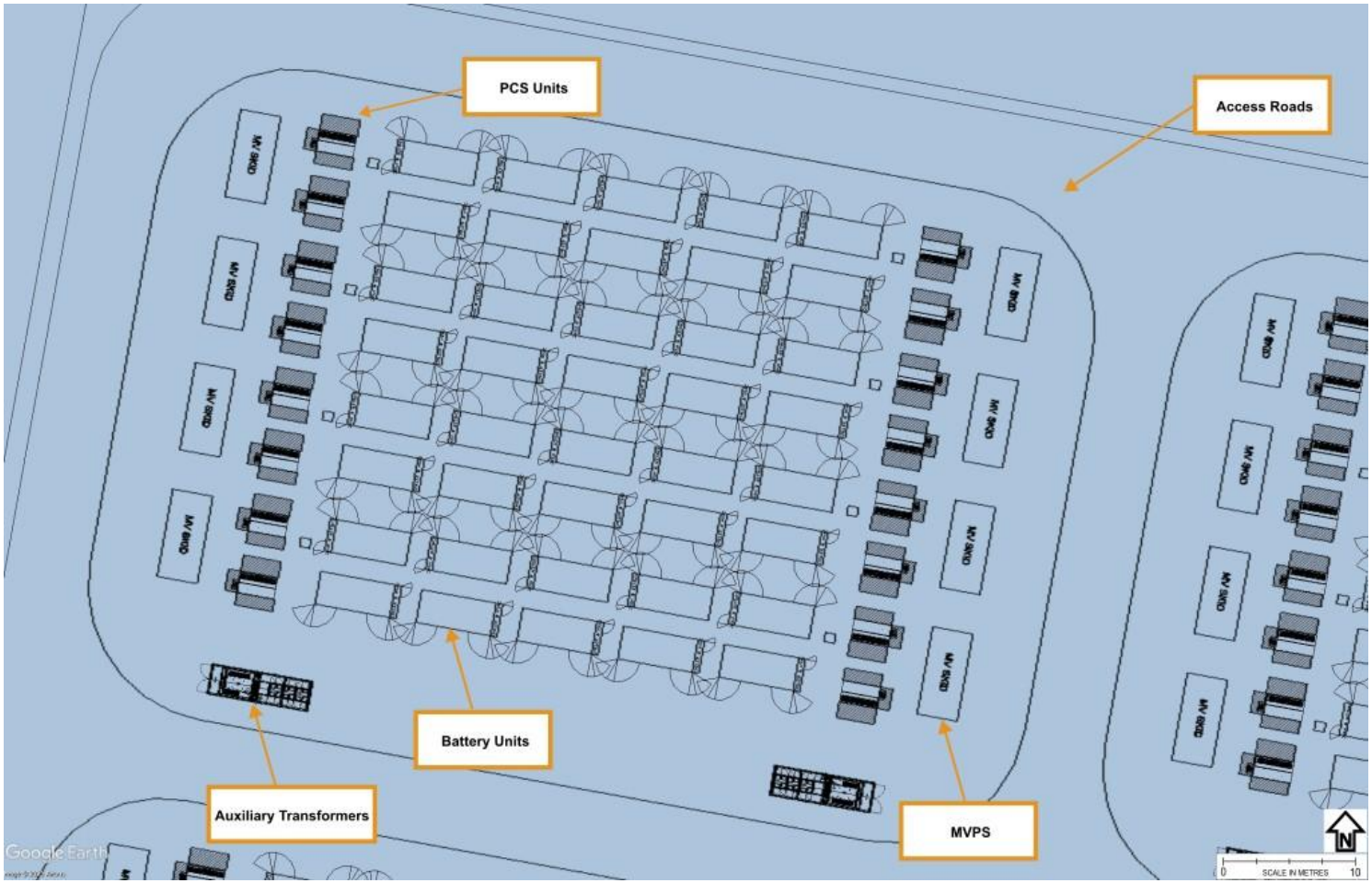


Figure 4: BESS Yard Layout

6 LIMITATIONS AND ASSUMPTIONS

As the Project is in the preliminary design stage, limitations and assumptions were identified and applied to the analysis, as follows.

6.1 LIMITATIONS

This FSS is a preliminary assessment prepared to support the Project at an early design stage and does not constitute a final or detailed FSS. It has been developed in the absence of detailed design information, including confirmed equipment selection and fire system design details. A comprehensive assessment will be undertaken as part of the Detailed FSS, to be conducted after the Project's detailed design stage.

The findings of this FSS are based on the references available at the time of assessment. Any updates to the battery technology, industry guidance, codes, and standards may necessitate a reassessment.

6.2 ASSUMPTIONS

To support hazard identification where specific equipment details were not yet available, technical and operational assumptions were made regarding equipment selection. The findings and conclusions of this FSS are based on preliminary information and these assumptions and are therefore subject to change as the Project design progresses and pending information becomes available. These assumptions are consistent with those made in the risk management assessment report (RMAR) [17] and are detailed in the following sections.

6.2.1 BESS Technology Selection

Lithium-ion battery chemistry (i.e. lithium iron phosphate (LFP)) has been assumed as the representative technology for assessing utility-scale BESS, as lithium-ion systems are the most common battery technology for grid-scale applications.

Consequence modelling for battery units was conducted using large-scale fire testing (LSFT) data provided for the standard version of the *Grid Stack Pro 5000 V1E AESC 530Ah* [18] ("GSP5000") supplied by Fluence, an LFP battery assumed to be similar in properties and construction to the one proposed for the Project site. This assumption acknowledges that LFP battery units from different manufacturers, as well as batteries based on different chemistries, may exhibit materially different fire behaviour, gas generation rates, and propagation characteristics.

It is assumed that the Project design will be in line with recognised industry best practice, including relevant AS and NFPA codes, incorporating industry-standard fire safety controls typically applicable to utility-scale BESS, listed in Table 3. These inherent controls are considered applicable to Fluence's standard GSP5000 and will be included with the battery units supplied by the original equipment manufacturer.

Table 3: Assumed BESS Controls

Assumed Control / System	Description
Battery management system (BMS)	Each battery system unit will include an integrated BMS providing real-time fault detection, cell and module-level monitoring, and automatic isolation or shutdown under abnormal conditions.
Thermal management system	The battery units will include liquid cooling and heating systems, integrated with the BMS, to maintain cells within prescribed operating temperature limits.
Air cooling system	Air cooling systems within the battery units will be used for auxiliary electrical components and to control the humidity within the battery units.
Energy management system	An energy management system will be implemented to optimise charging and discharging cycles, monitor system performance, and manage integration with other energy resources to support network stability.
Fire and gas detection	Smoke, heat, and flammable gas detection systems with alarms and automated or manual response will be provided within battery units, as per NFPA 855 guidance.
Explosion prevention	A container ventilation system will be implemented to maintain flammable gas concentrations below the lower explosive limit (LEL), in accordance with NFPA 855 and NFPA 69.
Explosion protection	Explosion protection will be provided in the form of deflagration panels in accordance with NFPA 68.
Ingress Protection	The battery units will be provided with an ingress protection (IP) rating appropriate to the site conditions. Fluence's standard GSP5000 is rated to IP55.

6.2.2 Project Substation Transformer Technology Selection

The Project Substation transformer will be an outdoor, oil-immersed power transformer, placed within a bund. The insulating and cooling fluid is assumed to be conventional mineral oil, which is generally combustible.

6.2.3 General Electrical Equipment

All cabling for the MVPS and PCS units will be designed in accordance with relevant Australian and international standards and manufacturer specifications, for example, *IEC 62930- Electric cables for photovoltaic systems with a voltage rating of 1,5 kV DC* and *AS/NZS 3000 – Electrical installations (Wiring Rules)* [19].

7 HAZARD IDENTIFICATION

7.1 OVERVIEW

The basis for the Preliminary FSS hazard identification was the RMAR prepared for the Project [17]. The FSS focuses on those Project hazards that have the potential to result in fire, explosion and/or toxic consequences, and therefore require consideration to develop the fire safety strategy.

The RMAR identified 29 potential hazards for the Project, which are provided in Appendix A. Of these hazards, 21 were found to have fire, explosion and/or toxic release consequences relevant to this study. The hazard identification process identifies the following:

- Hazardous equipment and materials and hazards associated with each
- Consequences arising from each identified hazard (e.g. the resulting fire, explosion and toxic consequences)
- Potential scenarios that are carried forward into the analysis.

7.2 HAZARDOUS EQUIPMENT AND MATERIALS

The following hazardous equipment and materials were identified for the Project:

- Lithium-ion battery units
- Project Substation transformer
- Minor quantities of DG in storage
- Spare battery modules in storage
- General electrical equipment (e.g. PCS units, MVPS, auxiliary transformers).

Lithium-ion Battery Units
A single-cell energetic failure within the battery unit can initiate thermal runaway, a self-accelerating degradation process in which heat, pressure and internal reactions rapidly escalate. This process does not require external oxygen and is difficult to stop once initiated. Thermal runaway produces flammable and toxic gases from the electrolyte's decomposition. The materials generated and the rate of generation are dependent on the battery technology. Thermal runaway can then lead to a toxic plume, fire and/or explosion.

Project Substation Transformer
Details on the transformer are not known at this stage of the Project. However, this assessment has been conducted on the basis that the transformer is oil-immersed and the oil is combustible, which poses an explosion and fire risk.

Minor Quantities of DG in Storage
Small quantities of DG, including flammable or combustible liquids (e.g. solvents) may be stored at the Project warehouse for operational or maintenance purposes. The ignition of DG can lead to fires in the warehouse.

Spare Battery Modules in Storage
Spare battery modules may be stored at the Project warehouse for operational or maintenance purposes. Thermal runaway may be initiated within the battery modules, leading to a fire or the release of a toxic plume.

General Electrical Equipment
The Project infrastructure includes a range of electrical equipment, such as PCS units (which contain inverters), MVPS (which contain ring main units and step-up transformers), and auxiliary transformers, which pose a fire risk (e.g. due to electrical failure, mechanical damage, or overheating).

7.3 CONSEQUENCE TYPES

Based on the hazardous equipment and materials, the following consequence types were identified:

- Thermal runaway in battery units and spare battery modules leading to:
  - Fire
  - Toxic plume release
  - Explosion
- Pool fire (from transformer oil or minor quantities of DG in storage)
- Transformer explosion
- Electrical fire.

Descriptions and typical conditions for each event type follow.

Thermal Runaway - Fire
Flammable gases such as hydrogen, methane and ethylene may be generated in thermal runaway events. Following the ignition of these gases, a sustained battery fire could persist for an extended period. This fire would have localised heat radiation impacts on personnel and nearby infrastructure and would produce toxic combustion products.

Thermal Runaway – Toxic Plume
Toxic vapours generated in lithium-ion thermal runaway events typically include hydrogen fluoride (HF) and hydrogen cyanide (HCN). These chemicals are highly toxic and will disperse in the air, presenting a risk to the health and safety of exposed individuals.

Thermal Runaway - Explosion
Flammable gases generated in thermal runaway also present an explosion risk. There is potential for these gases to accumulate within the battery units, which, upon ignition, could lead to an explosion and subsequent overpressure if all explosion controls failed. This presents the potential for injury or fatality, and asset damage.

In contrast, spare battery modules in the storage area (i.e. not within a battery unit) are not expected to provide sufficient confinement for gas accumulation and do not present a credible explosion hazard.

Pool Fire
A pool fire is a turbulent diffusion flame burning above a horizontal pool of vaporising liquid with little or no momentum. Pool fires have the potential to cause significant injuries and/or fatalities to exposed personnel and to cause significant damage to equipment, including catastrophic failure, with extended exposure.

Transformer Explosion
Oil-immersed transformers contain combustible mineral insulating oil. A transformer explosion can occur due to various mechanisms, including overheating, high-voltage surges, and mechanical fatigue, leading to the vaporisation of transformer oil. An explosive mixture may be formed between vapourised transformer oil and air in the transformer oil tank. On ignition of this mixture, the explosion can destroy the transformer, producing a blast wave with the potential generation of projectiles that may be cast over considerable distances. Personnel injuries and damage to the surroundings can arise from the blast pressure, fragments, and thermal effects. The blast effects generally cause damage in the immediate vicinity of the enclosure.

Electrical Fire
Electrical fires resulting from faults in general electrical equipment may spread to combustible insulation materials, such as plastics. These fires are typically localised but can contribute to smoke generation, toxic combustion products, and damage to critical electrical systems.

7.4 POTENTIAL SCENARIOS

The relevant hazards and consequences for the following equipment and materials were considered in the development of potential scenarios:

- Lithium-Ion battery units
- Project Substation transformer
- Minor quantities of DG in storage
- Spare battery modules in storage
- General electrical equipment (e.g. PCS units, MVPS, auxiliary transformers).

7.4.1 Battery Units

Thermal runaway is required for a hazardous scenario to occur in cells within the battery units. Guidance published by the Australian Energy Council [20] and a technical report prepared by the Fire Protection Research Foundation [21] describe the four general causes of energetic battery failure, summarised in Table 4.

Table 4: Thermal Runaway Causes

Failure Mechanism	Description
Thermal abuse	Thermal abuse (exposure to high temperatures) can occur either through long-term storage of cells at temperatures above the design limit or through acute exposure to high temperatures (e.g. fire). Operating at low temperatures can also degrade the battery cell chemistry and cause faults.
Electrical abuse	Electrical abuse refers to voltage/current overcharging, undercharging, or high-rate charging, and exposure to electrical faults, such as short circuits (e.g. high-rate discharging).
Mechanical abuse	Physical damage to battery units from vehicle impacts, dropped objects, etc., can cause mechanical damage and short circuits.
Design flaws / manufacturing defects	Manufacturing defects can cause electrode deformation or other internal faults, leading to thermal runaway events after cycling the battery.
Chemical hazards (electrolyte and coolant release)	Internal leakage of electrolyte or coolant (due to physical damage, elevated temperatures, or cell degradation) can lead to electrical short-circuiting and self-heating, initiating thermal runaway. External electrolyte or coolant leaks may disrupt thermal management systems, leading to elevated cell temperatures and an increased likelihood of thermal runaway.

Based on thermal runaway consequence modelling conducted by Gexcon [22], fires typically start in one or several modules before propagating to other modules within battery units, and it is unlikely that all modules in a rack will undergo thermal runaway simultaneously. Fire testing data for Fluence's standard GSP5000 at the unit level [23] showed that thermal runaway initiated in one battery cell propagated to only one other adjacent cell. The module-level test [24] showed that propagation of thermal runaway from one module to another was strictly not observed. It is therefore unlikely that a fire will propagate from a module level to an entire battery unit. This behaviour is mainly due to the inherent design of the battery unit, which includes the separation of modules within it.

However, the latest published guidance [6] considers a battery unit on fire as a credible scenario against which fire safety response should be assessed. On this basis, fire system strategies and emergency response considerations were developed in reference to a fire/toxic release scenario involving a full battery unit. As this represents the larger, bounding case, the fire system strategies and emergency response measures would also apply to smaller-scale fire events involving individual modules or racks within a battery unit.

7.4.1.1 Fire

Fire scenarios associated with battery units can be initiated by thermal runaway within cells, followed by the release and ignition of flammable gases.

Thermal runaway within a module may lead to a module fire, which can escalate to involve an entire battery unit. An entire battery unit on fire was considered as the credible fire scenario for which consequence modelling was conducted. The LSFT data for Fluence's standard GSP5000 [18] served as the basis for fire modelling.

7.4.1.2 Toxic Plume Release

Toxic plume release scenarios involve the dispersion of toxic gases, such as HF and HCN, from the battery unit vents following thermal runaway and fire.

Thermal runaway within a module may lead to a module fire, which can escalate to involve an entire battery unit. An entire battery unit on fire was considered the representative scenario for the generation of toxic vapours. The LSFT data served as the basis for the toxic vapour release data used in the consequence modelling.

7.4.1.3 Explosion

Explosion scenarios associated with battery units arise from the release and confinement of flammable gases generated during thermal runaway, which are then ignited. Thermal runaway can generate significant quantities of flammable gases, which, if allowed to accumulate within the battery unit (i.e. due to ineffective venting), may form a flammable atmosphere. Ignition of the flammable gas cloud may then result in an internal vapour explosion.

An internal vapour explosion was included to inform potential overpressure impacts for emergency response planning. The LSFT data served as the basis for identifying flammable gases within the battery unit. Consequence modelling was conducted, excluding the effectiveness of explosion prevention and mitigation controls, such as ventilation and deflagration panels.

7.4.2 Project Substation Transformer

Transformer fire and explosion scenarios were identified for the Project Substation transformer. These were based on the assumptions for the Project Substation transformer outlined in Section 6.2.2.

7.4.2.1 Transformer Fire

A transformer oil tank rupture may occur due to a mechanical failure or following a transformer explosion. This event can cause oil to be released into the bunded area surrounding the transformer, leading to a pool fire if ignited. In representing this fire scenario, all spilt oil was assumed to remain pooled within the transformer bund (i.e. not expected to drain or extend beyond the bund confinements). Therefore, the scenario was represented as a contained pool fire within the transformer bund.

7.4.2.2 Transformer Explosion

Overheating, high-voltage surges, and mechanical fatigue can cause the vaporisation of transformer oil, forming an explosive mixture of vaporised oil and air in the transformer oil tank. On ignition, this mixture can explode. The explosion is a short-duration event, hence it is not the focus in assessing the adequacy of the fire suppression systems. The Project Substation is located away from the BESS Yard, so the immediate blast effects of a transformer explosion do not pose an escalation risk to the battery units. A transformer explosion was therefore not modelled.

7.4.3 Minor Quantities of DG in Storage

Small quantities of dangerous goods, including flammable or combustible liquids (e.g. solvents), may be stored at the warehouse for operational or maintenance purposes. These are assumed to be minor quantities only. Provided the appropriate storage and handling guidelines are followed (e.g. those detailed in Section 2.3 of AS 1940), these will not present a significant fire risk; and were therefore not assessed further.

7.4.4 Spare Battery Modules in Storage

Battery modules are expected to be stored within the Project site warehouse. These may comprise spare modules for maintenance activities. Although these modules are not connected to an electrical power source, they may contain stored chemical energy and present a fire hazard under certain conditions.

Thermal runaway can occur within spare modules due to various reasons, including:

- Internal manufacturing defects
- Mechanical damage
- Internal short circuits.

On this basis, a thermal runaway event involving up to two modules leading to a fire was considered a credible fire scenario in the warehouse. However, consequences from module-only fires will be localised to the immediate area where they occur. As detailed in venting tests conducted on LFP battery cells [25], these events will be of limited duration and pose no potential for escalation to battery units in the BESS Yard given the separation distance. Therefore, consequence modelling was not conducted for this scenario, and fire system strategies were identified qualitatively.

7.4.5 Electrical System

The Project infrastructure includes a range of general electrical equipment, including PCS units (which contain inverters), MVPS (which contain ring main units and step-up transformers), and auxiliary transformers. Fire scenarios in this equipment may result from electrical failures, mechanical damage, or overheating.

General electrical equipment fires are relatively slow to grow and shorter in duration than battery unit fires, as they are limited by the combustible materials available within the unit (i.e, internal plastics and insulation) and do not contain residual chemical energy for self-propagation. Battery-to-battery unit fire propagation was not observed in the LSFT. Given the greater separation of PCS units, MVPS, and auxiliary transformers relative to battery units (as per the site layout) and the shorter duration of fires from this equipment, fire propagation to a battery unit is not expected. Therefore, these fires were not considered further in the analysis.

PCS unit, MVPS and auxiliary transformer fires, like other general electrical equipment fires at the Project site, would be addressed through system design and adequate separation, in accordance with *AS/NZS 3000* [10] and other relevant Australian Standards.

Toxic vapours from burning plastics and insulation were also not assessed separately, as their hazards were considered to be covered by the toxic release from a battery unit fire, which is expected to exhibit a more severe toxicity profile.

7.5 EXTERNAL HAZARDS

7.5.1 Neighbouring Facilities

There are no neighbouring hazardous facilities located near the Project area except for other Clean Energy Hub projects, with the Aurumfield Substation being the closest. The Aurumfield Substation primarily comprises electrical switchgear, and the surrounding area is cleared of vegetation. Therefore, fires arising from adjacent facilities were determined not to pose a credible threat of escalation to the Project infrastructure.

7.5.2 High Voltage Powerline

An electrical arcing or flashover event on the existing Kidston Solar Project high voltage (HV) (132 kV) OHTL, which traverses the Project area, could initiate a localised fire. The quantity of combustible material would limit any potential fire in the immediate area, which is largely cleared of vegetation, in alignment with the asset protection zone (APZ) requirements established in the Bushfire Management Plan (BMP). Accordingly, no impacts to the battery units were identified. The management of such a fire should be considered in emergency response planning.

The OHTL is supported by a concrete pole (>20 m high), located in an easement provided at the Project site. A structural failure of the concrete pole or sagging of the conductors may be caused by ageing or faulty equipment, or vehicle impact. In such a scenario, a conductor could fall onto the project infrastructure, including battery units. If battery units or nearby infrastructure are affected by a falling HV cable, this could damage a unit and trigger a thermal runaway. The consequences of any resulting battery fire or explosion are represented by the battery unit scenarios listed in Section 7.4.1, and have therefore not been assessed separately.

7.5.3 Natural Hazards (Excluding Bushfires)

Risks to the Project from natural hazards, such as high and low ambient temperatures, lightning strikes, flooding, cyclones, storms and earthquakes are discussed in the RMAR [17], based on local site conditions and the Project layout considerations provided in the Natural Hazards Risk Assessment [26]. These natural hazards could affect the BESS, leading to thermal runaway and a battery unit fire or explosion. The consequences of these events are represented by the battery unit scenarios listed in Section 7.4.1, and have therefore not been assessed separately.

Bushfire risk is to be individually assessed within an FSS, in line with PO No. 5 of State Code 27. Accordingly, bushfires are discussed in the following section.

7.5.4 Bushfires

The Project is to be located within areas mapped as Potential Impact Buffer and adjacent to Medium Potential Bushfire Intensity land [27]. The Potential Impact Buffer represents land within 100 metres of vegetation mapped as capable of supporting a significant bushfire, where bushfire impacts such as ember attack, radiant heat, or flame contact may occur even if the fire front does not pass directly through the site. Medium Potential Bushfire Intensity areas are defined under the State Planning Policy mapping as areas capable of supporting a significant bushfire [28].

A bushfire represents an external fire hazard that may impact site infrastructure through direct flame contact, radiant heat, or ember attack. Bushfires may be initiated by natural causes, such as lightning, or by human activities. Bushfire exposure may lead to ignition of combustible materials, damage to above-ground electrical equipment, impairment of fire protection systems, and restricted site access for emergency response.

A bushfire scenario was considered for the Project site, where a fire may originate in forested vegetation along the western boundary, resulting in high radiant heat exposure to a battery unit, initiating cell thermal runaway and potentially escalating to the entire unit. Bushland along the Project site's western boundary was selected because it has a larger expanse of bush than the other boundaries and is located closest to the BESS Yard.

Bushfire risk and potential escalation pathways were considered qualitatively through site layout, separation distances, vegetation management, and emergency response planning, in line with applicable Australian guidance and industry practice, and no consequence modelling was conducted.

7.6 REPRESENTATIVE SCENARIOS

Following a review of potential scenarios and associated escalations for BESS installations, a series of representative scenarios were selected to inform the determination of fire system performance requirements and emergency response planning. These scenarios are presented in Table 5 along with their potential consequences, prevention and mitigation controls.

Table 5: Representative Scenarios

Scenario ID	Scenario	Scenario Description	Consequence	Prevention and Mitigation Controls
1a	Battery unit – fire	Battery unit fire following thermal runaway	Radiant heat impacts, including potential for injury or fatality, fire escalation resulting in extended fire duration and asset damage, and further toxic plume generation.	• Preventative maintenance • Site layout and separation • Battery, thermal and energy management systems • Gas, heat, fire and smoke detection systems • Electrical isolation • In-unit fire suppression • Firewater system • Emergency response
1b	Battery unit – toxic plume dispersion	Toxic plume release following thermal runaway	Toxic chemical release impacts, including potential for injury and fatality in cases of extreme exposure.	• Preventative maintenance • Site layout and separation • Battery, thermal and energy management systems • Gas, heat, fire and smoke detection systems • Electrical isolation • In-unit fire suppression • Firewater system • Emergency response
1c	Battery unit – explosion	Battery unit internal explosion following thermal runaway and buildup of flammable vapour within the unit	Overpressure impacts, including potential for injury or fatality, and damage to assets.	• Preventative maintenance • Site layout and separation • Battery, thermal and energy management systems • Ventilation systems • Gas, heat, fire and smoke detection systems • Electrical isolation • Deflagration panels • Firewater system • Emergency response

Scenario ID	Scenario	Scenario Description	Consequence	Prevention and Mitigation Controls
2a	Project Substation transformer - fire	Transformer oil pool fire within the transformer bund	Radiant heat impacts, including potential for injury or fatality, as well as fire escalation (e.g. to battery units), resulting in extended fire duration and asset damage.	• Preventative maintenance • Site layout and separation • Firewater system • Emergency response
2b	Project Substation transformer - explosion	Transformer explosion	Overpressure impacts, including potential for injury or fatality, and damage to assets.	• Preventative maintenance • Site layout and separation • Emergency response
3	Spare battery modules fire	Fire in the spare battery modules in the warehouse	Radiant heat impacts, including potential for injury and toxic plume generation.	• Preventative maintenance • Site layout and separation • Fire and smoke detection systems • Emergency response
4	Bushfire	Bushfire in the forested vegetation along the western boundary of the Project site	Radiant heat impacts, including potential for injury or fatality, as well as fire escalation (e.g. to battery units) resulting in extended fire duration and asset damage.	• APZs • Emergency response

8 CONSEQUENCE ANALYSIS

8.1 INTRODUCTION

Consequence analysis was undertaken to assess the impacts of the following scenarios:

- Scenario 1a: Battery unit – fire
- Scenario 1b: Battery unit – toxic plume dispersion
- Scenario 1c: Battery unit – explosion
- Scenario 2a: Project Substation transformer – fire.

8.2 MODELLING METHODOLOGY

Consequence analysis for battery unit scenarios (Scenarios 1a – 1c) was conducted using fire test data for Fluence's standard GSP5000 [18] battery unit, assumed to be the representative battery technology for the Project.

NFPA 855:2026 requires fire testing in accordance with UL 9540A to assess fire propagation and flammable/toxic gas evolution within the battery units, and LSFT by an approved testing laboratory to show that a fire involving an entire battery unit will not propagate to an adjacent unit. Cell, module and unit-level testing for Fluence's standard GSP5000 was conducted in accordance with the 5th Edition of UL 9540A [8], while LSFT was conducted in accordance with CSA/ANSI C800 [29]. Further details on the LSFT are provided in Appendix B.

The modelling methodology for each scenario is outlined in the following sections.

8.3 BATTERY UNIT – FIRE

8.3.1 Model Description

Heat flux modelling was undertaken for a battery unit on fire. The LSFT data was used to build and calibrate an empirical fire model that represents a battery unit on fire. The LSFT was carried out under still-air conditions (i.e. 0 m/s wind), and the fire model was first calibrated to match these conditions.

Following calibration, site-specific wind conditions were applied to the model to reflect flame tilt and better represent on-site fire behaviour. The updated model was then used to determine the distances at which key heat flux criteria are reached, including the effects of heat radiation on personnel and emergency responders, and the minimum separation distances between battery units to prevent fire spread.

The details of this fire model and the determination of the propagation criterion for defining separation distances are provided in Appendix B.

The following factors were defined for the modelling:

- Weather conditions
- Impact criteria.

8.3.2 Weather Conditions

Weather data was used in line with the data provided in Section 8.4.2. The higher daytime wind speed was adopted for the empirical fire model, as increasing the wind speed increases the tilt of the flame in the downwind direction. In general, this increases the heat received by downwind observers. The flame may be subjected to extreme tilt for high wind speeds. The effects of this are to:

- Increase the heat received in the near field due to the wind tilting the flame closer to the ground
- Reduce the heat received further from the flame, as the view factor further downwind is reduced due to the extreme tilt.

8.3.3 Impact Criteria

The empirical fire model detailed in Appendix B was created using LSFT flame data obtained from heat flux gauges installed at the top of the battery unit container. Therefore, the heat radiation effects were evaluated at an observer height equal to the container height, i.e. level with the flame base.

To assess the impact of radiant heat from a battery unit fire on personnel, heat-flux criteria were defined and are presented in Table 6, along with their associated effects. An additional criterion was adopted to assess the potential for fire propagation to adjacent battery units, which considers the heat flux at which the structural integrity of a battery unit container will be compromised. The heat flux criterion was determined as 60 kW/m² (sustained for at least 20-30 minutes). Details on the development of this criterion are provided in Appendix B.

Table 6: Heat Flux Effects [30, 31]

Heat Radiation	Effect
3 kW/m^2	This criterion aligns with the emergency services requirement for personnel exposure while operating fire monitors for up to 10 min.
12.6 kW/m^2	Significant chance of fatality for extended exposure. High chance of injury. After extended exposure, the wood's temperature can rise to a point where a naked flame can readily ignite it. Thin steel with insulation on the side away from the fire may reach a thermal stress level high enough to cause structural failure.
23 kW/m^2	Likely fatality for extended exposure and chance of fatality for instantaneous exposure. Spontaneous ignition of wood after long exposure. Unprotected steel will reach thermal stress temperatures, which can cause failure. Pressure vessels need to be relieved or failure will occur.
60 kW/m^2	The structural integrity of a battery unit container will be compromised by this heat flux when sustained for at least 20-30 minutes. This criterion was defined as the threshold at which propagation may occur in a battery unit adjacent to a battery unit on fire. This criterion applies only to the battery unit fire scenario.

8.4 BATTERY UNIT – TOXIC PLUME DISPERSION

In the event of a battery unit fire, there is a potential for toxic gas to be generated from the decomposition of the battery electrolyte and from combustion products. Toxic dispersion modelling was conducted using the software program DNV Phast [32]. The following were defined for this modelling:

- Model parameters
- Weather conditions
- Impact criteria.

8.4.1 Model Parameters

The key parameters for toxic vapour dispersion modelling from a battery unit are:

- Materials generated
- Rate of generation
- Release conditions
- Release point characteristics (height, orientation).

8.4.1.1 Materials Generated

The following combustion products were generated in the LSFT conducted on Fluence's standard GSP5000:

- Hydrocarbons (e.g. methane, ethane, ethylene)
- Hydrogen (H_2)
- Carbon monoxide (CO)
- Carbon dioxide (CO_2)
- Nitrogen monoxide (NO)
- HF
- HCN.

From these, HF, CO, and CO_2 were the focus of the toxic vapour dispersion testing due to their high toxicity at low concentrations (HF) and high-volume releases (CO and CO_2). HCN is present at lower concentrations than HF, while NO occurs at similar concentrations but is materially less toxic; therefore, HF was adopted as the representative material for modelling.

8.4.1.2 Rate of Generation

Gas generation rates were taken from hourly experimental data provided in the LSFT. Three gases were modelled: CO, CO_2, and HF. For each gas, the hourly mixture exhibiting the highest volumetric generation of that gas was selected. The corresponding mixture flow rates were adopted as model inputs, with the equivalent gas volume fractions and flow rates summarised in Table 7.

Table 7: Gas Generation data from LSFT Data

Gas	Gas Mixture	Basis for Selection	Mixture Flow Rate (g/s)	Gas Volume Fraction (%)	Gas Equivalent Flow Rate (g/s)
CO	Mixture 1	Highest CO volume	40	2.3	0.92
CO_2	Mixture 2	Highest CO_2 volume	48	97.6	46
HF	Mixture 3	Highest HF volume	16	0.8	0.12

8.4.1.3 Release Conditions

In the LSFT, the temperature range of 300°C to 500°C was established based on thermocouples installed at the top of the battery unit container, which represents the location where gases are vented and therefore most closely reflects the temperature of released gases. A release temperature of 300°C was selected for the modelling, as this results in greater ground-level impacts. At higher temperatures, the increased buoyancy results in greater plume rise and limited ground-level impacts.

8.4.1.4 Release Point Characteristics

A vertical release orientation was adopted to reflect plume rise from the battery vents (which are located at the top of the battery unit enclosure). The release height was set at 1.5 m.

8.4.2 Weather Conditions

Vapour dispersion is influenced by the prevailing atmospheric conditions, the most influential of which are wind speed and atmospheric stability class. The atmospheric stability class depends on the wind speed and sunlight/cloud cover. Stability class "D" is the most stable condition typically experienced during daytime and has been selected to represent average daytime conditions. Stability class "F" is the most stable night-time condition, where wind speeds are lower (≤3 m/s) and was used to represent night-time conditions. A representative wind speed of 1.5 m/s was applied to Stability class "F".

The weather conditions used in the analysis were based on meteorological data associated with the Georgetown Airport weather station close to the Project site. The weather conditions selected represent the 75th percentile value for wind speed for Stability class "D", which accounts for the most likely wind

conditions to occur. The average temperature and humidity values were selected for the location. These are summarised in Table 8.

A surface roughness of 10 cm was assigned, considering the topography of the surrounding area. This is representative of an area with low crops and occasional large obstacles.

Table 8: Weather Conditions

Parameter	Average Day-time Conditions	Night-time Conditions
Atmospheric Stability	D	F
Wind Speed (m/s)	3.6	1.5
Temperature (°C)	25.5	25.5
Relative Humidity (%)	59	59
Surface Roughness Length (cm)	10 (low crops, occasional large obstacles)	

8.4.3 Impact Criteria

The impact criteria used for the toxic vapour dispersion are detailed in Table 9 and defined below. An observer height of 2 m was used to represent exposure conditions for a person on the ground.

- Acute Exposure Guideline Level 1 (AEGL-1)
  The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic non-sensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure [33].

- Acute Exposure Guideline Level 3 (AEGL-3)
  The airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, may experience life-threatening health effects or death [33].

- "Short term exposure limit" (STEL):
  15 minute time-weighted average exposure limit which must not be exceeded at any time during an 8-hour working day [34].

Acute Exposure Guideline Levels (AEGLs) describe the human health effects from once-in-a-lifetime exposure to airborne chemicals [33]. AEGLs are specified by the United States Environmental Protection Agency to provide threshold exposure limits for the general public. These criteria are commonly used by emergency responders when dealing with chemical spills or other catastrophic exposures.

AEGL-1 has been used in this study to determine the maximum impact distances of toxic plumes to assess the potential for off-site impacts, whereas AEGL-3 has been chosen for emergency response planning, and represents the onset of life-threatening health effects or death.

AEGL values are not available for CO_2. The primary hazard associated with CO_2 arises at elevated concentrations, where the potential for oxygen displacement predominates over acute toxic effects. In the absence of AEGL data, the impact criterion adopted for CO_2 was STEL, which provides an accepted guideline for short-duration exposure limits.

Table 9: AEGL and STEL Criteria [35,36,34]

Material	Criteria	15 min	60 min
HF	AEGL-1 (ppm)	-	1
	AEGL-3 (ppm)	-	44
CO	AEGL-1 (ppm)	-	NC*
	AEGL-3 (ppm)	-	330
CO_2	STEL (ppm)	30,000	-

*NC = No criteria

8.5 BATTERY UNIT – EXPLOSION

The battery unit explosion was modelled using the multi-energy method model [37] within DNV Phast [32]. The explosion energy is estimated based on the volume of the explosive mixture contained within the equipment. Distances to overpressures are then evaluated from the multi-energy blast curves. The curve for "blast strength" 7 was used to represent the strong blast typically associated with an internal explosion.

The explosion modelling adopted a conservative approach, in which the effectiveness of explosion prevention and protection controls, such as ventilation and deflagration panels, was ignored.

The following were defined for the scenario:

- Model parameters
- Impact criteria.

8.5.1 Model Parameters

The key model parameters for an internal explosion are:

- Material
- Volume.

8.5.1.1 Material

Gas release data from the module-level fire test for Fluence's standard GSP5000 [24] was used to define the flammable material inventory within the battery unit that could accumulate and ignite. The gas composition recorded before flaming was selected because it represents the condition with the highest hydrocarbon concentration and is presented in Table 10.

Table 10: Pre-flame Mixture of Vented Gas

Material	Mole Fraction in Mixture (%)
CO	0.06
CO_2	0.18
H_2	0.27
Total hydrocarbons (propane equivalent)	0.49

8.5.1.2 Volume

The explosive mixture volume was based on the free volume of a battery unit (i.e. the space available for gas accumulation). This space was based on dimensions provided in the LSFT, and an adjustment was made for "air gaps" between rack trays and modules. The adjustment essentially doubled the free space, based on a conservative estimate. This data is summarised in Table 11.

Table 11: Enclosure Volumes

Parameter	Estimated Volume (m^3)
Total enclosure volume	42.4
Battery racks volume	37
Free volume	5.4
Adjustment for “air gaps” in rack trays	5.4
Total volume for modelling	10.8

8.5.2 Impact Criteria

The overpressure impact criteria are shown in Table 12, along with associated effects. An observer height of 1 m was assigned to this scenario.

Table 12: Overpressure Impact Criteria [38]

Overpressure (kPa)	Effect
7	Damage to internal partitions and joinery but can be repaired. Probability of injury is 10%. No fatality.
21	Reinforced structures distort. Storage tanks fail. 20% chance of fatality to a person in a building.
35	Buildings uninhabitable. Plant items overturned. Threshold of eardrum damage. 50% chance of fatality for a person in a building and 15% chance of a fatality for a person in the open.
70	Threshold of lung damage. 100% chance of fatality for a person in a building or in the open. Complete demolition of houses and similar structures.

8.6 PROJECT SUBSTATION TRANSFORMER FIRE

The Project Substation transformer fire scenario was represented as a contained pool fire within the transformer bund. In modelling the pool fire scenario, the following factors were considered:

- Material properties
- Fire dimensions (i.e. pool area)
- Weather conditions, and
- Impact criteria.

8.6.1 Model Description

The impacts of pool fires are estimated using a solid flame model. The flame is represented as a cylinder that is tilted (skewed) under the influence of the wind. To further account for the influence of the wind, the cylinder was extended downwind by a distance defined as the “flame drag”. This is illustrated in Figure 5. The “flame tilt”, “flame height” and “flame drag” are derived from empirical correlations, which depend on the pool diameter, wind speed and the properties of the material modelled.

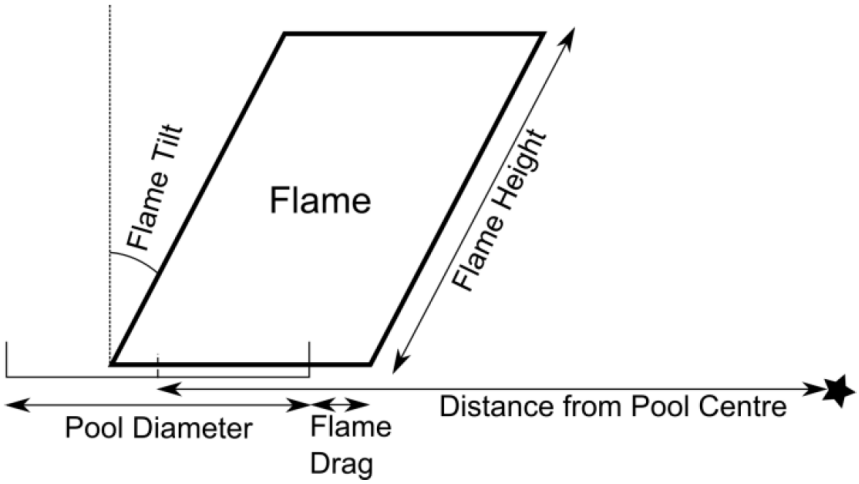


Figure 5: Pool Fire Flame Geometry

The pool diameter used in the modelling depends on whether the release is uncontained or contained. The release of transformer oil is expected to be contained within the bund provided for the transformer. The heat radiation impact distances are measured from the centre of the bunded area, as shown in Figure 6.

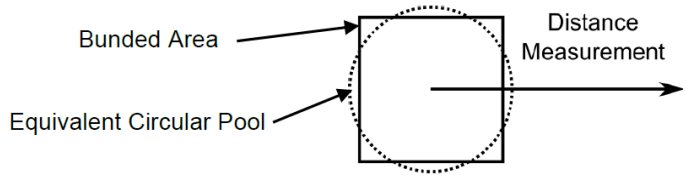


Figure 6: Bund Fire Distance Measurement Geometry

8.6.2 Model Parameters

The key parameters for a contained pool fire are:

- Material
- Fire size

8.6.2.1 Material

The insulating oil used in transformers is typically synthetic mineral oil. For the purposes of fire modelling, a single "smoky hydrocarbon" material with a burning rate of 0.06 kg/m^2/s [39] was chosen to represent the insulating oil.

8.6.2.2 Fire Size

The bund dimensions for the contained transformer oil pool fire were approximated based on the site layout as 25 m long by 13 m wide. In representing this fire scenario, all spilt oil was assumed to remain pooled within the transformer bund (i.e. not drained out of the bund).

8.6.3 Weather Conditions

The key atmospheric parameter for modelling pool fires is wind speed. Weather data for pool fire modelling was used in line with the data provided in Section 8.4.2.

8.6.4 Impact Criteria

The proximity of an observer to the fire directly correlates with the level of injury or fatality sustained from the radiant heat. The heat radiation criteria used for pool fires are per Table 6 in Section 8.3.3. An observer height of 1 m was selected to represent a ground-level observer.

8.7 CONSEQUENCE MODELLING RESULTS

8.7.1 Battery Unit – Fire

The downwind distances to the heat flux criteria are presented in Table 13. The 60 kW/m^2 criterion is used as the basis for determining the separation distance and is discussed further in Section 9.2. Consequence contours for the battery unit fire are presented in Appendix C.

Table 13: Battery Unit Fire Impact Distances

Scenario ID	Material	Weather Conditions	Downwind Distance (m) to Heat Flux Impact Criteria			
			3 kW/m^2	12.6 kW/m^2	23 kW/m^2	60 kW/m^2
1a	Battery unit components	3.6 / D	10	6	5	3.6

8.7.2 Battery Unit – Toxic Plume Dispersion

The downwind distances to the toxic impact criteria are presented in Table 14 and Table 15. Based on these results, the furthest downwind distance at which irritation and discomfort are noted in individuals is 25 m, due to HF during stable daytime weather conditions, extending beyond the site boundary onto the adjacent access road. Potentially life-threatening effects are limited to below 3 m under stable daytime conditions due to HF. Consequence contours for HF toxic plume dispersion are presented in Appendix C.

For CO and CO_2, harmful criteria are either not reached or restricted to below 2 m, indicating limited impact beyond the immediate vicinity from the release of these gases.

Table 14: Toxic Vapour Impact Distances (HF and CO)

Scenario ID	Material	Release Rate (kg/s)	Weather Conditions	Downwind Distance (m) to Toxic Impact Criteria	
				AEGL-1	AEGL-3
1b	HF	0.008	3.6 / D	25	NR*
			1.5 / F	12	< 3
	CO	0.040	3.6 / D	NC*	NR
			1.5 / F	NC	< 2

*NR = Not reached
*NC = No criteria (AEGL-1 values for CO are not defined)

Table 15: Toxic Vapour Impact Distances (CO_2)

Scenario ID	Material	Release Rate (kg/s)	Weather Conditions	Downwind Distance (m) to Toxic Impact Criteria
				STEL
1b	CO_2	0.048	3.6 / D	NR
			1.5 / F	< 2

8.7.3 Battery Unit – Explosion

The distances to the overpressure criteria from the battery unit explosion are presented in Table 16. Consequence contours for the battery unit explosion scenario are presented in Appendix C.

Significant overpressure impacts are limited to the BESS Yard, with the criteria representative of a 10% probability of injury extending beyond the site boundary onto the adjacent access road. Asset damage is limited to neighbouring battery units, with no credible impact to the Project Substation or other site buildings and structures.

Table 16: Explosion Modelling Results

Scenario ID	Material	Confined Volume (m^3)	Distance (m) to Overpressure Criteria			
			7 kPa	21 kPa	35 kPa	70 kPa
1c	A mixture of gases released prior to flaming in the LSFT	10.8	27	11	8	5

8.7.4 Project Substation Transformer Fire

The downwind distances to the heat flux criteria from the transformer pool fire are presented in Table 17. Consequence contours for the fire are presented in Appendix C.

Based on the site layout, there is no credible impact from heat radiation on the surrounding site buildings and structures, such as the switchgear room, control room, harmonic filters, warehouse, and battery units.

Table 17: Pool Fire Impact Distances

Scenario ID	Material	Weather Conditions	Pool Diameter (m)	Downwind Distance (m) to Heat Flux Impact Criteria		
				3 kW/m^2	12.6 kW/m^2	23 kW/m^2
2a	Insulating oil	3.6 / D	20.3	49	30	20

9 FIRE PREVENTION STRATEGIES / MEASURES

Fire prevention strategies are proposed for the Project site to minimise the likelihood of a fire or explosion occurring and the escalation of a fire to other areas. The following fire prevention strategies, were identified and are discussed in the following sections:

- Preventative maintenance
- Site layout and separation
- BMS
- Thermal management system
- Energy management system
- APZs
- Spare battery module storage
- Explosion prevention.

The Project is still in the early design stage. The fire risk management controls in this section have been developed in accordance with industry guidelines and best practices for similar sites using Fluence's standard GSP5000 product. These controls are intended to inform the concept design. They will be validated and refined during detailed design using final product specifications, with final requirements confirmed through the Detailed FSS before construction.

9.1 PREVENTATIVE MAINTENANCE

Preventative maintenance covers the inspection, monitoring, and testing of equipment to prevent deterioration and/or failures that could contribute to the occurrence of identified fire scenarios. The following requirements should be incorporated into the Project's preventative maintenance system.

Fire Safety Requirements

1. *A fit-for-purpose preventative maintenance program should be implemented for the BESS equipment and associated electrical infrastructure to prevent deterioration and/or failures that could contribute to the occurrence of identified fire scenarios. This should include:*

    a. *A documented inspection, testing, and maintenance program for BESS equipment and associated electrical infrastructure to identify degradation, faults, or abnormal conditions that could lead to a fire event.*

    b. *Monitoring of key battery parameters via the BMS (e.g. voltage, temperature, current) and identifying conditions indicative of abnormal operation.*

    c. *Periodic testing and inspection of safety systems, including electrical isolation devices, fire and gas detection, air cooling system, and explosion prevention measures, to ensure correct operation under fault conditions.*

    d. *Inspection and maintenance of the thermal management and energy management systems, to ensure continued effectiveness in maintaining battery unit equipment within their specified operating limits.*

9.2 SITE LAYOUT AND SEPARATION

The Project site layout and equipment separation will be used as escalation-prevention measures to limit the spread of fires between battery units, associated electrical equipment, and site buildings and structures.

9.2.1 BESS Yard

9.2.1.1 Battery Unit Separation Distance Determination

As per NFPA 855, LSFT should be conducted to demonstrate that a fire involving one battery unit will not propagate to an adjacent unit. No fire propagation was observed in the target containers in the LSFT for Fluence's standard GSP5000 conducted under 0 m/s wind speed. However, wind can significantly influence flame shape and direction, increasing heat exposure to adjacent units. Therefore, to ensure that no fire propagation occurs between battery units at the Project site, a fire model with site-specific weather conditions was used to inform the appropriate separation distances between battery units. The details of this fire model and the determination of the propagation criterion for defining separation distances are provided in Appendix B.

Using this fire model, the distance to the 60 kW/m² heat flux criterion was calculated to be 3.6 m. This result, however, should be interpreted in the context of the model calibration relative to the LSFT. The calibration was based on heat flux gauges located at the height of the target units, which record peak incident radiation from the exposed flame. Accordingly, the model predicts the distance at which a point at the upper edge of the target unit receives 60 kW/m².

Structural response, however, is governed by the average heat flux received across the wall height. In practice, heat flux decreases with increasing vertical distance from the flame due to radiative decay, so while the upper wall may approach 60 kW/m², lower sections of the wall will experience lower heat exposure. As a result, applying a point-based criterion at the top of the battery unit container wall (the nearest point to the flame) is considered conservative.

To account for this, supplementary modelling was undertaken to assess the vertical heat flux distribution across the target adjacent unit wall exposed to an elevated flame (with the flame base at the container height). An approximate 75% reduction in heat flux was observed between the top and bottom of the target wall. Accordingly, the average heat flux across the wall height is substantially lower than the 60 kW/m² value predicted at the upper edge, and a reduction in separation distance may be considered.

The supplementary model also showed that a small reduction in the separation to the target wall area slightly increases the heat flux at the top of the unit (as expected), but also produces a corresponding reduction in the heat flux at the lower part of the facing wall. Based on this model, a reduction in the separation distance from 3.6 m to 3 m was considered appropriate. Reducing the separation to 3 m would yield only a marginal increase in the average heat flux across the entire wall height, whilst still limiting the maximum heat flux at the top of the container to slightly above the 60 kW/m² criterion. A reduction in separation to less than 3 m would result in a materially higher heat flux at the top of the target unit, thereby potentially exposing the battery unit container wall to temperatures exceeding the critical threshold at which significant loss of steel integrity may occur.

The separation distance is measured from the edge of the flame base of the battery unit on fire to the nearest adjacent unit. Therefore, for the long side of the battery units (i.e. edge-to-edge orientation), this corresponds directly to the physical separation between the units. However, for the short side (i.e. end-to-end orientation), the effective separation includes both the external physical separation distance between battery units and the setback created by the length of the thermal management system at the ends of the battery unit container. As such, for end-to-end orientations, the required separation of the units can be achieved through a combination of the external physical distance between the units and the internal offset of the thermal management system, rather than solely the external spacing.

9.2.1.2 Adequacy Assessment

The current BESS Yard layout adopts a minimum of 1.5 m side-to-side and end-to-end separation distance between battery units, as recommended by Fluence for the standard GSP5000.

Preliminary fire modelling conducted in this assessment using LSFT data specific to Fluence's standard GSP5000 and site-specific weather conditions indicates that a minimum separation distance of 3 m would minimise the potential for fire propagation between battery units. Once the battery technology

and supplier are finalised, a reassessment of minimum separation distances between battery units should be undertaken, using specific information and LSFT results for that battery type, as part of the final design. This reassessment should serve as the basis for the final site layout.

Fire Safety Requirement

2. *Following confirmation of the battery technology, undertake a reassessment of minimum separation distances between the battery units as part of the final design. Preliminary fire modelling undertaken on Fluence's standard GSP5000 battery has determined that the supplier-proposed separation distances underpinning the current layout may require refinement following confirmation of the final battery technology to prevent fire propagation. Once reassessed, the separation distances should serve as the basis for the final site layout.*

In addition to the minimum separation distance between battery units, NFPA 855 requires a 3 m separation distance of battery units from lot lines, public ways, buildings, stored combustible materials, hazardous materials, high-piled stock, and other exposure hazards not associated with grid infrastructure.

9.2.2 Project Substation Transformer

The Project Substation transformer bund is located approximately:

- 22.5 m from the switchgear room
- 30 m from the BESS Yard
- 40 m from the control room and harmonic filters
- 60 m from the warehouse.

The transformer will be designed in accordance with AS 2067 [11], which specifies minimum clearances to buildings and adjacent equipment based on the volume of insulating oil. As the transformer type and associated oil volume are not yet defined, the adequacy of clearance distances in accordance with AS 2067 cannot be assessed at this stage.

Consequence modelling for the transformer was conducted using assumptions listed in Section 6.2.2. For the transformer pool fire scenario, the model predicts a downwind distance of 20 m to the 23 kW/m² heat radiation criterion, corresponding to the threshold at which unprotected steel may reach temperatures that lead to structural failure.

Based on this result, the current separation distances to surrounding buildings and equipment exceed the modelled impact distance and are therefore considered sufficient to prevent structural failure under the assessed conditions.

9.2.3 Warehouse

Spare battery modules, small quantities of dangerous goods and other combustible materials may be stored at the Project site warehouse. Separation should be provided between the battery modules and these materials to reduce the potential for fire escalation.

Fire Safety Requirement

3. *Ensure separation between stored spare battery modules and dangerous goods and/or other combustible materials within the warehouse to reduce the potential for fire escalation.*

9.3 BATTERY MANAGEMENT SYSTEM

The BMS will continuously monitor cell voltage, current, and temperature to detect abnormal operating conditions and prevent conditions that could lead to thermal runaway or electrical failure. Safety functions include alarm generation, controlled shutdown, and automatic isolation of battery modules where faults are detected. The BMS is expected to meet the safety and testing requirements of AS IEC 62619 [40].

9.4 THERMAL MANAGEMENT SYSTEM

Thermal management is provided through liquid cooling at the battery module level, with air-based cooling and humidity control at the container level. This system maintains the temperatures of battery cells, modules, and auxiliary electrical equipment within defined limits. Temperature conditions will be continuously monitored, with faults and excursions alarmed through the BMS and SCADA systems.

9.5 ENERGY MANAGEMENT SYSTEM

The energy management system will control and optimise charging and discharging profiles to prevent over-charge, over-discharge and sustained operation outside safe thermal and electrical limits. By managing power flows and integrating with the power plant controller, the energy management system will prevent electrical abuse of the batteries.

9.6 ASSET PROTECTION ZONES

Vegetation in the surrounding area can lead to bushfires, which may expose the battery units or general electrical equipment to high levels of radiant heat, triggering thermal runaway and/or fires. Bushfire control is demonstrated by defining APZs within the BMP. APZs reduce exposure of BESS infrastructure to radiant heat, flame contact and ember attack during bushfire events. APZs also support emergency response access and firefighting activities.

A BMP for the Project was completed, which assessed bushfire risk in accordance with various legislative and policy frameworks, including State Code 27. As per the BMP, APZs of approximately 12 m to 22 m will be maintained around all built infrastructure to limit radiant heat exposure to no greater than 29 kW/m² [41].

The BMP concluded that bushfire risk can be appropriately managed, provided that buildings and associated infrastructure (where applicable) are designed and constructed to specification, defined APZs are maintained, and future design development remains consistent with the currently proposed site layout.

9.7 SPARE BATTERY MODULE STORAGE

Battery modules in storage, i.e. spare battery modules stored in the warehouse, will be maintained at a low state of charge. This reduces the stored chemical energy available within the modules, limiting the potential for long-duration, self-sustaining fires. For indoor storage of batteries, NFPA 855 identifies a state of charge below 30% as sufficient to remove the need for fixed firefighting systems (i.e. sprinklers).

Fire Safety Requirement

4. *Maintain spare battery modules stored within the warehouse at a state of charge below 30% as indicated within NFPA 855, to limit the potential for long-duration, self-sustaining fires and remove the requirement for fixed firefighting systems (e.g. sprinklers).*

9.8 EXPLOSION PREVENTION

Ventilation within battery units will primarily prevent the accumulation of flammable gases released during abnormal conditions, such as cell failure and thermal runaway, which could otherwise lead to a confined deflagration or explosion. Ventilation also helps disperse heat and toxic decomposition products during an in-unit fire.

Mechanical ventilation is required to provide controlled air movement under both normal and abnormal conditions, particularly for large-scale BESS installations. A ventilation system will be provided to maintain flammable gas concentrations below the LEL, in accordance with NFPA 855 [7] and NFPA 69 [15], either continuously or upon activation by a gas detection system.

10 FIRE DETECTION AND PROTECTION

10.1 DETECTION AND ISOLATION

10.1.1 Detection Systems

10.1.1.1 Battery Unit

Detection systems are a critical safeguard for early identification of abnormal conditions within the battery units that may lead to thermal runaway or fire. Early detection enables timely response, limits escalation and reduces potential consequences.

Detection systems for battery units include:

- *Gas detection* – intended to provide early identification of abnormal conditions through the detection of gases generated during early off-gassing, before a measurable temperature rise.
- *Heat detection* – intended to be linked to the thermal management system to detect rapid temperature rises, which indicate initiation of thermal runaway.
- *Fire and smoke detection* – intended to identify visible products of combustion and active fire conditions within the battery units.

Detection systems will be provided as part of the industry-standard fire safety and monitoring controls typically applicable to utility-scale BESS installations (refer to Section 6.2.1). The following requirements, consistent with published guidance material [6] should be implemented:

Fire Safety Requirements

5. *Integrate the gas, heat, fire, and smoke detection systems with the BMS and SCADA systems to automatically initiate system shutdowns, electrical isolation, and raise alarms to notify site personnel.*

6. *Integrate the battery unit fire and smoke detection systems with the BMS and SCADA systems such that their activation automatically notifies emergency services.*

10.1.1.2 Spare Battery Modules and DG Storage

Spare battery modules and small quantities of dangerous goods may be stored at the Project site warehouse, which could lead to a fire event. Smoke detection should be installed in the warehouse.

Fire Safety Requirement

7. *Install smoke detectors within the Project site warehouse to provide early warning to site personnel in the event of a fire involving stored battery modules or dangerous goods.*

10.1.2 Electrical Isolation

Isolation measures are a critical safety component, intended to limit escalation and reduce electrical hazards during emergency conditions. Emergency responders will not access affected areas until electrical isolation has been confirmed. Isolation is intended to deenergise impacted battery units by halting charge and discharge cycles; however, residual or stranded energy may remain within the system even after isolation.

Automatic electrical isolation measures will be provided for the Project, in line with standard fire protection systems for utility-scale BESS installations, and will be integrated into the BMS. An additional manual electrical isolation method should also be provided in the event that automated or primary isolation measures fail.

Fire Safety Requirement

8. *Provide a means for manual electrical isolation of individual battery units from the BESS, including the installation of emergency shutdown devices located within the control room and/or at other safe, readily accessible locations remote from the BESS Yard, to enable operator-initiated isolation in the event that automated or primary isolation measures fail.*

10.2 FIRE & EXPLOSION PROTECTION AND SUPPRESSION

10.2.1 In-Unit Fire Suppression

Fire suppression systems can be built into battery units. BESS fire suppression systems may not arrest thermal runaway once initiated, but can reduce fire spread, radiant heat and escalation.

Examples of some in-built fire suppression systems are:

- Water-based systems (sprinklers/water mist)
- Foam systems
- Aerosol suppression systems – discharge of fine particles to interrupt combustion reactions
- Carbon dioxide / inert gas flooding systems
- Dry chemical powder systems.

Per the considerations for suppressing agents in NFPA 855, water is the preferred agent for lithium-ion battery fires. Other types of suppression systems present limitations or other risks as follows:

- Foam systems may insulate burning materials and lead to heat rise, promoting thermal runaway
- Aerosol and gaseous systems may increase the accumulation of flammable gas and explosion risk, and may also introduce personnel and/or environmental hazards
- Dry chemical systems may suppress flames without providing sufficient cooling to interrupt the thermal runaway process.

As noted above, suppression systems are typically relied upon to prevent escalation to adjacent battery units where adequate separation distances between units and/or adjacent infrastructure cannot be achieved. Adequate separation distances are to be confirmed for the Project site in line with Fire Safety Requirement 2, following finalisation of the battery technology. On that basis, battery unit suppression is not currently identified as a required fire safety measure for the battery unit enclosure.

10.2.2 Deflagration Panels

Deflagration panels provide an additional layer of safety during a severe runaway event in which the generation of flammable gases overwhelms the venting mechanisms on the battery units. Deflagration panels release internal overpressure during an explosion within a battery unit, thereby reducing the risk of structural failure and projectile ejection. Deflagration panels will be provided in accordance with NFPA 68 [14].

10.2.3 Firewater System

As per PO7 of State Code 27, the Project site should be capable of providing a reliable, sustainable, and fit-for-purpose water supply.

A reticulated water supply will be provided for the Project, sourced from Copperfield Dam under a licensed allocation of up to 4.65 GL/year, and delivered to the site via a network of private water pipelines serving the Clean Energy Hub, including the Kidston Solar and Hydro projects and accommodation facilities. On-site connections will be provided with rural fire brigade tank fittings [41].

The requirements of the firewater system are further discussed and assessed in Section 11.

10.2.4 First Aid Fire Protection Equipment

First-aid fire protection equipment is provided in addition to the main fire systems and intended to support early response to minor events by trained personnel, where safe to do so.

First-aid fire protection equipment can include:

- Fire extinguishers
- Fire hose reels.

First-aid fire equipment is not relied upon for suppression of fully developed battery unit fires, but forms part of broader site fire protection arrangements and may assist in quickly suppressing a minor fire on site to prevent escalation. First-aid fire protection equipment is to be provided in accordance with relevant building codes and Australian Standards covering minor storage of flammable and combustible liquids (e.g. AS 1940).

10.3 EMERGENCY RESPONSE

10.3.1 Operational Emergency Management Plan (OEMP)

A key aspect of fire protection and suppression is timely and effective emergency response. The Operational Emergency Management Plan (OEMP) includes the clear definition and documentation of the applicable response measures. An OEMP will be developed and implemented in coordination with the QFD and local rural fire brigade before project start-up. The OEMP will:

- Identify site-specific BESS hazards relevant to emergency response scenarios
- Detail emergency response strategies, including staff movement restrictions and exclusion zones based on consequence modelling results for fire, explosions, and toxic consequences
- Define key emergency roles and responsibilities for site personnel, contractors and external responders
- Document electrical isolation procedures for damaged or affected equipment (e.g. remote isolation via the SCADA system)
- Provide emergency contact details, including 24/7 BESS manufacturer or specialist technical support
- Define requirements for external emergency response, including initiation, notification, and coordination arrangements. Setback distances will be established to support safe emergency responder access, and an emergency information booklet will be provided at the site perimeter to support first-responder actions.
- Contain an emergency evacuation plan in line with AS 3745:2010 [42]
- Identify the nominated emergency control centre or incident command location for use during an emergency.

Emergency response arrangements are to be developed in consultation with the relevant fire and emergency service authority. The relevant fire emergency service authority for the area is the rural fire brigade, staffed by local volunteers.

Large-scale BESS-related incidents pose a major electrical hazard, and emergency services intervention is expected to be undertaken in a manner similar to other electrical infrastructure (e.g. a substation), where firefighters may not enter the affected area until an appropriate electrical company representative attends and confirms that power is isolated.

10.3.2 Emergency Site Access

Site access provisions will support a safe and effective firefighting response, thereby limiting escalation and the severity of consequences. Access will be provided via an existing internal access track from Gilberton Road, which currently services other Clean Energy Hub facilities and substations, and where necessary, will be upgraded to a minimum width of 6 m to accommodate emergency vehicles and operational traffic. Consistent with the published guidance material [5], access around the full perimeter of the battery units, and at least two site access points, with cleared and accessible firefighting areas will be established.

10.3.3 Emergency Response Team

The Project site is expected to be staffed by two to four full-time personnel once the BESS is operational. On-site personnel will not be expected to undertake active firefighting or technical intervention during a

BESS emergency. Instead, their actions will be limited to keeping people safe, confirming isolation, and providing timely and accurate information, rather than incident control.

In line with the OEMP, the initial response by on-site personnel will include the following:

- Identification of the emergency condition and ongoing monitoring for potential escalation
- Confirmation of electrical isolation of affected equipment
- Notifying the rural fire brigade, any on-call support teams, and site personnel, as appropriate
- Coordination and direction of personnel evacuation to designated muster points.

11 FIRE SYSTEM REQUIREMENTS

11.1 BASIS OF PROTECTION

The basis of fire system design incorporates the intended role and performance objectives of the fire prevention, detection, isolation, and protection measures in response to representative scenarios. Fire response strategies were assessed for the following scenarios:

- Scenario 1a: Battery unit – fire
- Scenario 1b: Battery unit – toxic plume dispersion
- Scenario 1c: Battery unit – explosion
- Scenario 2a: Project Substation transformer – fire
- Scenario 2b: Project Substation transformer – explosion
- Scenario 3: Spare battery module fire
- Scenario 4: Bushfire (impacting BESS equipment).

11.1.1 Battery Unit – Fire

Fires from battery units can last from a few hours to a few days, and their extinguishment is considered complex and resource-intensive. Manual efforts to directly extinguish battery unit fires may expose responders to unacceptable risks, including explosion, toxic gas release, and electrical hazards. As a result, fire response for battery unit fires is conducted through controlled burn-out and situation monitoring.

The general approach to managing battery unit fires involves:

- Early automatic detection, alarms and notification to emergency services
- Electrical isolation of the battery unit and system shutdown
- Prevention of fire propagation between adjacent units via battery unit separation distances
- Provision of firewater.

Detection Systems
Early detection of thermal runaway enables a timely response (e.g. electrical isolation and evacuation). Detection of abnormal conditions occurs via gas, heat, and fire/smoke detection systems, which raise alarms to notify site personnel and emergency services, in line with the requirements detailed in Section 10.1.1.

Electrical Isolation
Following detection, electrical isolation and system shutdown prevent further charging of the batteries, reducing the available energy (i.e. fire intensity) and the likelihood of electrical impacts on emergency responders. Electrical isolation is automatically initiated upon gas, heat, and fire/smoke detection, in line with Fire Safety Requirement 5. Additionally, manual electrical isolation (e.g. via emergency shutdown devices) is available if the automated isolation measures fail, in line with Fire Safety Requirement 8.

Escalation Prevention
Preventing fire propagation is intended to be managed primarily through adequate separation between adjacent battery units. In accordance with Fire Safety Requirement 2, a site-specific reassessment of the separation distances required to prevent fire propagation will be undertaken following finalisation of the battery technology and used to confirm the final battery unit layout.

Firewater System
External firewater application to the battery units will be ineffective for extinguishing the fire and should not be relied upon to prevent its propagation to nearby units. However, in line with published guidance [5,6], a hydrant system compliant with AS 2419.1 should be supplied for the Project (refer to Section 11.2). The hydrant system will be available to emergency responders for responding to smaller fires (e.g. vegetation fires) that may occur within the Project fenceline. Firewater may also be used to provide cooling protection for adjacent battery units if deemed appropriate.

11.1.2 Battery Unit – Toxic Plume Dispersion

Toxic plume dispersion from a battery unit may occur following thermal runaway and fire, due to the release of toxic gases generated from electrolyte decomposition and combustion products. No additional fire system requirements beyond those listed for a battery unit fire are required for toxic plume dispersion.

11.1.3 Battery Unit – Explosion

Explosion scenarios associated with battery units arise from the release and confinement of flammable gases generated during thermal runaway, followed by ignition. In addition to the fire system requirements for a battery unit fire, the approach to managing battery unit explosions involves the following:

- Explosion prevention system
- Deflagration panels.

Explosion Prevention
Explosion prevention is achieved through the ventilation system within the battery units, which prevents the accumulation of flammable gases and, hence, the potential for explosion.

Deflagration Panels
Deflagration panels relieve the internal overpressure generated by the ignition of a flammable atmosphere within the container. These panels reduce the likelihood of structural failure and projectile impacts.

11.1.4 Project Substation Transformer – Fire

The Project Substation transformer is to be located a sufficient distance from other equipment and buildings such that fire escalation is not expected, as demonstrated by the consequence modelling results. In addition, the fire will be contained within the transformer bund. Therefore, a response strategy focused on controlled burn-out, fire monitoring, and emergency services intervention upon arrival is considered appropriate.

The general approach to managing a transformer pool fire involves:

- Electrical isolation of equipment connected to the transformer
- Prevention of fire escalation via separation
- Provision of firewater.

Electrical Isolation
Electrical disturbances resulting from the event (e.g. power or voltage fluctuations) would be detected by the battery unit BMS and energy management systems as abnormal operating conditions, initiating automatic isolation of the battery units from the BESS network. Manual isolation can also be undertaken by site personnel via emergency shutdown controls, in accordance with Fire Safety Requirement 8, to ensure complete isolation of BESS equipment.

Escalation Prevention
A pool fire at the Project Substation will not impact surrounding infrastructure at heat levels that would cause damage (i.e. less than 23 kW/m^2). Hence, the separation distance sufficiently reduces the potential for escalation.

Firewater System
Firewater application is not necessary to prevent escalation of the fire; therefore, immediate emergency service intervention is not required, and the fire may be allowed to burn out. Where required, firewater should be available for emergency services for incidental fires.

11.1.5 Project Substation Transformer – Explosion

No additional fire system requirements beyond those listed for the transformer fire are required for the transformer explosion.

11.1.6 Spare Battery Modules Fire

A fire involving the spare battery modules would be managed through controlled burn-out and situation monitoring. The warehouse is an enclosed area, which has the potential to accumulate toxic vapours released by the battery modules involved in the fire. Manual efforts to directly extinguish battery unit fires may expose responders to unacceptable risks. Therefore, the recommended approach is for site personnel and emergency responders to monitor the situation from a safe distance.

The general approach to managing this fire involves:

- Early fire detection and notification to emergency services
- Prevention of fire escalation via segregation and separation
- Provision of firewater.

Detection Systems
Smoke detectors installed in the warehouse provide early warning to site personnel and will notify emergency services in the event of a fire, in line with Fire Safety Requirement 7. This ensures site personnel are aware of the hazard and evacuate the area.

Escalation Prevention
Sufficient separation and segregation of stored spare battery modules and dangerous goods or other combustible material should be provided within the warehouse. This segregation reduces the potential for fire escalation, in line with Fire Safety Requirement 3.

Firewater System
The direct application of firewater is not recommended for extinguishing battery module fires. In line with Fire Safety Requirement 4 and NFPA 855, where spare battery modules are stored below a 30% state of charge, the likelihood of a long-duration, self-sustaining fire is reduced such that fixed sprinkler systems are not required for the warehouse. The site's firewater hydrant system remains available for external fires that may encroach on the warehouse.

11.1.7 Bushfire

Bushfire response will be conducted in line with the bushfire protection measures listed in the BMP, summarised in Table 18.

In line with the requirements of the BMP, APZs of approximately 12 m to 22 m (as shown in Figure 7, reproduced from the BMP) will be maintained around all built infrastructure to limit radiant heat exposure to no greater than 29 kW/m² [41]. This level of protection is sufficient to prevent the escalation of a vegetation fire to damage critical site infrastructure, including battery units, and to prevent any on-site fires from initiating a bushfire.

The general response to a bushfire does not involve on-site firefighting. Site evacuation should be triggered. A suitable reticulated water supply should be provided (refer to Table 18) to enable access for emergency services to undertake off-site firefighting activities where a bushfire approaches the Project site.

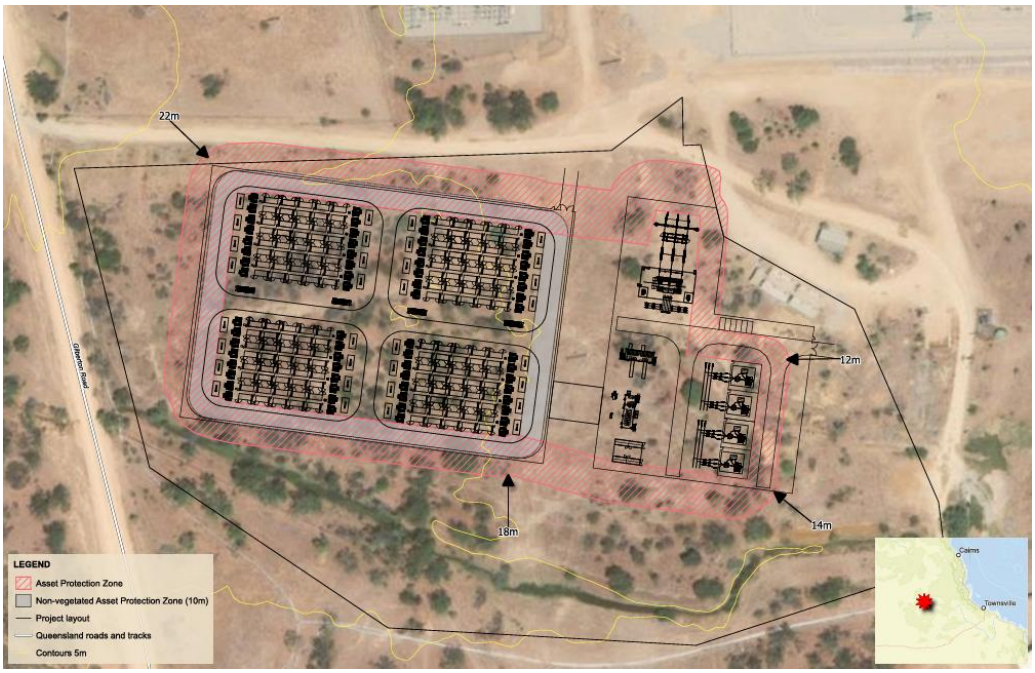


Figure 7: Asset Protection Zones

Table 18: Bushfire Protection Measures

Bushfire Protection Measure	Description
Construction requirements	Construction of buildings at the Project site is to comply with relevant national codes and standards, with assets designed to withstand radiant heat consistent with a bushfire attack level (BAL) of 29 kW/m^2 or lower exposure level.
Asset protection zones	APZs defined in the BMP will designate areas around the BESS free of combustible materials. The APZs limit the potential for bushfire-initiated fire within the battery units by reducing exposure to radiant heat, flame and ember attack from an approaching fire front. APZs also support emergency response access and firefighting activities and will be maintained through ongoing vegetation management.
Access and egress routes	Access to the site is via existing internal roads connected to Gilberton Road, with upgrades as required to meet emergency vehicle access requirements. The access network is to facilitate both emergency service entry and safe evacuation of personnel during bushfire events.
Water supply	A reticulated water supply will be provided via an overhead standpipe adjacent to the site to support firefighting. The standpipe is to be accessible, appropriately fitted, and maintained for the life of the project to support emergency response.
Fire detection and suppression equipment	Fire detection and suppression equipment is to be provided in accordance with relevant guidelines, including requirements for buildings, dangerous goods storage, electrical installations, and site vehicles.

Bushfire Protection Measure	Description
Assembly location and evacuation procedures	Designated assembly areas and the evacuation approach is defined in the BMP, noting that personnel are to gather at a defined location and follow instructions from site management. It also highlights that evacuation routes traverse vegetated areas and must be managed carefully during bushfire conditions.
Emergency response procedures	The emergency response procedures include actions to be taken under different bushfire alert levels. These procedures require personnel to follow site management directions, monitor official warnings, and implement appropriate response actions depending on the severity of the alert.

11.2 FIREWATER SYSTEM REQUIREMENTS

As described above, firewater application will be undertaken by emergency responders (i.e., emergency services) and will primarily be used to respond to smaller incidental fires, or for off-site firefighting when a bushfire approaches the Project, and to provide cooling protection, where this is deemed appropriate.

The firewater system requirement for the Project site was determined in accordance with AS 2419.1 Table 2.2.5(D) for open-yard installations, based on the area of a single cluster of battery units within the BESS Yard. As per industry guidance [6], a cluster can be considered a separate open yard when a minimum separation distance of 6 m is provided, as is the case for the four clusters of the BESS Yard. For areas between 3,000 m² and 9,000 m², AS 2419.1 requires a minimum of two hydrant outlets to operate simultaneously.

The hydrant system should be capable of providing the minimum flow and pressure specified by AS 2419.1 for at least four hours, which is 600 L/min each at 350 kPa when unassisted (i.e. with no firewater pumps installed), and 600 L/min each at 700 kPa when boosted by a fire brigade pumping appliance at the most hydraulically disadvantaged hydrant.

Hydrant layout should ensure coverage to all identified fire design scenarios (e.g. BESS container units, Project Substation, etc.). The coverage provided by each hydrant is between 10 m and 70 m, in line with AS 2419.1. Additionally, each hydrant outlet should be located at least 10 m from the nearest electrical infrastructure [6].

The total firewater requirements for the Project are presented in Table 19.

Table 19: Firewater Requirements Summary

Firewater Application Method	Total Firewater Flow (L/min)	Duration (min)	Total Firewater Volume (kL)
2 x fire hydrant hose streams	1,200	240	288

Published guidance material [5] indicates that firewater may be supplied either via a reticulated system or on-site storage. A reticulated water supply is proposed for the Project, sourced from Copperfield Dam under a licensed allocation of up to 4.65 GL/year. As part of the fire system design, verification is required to confirm that the reticulated system can achieve the minimum hydrant operating flow and pressure specified in the design. If this cannot be achieved, provision of a firewater storage tank and on-site firewater pumps will be required.

The following fire safety requirements should be implemented for the Project site's firewater system.

Fire Safety Requirements

9. *Provide a fire hydrant system in line with AS 2419.1. Including the following requirements:*

   a. *Hydrant layout should ensure coverage to all identified fire design scenarios (e.g. BESS container units, Project Substation, etc.). The coverage provided by each hydrant is between 10 m and 70 m, in line with AS 2419.1. Additionally, each hydrant outlet should be located at least 10 m from the nearest electrical infrastructure.*

   b. *The hydrant system design must be able to supply a minimum of two fire hydrants operating simultaneously at a flow rate of 600 L/min and a pressure of 350 kPa (unassisted) or 700 kPa (when boosted by a fire brigade pumping appliance). This should be based on the two most hydraulically disadvantaged hydrants.*

   c. *It can be verified that the reticulated firewater system can achieve the flow and pressure requirements for at least four hours, or, alternatively, provision is made for an on-site water storage or a diesel-operated firewater pump where these requirements cannot be met.*

12 FIREWATER AND SPILL CONTAINMENT

Firewater and spill containment refers to the provision of physical measures to limit the spread of contaminated firefighting water and liquid releases, thereby mitigating fire escalation and preventing environmental impacts. Firewater and spill containment are required to ensure that released materials and contaminated runoff are retained on-site and do not enter surrounding land, stormwater systems, or waterways, where they could cause secondary hazards or environmental harm.

The proposed drainage and containment systems at the Project site will be designed to manage flooding, stormwater flows, and firefighting run-off water. The systems will prevent water ingress to the battery units and electrical infrastructure during storm and flood events, reducing the risk of short-circuiting, electrical failure and subsequent thermal runaway. During firefighting activities, the systems will also provide containment of contaminated run-off to limit uncontrolled releases to surrounding off-site land and waterways, reducing potential environmental impacts. The containment design will include a detention basin within the Project area [43].

At the Project site, the largest release of liquid can occur from the Project Substation transformer. As per the guidance provided in AS 1940 for power stations and grid transformers, spill containment shall have a net capacity greater than that of the largest single unit draining to it and shall be equipped with underflow discharge. The Project Substation transformer will be placed within a bunded area to contain oil spills. An oil separator will be installed within the stormwater system before discharge to the detention basin [43].

Fire Safety Requirements

10. *The Project Substation transformer should be placed within a bund sized to contain the entire oil release from the transformer, with an additional allowance for rainfall and firefighting water, and an underflow discharge to remove water from the bund without contaminating the surrounding soil and waterways.*

11. *Where a containment system is connected to a reticulated stormwater system, the containment system should be designed such that it can be automatically isolated from the stormwater system upon the activation of any fire safety measures, such as smoke / fire detection.*

12. *Confirm the sizing and adequacy of firewater and spill containment systems once information on the final firewater system arrangement and site layout become available.*

13 SUMMARY OF FIRE SAFETY REQUIREMENTS

The following fire safety requirements have been identified in the Preliminary FSS:

1. *A fit-for-purpose preventative maintenance program should be implemented for the BESS equipment and associated electrical infrastructure to prevent deterioration and/or failures that could contribute to the occurrence of identified fire scenarios. This should include:*

    a. *A documented inspection, testing, and maintenance program for BESS equipment and associated electrical infrastructure to identify degradation, faults, or abnormal conditions that could lead to a fire event.*

    b. *Monitoring of key battery parameters via the BMS (e.g. voltage, temperature, current) and identifying conditions indicative of abnormal operation.*

    c. *Periodic testing and inspection of safety systems, including electrical isolation devices, fire and gas detection, air cooling system, and explosion prevention measures, to ensure correct operation under fault conditions.*

    d. *Inspection and maintenance of the thermal management and energy management systems, to ensure continued effectiveness in maintaining battery unit equipment within their specified operating limits.*

2. *Following confirmation of the battery technology, undertake a reassessment of minimum separation distances between the battery units as part of the final design. Preliminary fire modelling undertaken on Fluence's standard GSP5000 battery has determined that the supplier-proposed separation distances underpinning the current layout may require refinement following confirmation of the final battery technology to prevent fire propagation. Once reassessed, the separation distances should serve as the basis for the final site layout.*

3. *Ensure separation between stored spare battery modules and dangerous goods and/or other combustible materials within the warehouse to reduce the potential for fire escalation.*

4. *Maintain spare battery modules stored within the warehouse at a state of charge below 30% as indicated within NFPA 855, to limit the potential for long-duration, self-sustaining fires and remove the requirement for fixed firefighting systems (e.g. sprinklers).*

5. *Integrate the gas, heat, fire, and smoke detection systems with the BMS and SCADA systems to automatically initiate system shutdowns, electrical isolation, and raise alarms to notify site personnel.*

6. *Integrate the battery unit fire and smoke detection systems with the BMS and SCADA systems such that their activation automatically notifies emergency services.*

7. *Install smoke detectors within the Project site warehouse to provide early warning to site personnel in the event of a fire involving stored battery modules or dangerous goods.*

8. *Provide a means for manual electrical isolation of individual battery units from the BESS, including the installation of emergency shutdown devices located within the control room and/or at other safe, readily accessible locations remote from the BESS Yard, to enable operator-initiated isolation in the event that automated or primary isolation measures fail.*

9. *Provide a fire hydrant system in line with AS 2419.1. Including the following requirements:*

a. *Hydrant layout should ensure coverage to all identified fire design scenarios (e.g. BESS container units, Project Substation, etc.). The coverage provided by each hydrant is between 10 m and 70 m, in line with AS 2419.1. Additionally, each hydrant outlet should be located at least 10 m from the nearest electrical infrastructure.*

b. *The hydrant system design must be able to supply a minimum of two fire hydrants operating simultaneously at a flow rate of 600 L/min and a pressure of 350 kPa (unassisted) or 700 kPa (when boosted by a fire brigade pumping appliance). This should be based on the two most hydraulically disadvantaged hydrants.*

c. *It can be verified that the reticulated firewater system can achieve the flow and pressure requirements for at least four hours, or, alternatively, provision is made for an on-site water storage or a diesel-operated firewater pump where these requirements cannot be met.*

10. *The Project Substation transformer should be placed within a bund sized to contain the entire oil release from the transformer, with an additional allowance for rainfall and firefighting water, and an underflow discharge to remove water from the bund without contaminating the surrounding soil and waterways.*

11. *Where a containment system is connected to a reticulated stormwater system, the containment system should be designed such that it can be automatically isolated from the stormwater system upon the activation of any fire safety measures, such as smoke / fire detection.*

12. *Confirm the sizing and adequacy of firewater and spill containment systems once information on the final firewater system arrangement and site layout become available.*

14 STATE CODE 27 ASSESSMENT

The relevant State Code 27 POs and an FSS demonstration of satisfying these POs are detailed in Table 20. All relevant POs were considered satisfied.

Table 20: Off-Site Risk Performance Outcomes

Performance Outcome	Criteria Requirement	FSS Demonstration of Performance Outcomes	Outcomes
PO3 – Risk Mitigation	Development mitigates the risks of fire, explosion and thermal runaway from battery storage infrastructure.	Fire prevention, detection, isolation and emergency response measures have been defined to manage these hazards, including separation distances, BMS, detection systems, and emergency procedures. With these measures in place, the Project will satisfy this performance outcome.	Satisfied
PO4 – Risk Mitigation	Development is designed to ensure fire and thermal events can be contained and isolated to prevent escalation and propagation to other developments and uses on and offsite.	Consequence analysis demonstrates that fire, explosion and toxic impacts from battery unit scenarios are limited to short distances and are largely confined within the BESS Yard. Fire impacts from the transformer are not expected to propagate to nearby buildings or battery units. Prevention of fire propagation between adjacent battery units is intended to be achieved through the provision of appropriate separation distances. In accordance with Fire Safety Requirement 2, the separation distances required for the final design will be reassessed following confirmation of the battery technology, and the outcomes of that reassessment will be used to validate the final battery unit layout. APZs are defined in the BMP for protection against bushfires in the region. Based on these FSS findings, the Project will satisfy this performance outcome.	Satisfied
PO5 – Incident Response	Development is designed to facilitate effective and efficient emergency service access and response in the event of a fire, bushfire (including cleared firefighting areas at the interface of hazardous vegetation), explosion, contamination leak or any other incident requiring an emergency service response.	The following emergency response measures have been identified in the event of an incident: • Emergency Site Access • Operational Emergency Management Plan. With these measures in place, the Project will satisfy this performance outcome.	Satisfied

Performance Outcome	Criteria Requirement	FSS Demonstration of Performance Outcomes	Outcomes
PO6 – Incident Response	The development: • Provides appropriate fire detection, monitoring and notification to the site operator; and • Ensures the electrical safety of the facility, in the event of an incident requiring emergency response.	Detection and isolation systems are defined, including gas, heat, and fire detection integrated with BMS and SCADA for automatic isolation and alarm response. Electrical isolation of electrical equipment is identified as a key firefighting response measure. With these systems in place, the Project will satisfy this performance outcome.	Satisfied
PO7 – Incident Response	Development demonstrates that there is capacity to provide a reliable, sustainable and fit-for-purpose water supply.	The firewater source has been confirmed, and the firewater system requirements have been defined in accordance with AS 2419.1 and the assessed fire scenarios. With these requirements fulfilled, the Project will satisfy this performance outcome.	Satisfied
PO18 – Protecting water quality and stormwater management	Development prevents the release of contaminants to surface water or groundwater in the event of an incident, including a fire or explosion.	Firewater and spill containment systems have been identified, including bunding for transformers and site-wide drainage with detention and isolation capability to prevent contaminated runoff from leaving the site. With these systems in place, the Project will satisfy this performance outcome.	Satisfied

15 REFERENCES

1 State of Queensland, the Department of State Development, Infrastructure, Local Government and Planning, “State Development Assessment Provisions – State Code 27: Battery Storage Facility Development”, Version 3.5, December 2025.

2 New South Wales Department of Planning, “Hazardous Industry Planning Advisory Paper No. 2: Fire Safety Study Guidelines”, January 2011.

3 Queensland Government, “Planning Act 2016”, as at 27 April 2026, https://www.legislation.qld.gov.au/view/html/inforce/current/act-2016-025

4 Queensland Government, “Planning Regulation 2017”, as at 1 May 2026, https://www.legislation.qld.gov.au/view/html/inforce/current/sl-2017-0078.

5 Australasian Fire and Emergency Service Authorities Council, “Large-scale battery energy storage system installations”, Guideline, Version 1, 5 February 2025.

6 NSW Government Fire and Rescue, “Large-scale external lithium-ion battery energy storage systems”, Technical Information, Version 02, 29 April 2026.

7 National Fire Protection Association, NFPA 855, “Standard for the Installation of Stationary Energy Storage Systems”, 2026.

8 Underwriters Laboratories Inc., UL 9540A, “Test Method for Evaluating Thermal Runaway Fire Propagation Characteristics of Battery Energy Storage Systems”, UL Standards.

9 Australian Standard, AS IEC 62619:2023, “Secondary cells and batteries containing alkaline or other non-acid electrolytes”, Standards Australia, 2023.

10 Australian/New Zealand Standard, AS/NZS 3000:2018, “Electrical installations (Wiring Rules)”, Standards Australia, 2018.

11 Australian Standard, AS/NZS 2067:2016, “Substations and High Voltage Installations Exceeding 1kV a.c.”, Standards Australia, 2016.

12 Australian Standard, AS 2419.1:2021, “Fire hydrant installations Part 1: System design, installation and commissioning”, Standards Australia, Sixth Edition, 2021.

13 Australian Standard, AS 1940, “The storage and handling of flammable and combustible liquids”, Standards Australia, Sixth Edition, 2017.

14 National Fire Protection Association, NFPA 68, “Standard on Explosion Protection by Deflagration Venting”, 2023.

15 National Fire Protection Association, NFPA 69, “Standard on Explosion Prevention Systems”, 2024.

16 Etheridge Shire Council, “Etheridge Shire Council Planning Scheme”, December 2025.

17 R4Risk, “Kidston Battery Energy Storage System Risk Management Assessment Report”, Release 1, R4Risk Ref. 314-02, 25 June 2026.

18 TUV Rheinland, "AESC-INF-04-009 Grid Stack Pro 5000 V1E AESC 530Ah Large-Scale Fire Test – Test Report", Report No.: CN25A03C 001, 28 October 2025.

19 Australian Standard, AS/NZS 3000: 2018, "Electrical installations (known as the Australian/New Zealand Wiring Rules)", Standards Australia, Second Edition, 2018.

20 Australian Energy Council Limited, Battery Energy Storage Systems Guidance Report, Revision 1, 12 September 2024.

21 The Fire Protection Research Foundation, "Lithium-Ion Batteries Hazard and Use Assessment", July 2011, https://www.nrc.gov/docs/ML1719/ML17191A294.pdf

22 Gexcon (J. Connor, V. Bohacikova, C. Coffey, S. Perez, "Battery Thermal Runaway Consequence Modelling with the X-Suite", First Release, 24 November 2025.

23 TUV Rheinland, "AESC-INF-04-008 Grid Stack Pro 5000 V1E AESC 530Ah Unit Level UL 9540 – Test Report", Report No.: CN251D21 001, 21 March 2025.

24 UL Solutions, "AESC-INF-04-005 Module Level UL9540A Test Report for AESC 530", Revision 6, 25 May 2025.

25 Sturk, D., Rosell, L., Blomqvist, P., & Ahlberg Tidblad, A, "Analysis of Li-ion battery gases vented in an inert atmosphere thermal test chamber", Batteries, 5(3), 61, 2019.

26 NGH Pty Ltd, "Kidston Natural Hazards Risk Assessment", File No. 250711, Final V1, 30 April 2026.

27 Queensland Government, State Planning Policy Interactive Mapping System, Bushfire Prone Area Overlay, https://sppims-dams.dsdilgp.qld.gov.au, Accessed 20 March 2026.

28 Queensland Fire and Emergency Services, "Bushfire Resilient Communities - Technical Reference Guide for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience – Bushfire", October 2019, https://www.fire.qld.gov.au/sites/default/files/2021-05/Bushfire-Resilient-Communities.pdf.

29 CSA/ANSI, "C800: Requirements for Battery Energy Storage Systems – Large-Scale Fire Testing", CSA Group / American National Standards Institute, 2023.

30 Standards Australia, AS 1940, "The storage and handling of flammable and combustible liquids", 2017.

31 Hazardous Industry Planning Advisory Paper No. 4, "Risk Criteria for Land Use Planning", Department of Planning, New South Wales, January 2011.

32 Det Norske Veritas, PHAST, Version 9.11, https://www.dnv.com/services/phast/

33 United States Environmental Protection Agency, "About Acute Exposure Guideline Levels (AEGLs)", http://www.epa.gov/aegl/about-acute-exposure-guideline-levels-aegls, last updated 5 May 2026.

34 Safe Work Australia, "Workplace Exposure Standards for Airborne Contaminants", 17 November 2025.

35 United States Environmental Protection Agency, “Hydrogen fluoride results – AEGL Program, Hydrogen fluoride 7664-39-3 (Final), https://www.epa.gov/aegl/hydrogen-fluoride-results-aegl-program, last updated 5 May 2026.

36 United States Environmental Protection Agency, “Carbon monoxide results – AEGL Program, Carbon monoxide 630-08-0 (Final), https://www.epa.gov/aegl/carbon-monoxide-results-aegl-program, last updated 8 August 2025.

37 TNO (2005) Methods for the Calculation of Physical Effects - due to releases of hazardous materials (liquids and gases) - (Yellow Book 3rd edition) CPR14E Part 1, Director-General for Social Affairs & Employment, The Netherlands.

38 New South Wales Government, Department of Planning, “Hazardous Industry Planning Advisory Paper No. 4, Risk Criteria for Land Use Safety Planning”, January 2011 (HIPAP No. 4).

39 Chemical Hazardous Response Information System (CHRIS), “OILS, MISCELLANEOUS: MINERAL”, June 1999.

40 Australian Standard, AS IEC 62619:2023, “Secondary cells and batteries containing alkaline or other non-acid electrolytes”, Standards Australia, 2023.

41 NGH Pty Ltd, “Kidston Bushfire Management Plan”, File No. 250711, Final V1, 30 April 2026.

42 Australian Standard, AS 3745:2010, “Planning for emergencies in facilities”, Standards Australia, Fourth Edition, 2010.

43 Fyfe Pty Ltd, “Kidston Battery Energy Storage System Stormwater Management Plan”, File No. 250711-CIV-REP-0002, Rev A, 17 April 2026.

APPENDIX A: RMAR RISK REGISTER

This appendix contains the risk register as presented in the Risk Management Assessment Report[1].

[1] R4Risk, "Kidston Battery Energy Storage System Risk Management Assessment Report", Release 1, R4Risk Ref. 314-02, 25 June 2026.

Risk Register

Hazardous Event	Cause	Consequence	Controls	Type	Consequence Category		Off-Site Impact?	Off-Site Residual Risk			Comment
					H&S	Env.		L	S	RR	
1. Battery module component failure	Component failures within battery system equipment could be caused by: - Internal short circuits - Physical damage to battery equipment (e.g. dropped objects) - Manufacturing defects - Failure to return to service correctly (e.g. remove foreign objects, ensure plant is fully assembled, enable all systems).	Thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site due to heat radiation and/or toxic exposure - On-site environmental impacts from toxic combustion by-product deposition. - Minor health impacts to off-site receptors from smoke inhalation.	Preventative maintenance	OPS	☑	☑	Yes	Unlikely	Minor	Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Battery management system	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			Explosion prevention	OEM							
			SCADA and operator response	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
2. Over charging / high-rate charging	Overcharging or high-rate charging of batteries could be caused by an Energy Management System fault or out of range voltage from the PCS/ transformer.	Thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site due to heat radiation and/or toxic exposure - On-site environmental impacts from toxic combustion by-product deposition. - Minor health impacts to off-site receptors from smoke inhalation..	Energy management system	OEM	☑	☑	Yes	Unlikely	Minor	Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Electrical equipment monitoring	OPS							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			Explosion prevention	OEM							
			SCADA and operator response	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
3. Battery module coolant leak	A leak of coolant from the battery modules could be caused by a mechanical failure, damage to a battery container (i.e. during lifting) or incorrect maintenance.	- Internal leak causing ingress of coolant to battery or other electrical components and short circuiting. - Battery thermal runaway, resulting in fire/explosion and release of smoke and toxic vapours. Potential for minor health impacts to off-site receptors from smoke inhalation. - External leak causing injury during contact with personnel and/or on-site environmental impacts.	Preventative maintenance	OPS	☑	☑	Yes	Unlikely	Minor	Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Containerised battery design - minimises the degree of release	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			Battery management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			Explosion prevention	OEM							
			SCADA and operator response	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
			First aid as per SDS	OPS							
4. Battery module electrolyte leak	A release of electrolyte from a battery cell could be caused by damage such as crush or puncture during installation or maintenance.	Thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site due to heat radiation and/or toxic exposure - On-site environmental impacts from toxic combustion by-product deposition. - Minor health impacts to off-site receptors from smoke inhalation.	Preventative maintenance	OPS	☑	☑	Yes	Unlikely	Minor	Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Containerised battery design - minimises the degree of release	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			Battery management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			Explosion prevention	OEM							
			SCADA and operator response	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							

Hazardous Event	Cause	Consequence	Controls	Type	Consequence Category		Off-Site Impact?	Off-Site Residual Risk			Comment
					H&S	Env.		L	S	RR	
			Operational Emergency Management Plan	OPS							
			First aid as per SDS	OPS							
5. Incorrect disposal of hazardous waste	Storage of waste and/or damaged battery system equipment (e.g. electrolyte, damaged cells).	- Fire - Thermal runaway reaction of waste battery system equipment and release of toxic gases within the immediate area.	Battery storage and disposal procedures	OPS	☑	☑	No				It was considered that a fire within hazardous waste storage areas would be contained to the area, and limited by the combustible material available and would not escalate to other areas of the site.
			Spare battery modules kept at a low state of charge	OPS							
			Battery recycling strategy	OPS							
			Site drainage system and containment systems	DES							
			Firefighting infrastructure	DES							
			Emergency site access	DES							
			Site layout and separation	DES							
			Operational Emergency Management Plan	OPS							
6. Exposure to electrical hazards	Electrical failures, mechanical damage, or overheating caused by: - Faulty equipment - Incorrect installation - Incorrect maintenance - BMS / control system failure - Battery casing / enclosure damage - Water ingress into electrical infrastructure.	- Arc flash/bursts resulting in fire - Electrocution.	Earthing design	DES	☑	☐	No				
			Preventative maintenance	OPS							
			Containerised battery design	OEM							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
			Site induction and training (i.e. high voltage areas)	OPS							
			Warning signs (electrical hazards, arc flash)	OPS							
7. Transformer fault	Faults in transformers or switchgear, such as electrical failures, mechanical damage, overheating.	Transformer explosion/fire causing injury/fatality to a person on-site.	Transformer bund	DES	☑	☐	No				
			Power conversion equipment cooling system	DES							
			Preventative maintenance	OPS							
			Electrical equipment monitoring	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
8. Loss of insulating oil in transformers	Loss of transformer insulating oil or moisture ingress into transformer oil result in arcing, high voltage hazards and transformer fire. Potential causes include: - Maintenance errors - Failure of fittings / seals, corrosion.	- Electrocution - Transformer explosion/fire causing injury/fatality to a person on-site.	Transformer bund	DES	☑	☐	No				
			Preventative maintenance	OPS							
			Electrical equipment monitoring	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
9. Exposure to extremely low frequency electric and magnetic fields (ELF EMF)	Normal operation of energised high-voltage electrical infrastructure.	High level exposure of EMF to on-site personnel may affect function of the nervous system.	Exposure to personnel is short duration in nature	OPS	☑	☐	No				Adverse health effects from ELF EMF have not been established based on findings of reviews conducted by credible authorities.
10. Loss of containment of firefighting run-off water	Response to a fire	Firefighting run-off water contains toxic firefighting chemicals, which could run off into ground soil or nearby waterways (i.e. Charles Creek).	Site drainage system and containment systems	DES	☐	☑	Yes	Rare	Moderate	Low	Residual Risk was evaluated based on off-site Environmental consequences. Due to the volume of water used in fighting battery fires, considerable dilution of firefighting chemicals would occur.
11. Spill of dangerous goods	A spill of dangerous goods may be caused by: - Impact from vehicles, dropped objects, or plant movement during operations or maintenance	- Localised on-site health and safety (e.g. chemical exposure) - Localised on-site environmental impacts	Procedures for storage and handling of dangerous goods	OPS	☑	☑	No				Operations and maintenance activities may involve the use of minor quantities of flammable solvents, transformer oil etc.
			Preventative maintenance	OPS							
			Spill kits	DES							

Hazardous Event	Cause	Consequence	Controls	Type	Consequence Category		Off-Site Impact?	Off-Site Residual Risk			Comment
					H&S	Env.		L	S	RR	
	- Improper operations and maintenance, including overfilling.		Site layout and separation	DES							Appropriate storage and handling of firefighting chemicals will be considered as per the FSS.
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
12. Erosion	Erosion could occur during the construction phase of the Project.	Contaminated water run off into nearby waterways (i.e. Charles Creek).	The Project area is a flat landform	DES	☐	☑	Yes	Rare	Moderate	Low	Residual Risk was evaluated based on off-site Environmental consequences.
			Construction Environment Management Plan	OPS							
			Site drainage system and containment systems	DES							The Natural Hazard Risk Assessment has identified the unmitigated likelihood of erosion as 'Moderate' and the overall risk of erosion as Low due to the flat nature of the land.
13. Loss of auxiliary power	A loss of auxiliary power to the battery units may result in shutdown of the thermal monitoring and cooling systems.	Thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site due to heat radiation and/or toxic exposure - On-site environmental impacts from toxic combustion by-product deposition. - Minor health impacts to off-site receptors from smoke inhalation.	Uninterruptible power supply	DES	☑	☑	Yes	Unlikely	Minor	Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Explosion prevention	OEM							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			Operational Emergency Management Plan	OPS							
14. External response to emergency	Emergency responders entering the Project area when responding to a fire or thermal runaway event.	There is the potential for injury from exposure to: - Radiant heat, smoke and toxic combustion by-products - Live electrical infrastructure.	Emergency site access	DES	☑	☐	Yes	Rare	Major	Medium	Residual Risk was evaluated based on Health & Safety consequences to emergency responders.
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
15. Aurumfield substation electrical fault	An electrical fault at the Aurumfield substation.	No consequences of concern within the Project were identified. There is potential for operational disruptions or grid connection issues.	Electrical isolation via transformers, inverters, and protection systems	DES	☐	☐	No				
			Electrical equipment monitoring	OPS							
16. HV powerline arcing / flashover	An arcing / flashover event may be caused by: - Degradation or contamination of insulators - Transient overvoltage events - Elevated temperatures.	Electrical arcing/flashover causing a fire within the Project area. There is potential for injury to onsite personnel impacted by heat radiation.	Powerline design	DES	☑	☐	No				
			Asset protection zones	DES							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
17. HV powerline failure	A structural failure of a transmission tower or sagging of the conductors may be caused by ageing or faulty equipment or on-site vehicle impact.	Injury/fatality to person on site due to impact or exposure to live electrical equipment. Impact to battery units causing battery thermal runaway, fire/explosion and release of smoke and toxic gases impacting off-site personnel and the environment.	Powerline design	DES	☑	☑	Yes	Rare	Minor	Very Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			Explosion prevention	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			Site layout and separation	DES							
			Asset protection zones	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
18. Aircraft crash	An aerodrome is located approximately 3 km from the Project location and is used to transport personnel to and from the Kidston Clean Energy Hub, as well as for occasional private aircraft operations. An aircraft impact could result in physical damage to Project infrastructure, including battery units, with the potential to initiate a thermal runaway event.	Thermal runaway, fire/explosion and release of toxic gases leading to: - Minor, short-term injury to off-site receptors from smoke inhalation - On-site environmental impacts from toxic combustion by-product deposition.	Emergency site access	DES	☑	☑	Yes	Rare	Minor	Very Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).

Hazardous Event	Cause	Consequence	Controls	Type	Consequence Category		Off-Site Impact?	Off-Site Residual Risk			Comment
					H&S	Env.		L	S	RR	
19. Vehicle impact	A vehicle collision could physically damage equipment, including the battery units. The adjacent Gilberton Road is expected to experience a low level of daily traffic. Any vehicle impact is likely to be from on-site personnel at low speeds.	A vehicle impacting the battery units may cause thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site - Minor, short-term injury to off-site receptors from smoke inhalation - On-site environmental impacts from toxic combustion by-product deposition.	Site traffic management	OPS	☑	☑	Yes	Unlikely	Minor	Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Containerised battery design	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation).
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
20. Tampering	Intentional tampering, such as theft or sabotage, could damage battery modules or inverters/transformers.	- Electrocution - Transformer explosion/fire. - Battery thermal runaway, fire/explosion and release of smoke and toxic vapours impacting off-site personnel and the environment.	Site security measures	OPS	☑	☑	Yes	Rare	Minor	Very Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Containerised battery design	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
21. Damage from wildlife	Wildlife may damage equipment (e.g. gnawing cables, depositing foreign objects inside equipment, shorting equipment).	- Electrocution - Transformer explosion/fire. - Battery thermal runaway, fire/explosion and release of smoke and toxic vapours impacting off-site personnel and the environment.	Containerised battery design	OEM	☑	☑	Yes	Rare	Minor	Very Low	Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Preventative maintenance	OPS							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
22. High ambient temperature	Excessive ambient heat (e.g. heat waves) could potentially lead to overheating of the battery cells.	Thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site due to heat radiation and/or toxic exposure - On-site environmental impacts from toxic combustion by-product deposition. - Minor health impacts to off-site receptors from smoke inhalation.	Preventative maintenance	OPS	☑	☑	Yes	Rare	Minor	Very Low	The closest Bureau of Meteorology weather station with long-term, recent data is the Georgetown Post Office. More than 30 years of records are available, with a maximum recorded temperature of 43.5°C
			Battery management system	OEM							Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Thermal management system	OEM							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation)
			Smoke, heat and flammable gas detection	OEM							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							

Hazardous Event	Cause	Consequence	Controls	Type	Consequence Category		Off-Site Impact?	Off-Site Residual Risk			Comment
					H&S	Env.		L	S	RR	
											and excludes impacts to intruders.
23. Low ambient temperature	Operation of battery cells at cell temperatures below 0°C could lead to degradation of the cell chemistry, potentially leading to thermal runaway reaction.	Thermal runaway, fire/explosion and release of toxic gases leading to: - Injury/fatality to personnel on site due to heat radiation and/or toxic exposure - On-site environmental impacts from toxic combustion by-product deposition. - Minor health impacts to off-site receptors from smoke inhalation.	Preventative maintenance	OPS	☑	☑	Yes	Rare	Minor	Very Low	The closest Bureau of Meteorology weather station with long-term, recent data is the Georgetown Post Office. More than 30 years of records are available, with a minimum recorded temperature of 0.3°C.
			Battery management system	OEM							
			Thermal management system	OEM							
			Smoke, heat and flammable gas detection	OEM							
			Explosion prevention	OEM							Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			SCADA and operator response	OPS							
			Site layout and separation	DES							
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
24. Lightning strike	Queensland as a state experiences frequent episodes of severe storm events which generate hazardous conditions such as lightning. A lightning strike within the Project area could result in electrical overload, initiating a fire event involving the batteries or the electrical equipment.	- Electrocution - Transformer explosion/fire. - Battery thermal runaway, fire/explosion and release of smoke toxic vapours impacting off-site personnel and the environment.	Lightning protection system	DES	☑	☑	Yes	Possible	Minor	Medium	The Natural Hazard Risk Assessment has identified the unmitigated likelihood of a storm event as 'Almost Certain'.
			Transformer bund	DES							
			Battery management system	OEM							
			Thermal management system	OEM							Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Smoke, heat and flammable gas detection	OEM							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
25. Bushfire	The Project is located within areas of Potential Impact Buffer and next to Medium Potential Bushfire Intensity. A bushfire in the vicinity may result in exposure of the battery units or electrical equipment to high levels of radiant heat, leading to runaway thermal reaction.	- Transformer explosion/fire - Battery thermal runaway, fire/explosion and release of smoke and toxic vapours impacting off-site personnel and the environment.	Asset protection zones	DES	☑	☑	Yes	Possible	Minor	Medium	The Natural Hazard Risk Assessment has identified the unmitigated likelihood of a bushfire event as 'Likely'.
			Battery management system	OEM							
			Thermal management system	OEM							
			Emergency site access	DES							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
26. Flooding	The Project area is directly adjacent to a Level 1 Flood Hazard Prone Area, and the broader area has a documented history of flooding events. Flooding on site may result in exposure of the battery units / transformers to water ingress, resulting in internal shorts.	- Electrocution - Transformer explosion/fire. - Battery thermal runaway, fire/explosion and release of smoke and toxic vapours impacting off-site personnel and the environment.	Containerised battery design	OEM	☑	☑	Yes	Unlikely	Minor	Low	A flood may also interfere with the grid connection to the Project (e.g. down power lines).
			Site drainage system and containment systems	DES							
			Thermal management system - humidity control	OEM							The Natural Hazard Risk Assessment has identified the unmitigated likelihood of a flood event as 'Moderate'.
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
27. Cyclone	Kidston is indirectly influenced by tropical cyclone activity and is subject to severe storm events, which are identified as a significant regional hazard.	- Electrocution - Transformer explosion/fire. - Battery thermal runaway, fire/explosion and release of smoke and toxic vapours impacting off-	Plant design for wind	DES	☑	☑	Yes	Rare	Minor	Very Low	The Natural Hazard Risk Assessment has identified the unmitigated likelihood of a cyclone event as 'Very Unlikely'.
			Containerised battery design	OEM							

Hazardous Event	Cause	Consequence	Controls	Type	Consequence Category		Off-Site Impact?	Off-Site Residual Risk			Comment
					H&S	Env.		L	S	RR	
	Heavy winds, intense rainfall and rapid-onset flooding during a cyclone could physically damage the battery units. Water ingress in the battery units or electrical equipment may result in internal shorts.	site personnel and the environment.	Thermal management system - humidity control	OEM							Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Site drainage system and containment systems	DES							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
28. Storm	The Project location is particularly influenced by severe storm systems which are the most frequent natural hazard in Queensland. Thunderstorms have the potential to generate hazardous conditions including destructive winds, large hail, and dangerous lightning. A storm event may lead to physical damage or water ingress in the battery units or electrical equipment, resulting in internal shorts.	- Electrocution - Transformer explosion/fire. - Battery thermal runaway, fire/explosion and release of smoke and toxic vapours impacting off-site personnel and the environment.	Plant design for wind	DES	☑	☑	Yes	Possible	Minor	Medium	The Natural Hazard Risk Assessment has identified the unmitigated likelihood of a storm event as 'Almost Certain'.
			Containerised battery design	OEM							
			Thermal management system - humidity control	OEM							Fire and explosion impacts would be limited to within the Project boundary such that heat radiation would not impact off-site personnel or propagate to surrounding vegetation.
			Site drainage system and containment systems	DES							
			SCADA and operator response	OPS							
			Explosion prevention	OEM							
			Site layout and separation	DES							Residual Risk was evaluated based on off-site Health & Safety consequences (smoke inhalation) and excludes impacts to intruders.
			Emergency site access	DES							
			Firefighting infrastructure	DES							
			Operational Emergency Management Plan	OPS							
29. Earthquake	An earthquake could mechanically impact the battery units or adjacent plant (e.g. power lines). The Project is located in a Low earthquake risk area.	Considering the proposed layout and equipment type (i.e. no major structures). No major consequence events were identified as a result of an earthquake. Failure of the HV powerlines is considered in "HV powerline failure".	Plant design for earthquake	DES	☐	☐	No				

APPENDIX B: BATTERY UNIT FIRE MODEL

B.1 INTRODUCTION

LSFT data provided for Fluence's standard Grid Stack Pro 5000 V1E AESC 530Ah battery unit was used to build and calibrate an empirical fire model ("the fire model") to represent a battery unit on fire.

The fire model was first calibrated against the LSFT, which was conducted under no-wind conditions (i.e. 0 m/s wind speed). Following satisfactory calibration, site-specific wind conditions were applied to the model to account for flame tilt to better represent on-site fire behaviour. The resulting model results were then used to determine the distances at which key heat flux criteria are met, such as heat radiation impact distances to emergency responders and the minimum separation distances between battery units on site to prevent fire propagation.

The methodology used to develop the fire model is discussed in the following sections, along with the definition of the propagation criterion used to determine the separation distances between battery units.

B.2 LSFT CONFIGURATION OVERVIEW

In the LSFT, an entire battery unit ("the initiating unit") was ignited using a direct flame to represent a battery unit fire. Three adjacent units (target units 1, 2 and 3) were positioned around the initiating unit, as shown in Figure B.1. Heat flux gauges (HF1 to HF10) were installed on the target units to measure the heat flux received at defined separation distances from the initiating unit, to assess the potential for propagation.

The flame from the initiating unit emerges from the top of the container. Heat flux gauges installed at 1.5 m above ground level are partially shielded by the container walls and therefore do not fully capture radiation from the exposed flame. Accordingly, heat flux measurements from gauges positioned at the height of the target units (i.e. HF1, HF3, HF7 and HF9 as shown in Figure B.1) were adopted for model development, as these provide direct exposure to the visible, unshielded flame.

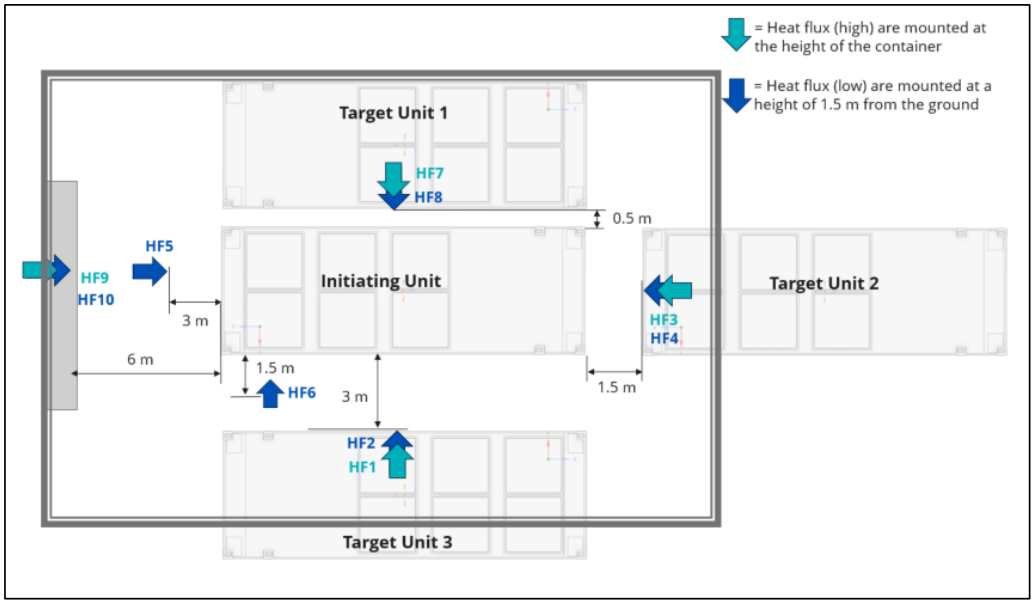


Figure B.1: LSFT Battery Unit and Heat Flux Gauge Configuration

B.3 LSFT HEAT FLUX DATA REVIEW

Heat flux measurements were recorded for the full duration of the LSFT. However, for model calibration, only data from the peak flaming period (i.e. approximately the first hour of significant flaming) were used. This heat flux data was averaged over the time period during which peak flaming was observed, to account for fluctuations owing to the nature of the fire.

The time-averaged heat flux values from this period and the corresponding separation distances from the initiating unit to the target units are summarised in Table B.1 and graphically presented in Figure B.2.

Table B.1: Heat Flux Data

Gauge ID	Time-averaged Heat Flux (kW/m^2)	LSFT Distance from Flame Edge (m)
HF7	56	0.5
HF1	29	3.0
HF3	21.5	4.5
HF9	9.5	6.0

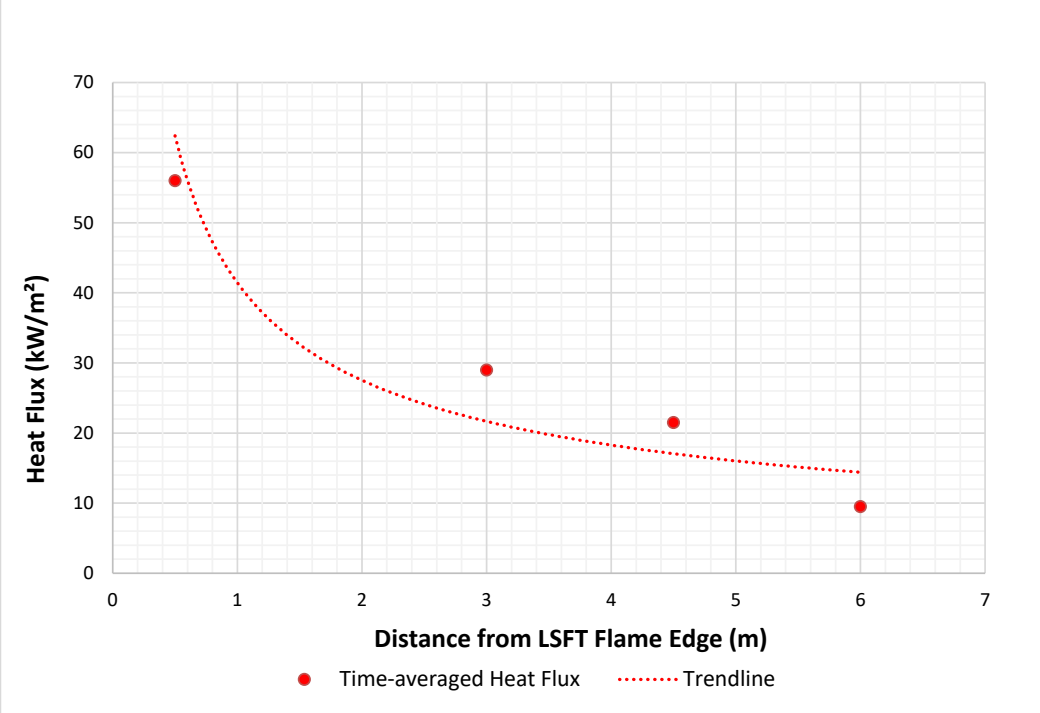


Figure B.2: LSFT Radiation Curve

B.4 DEVELOPMENT OF THE FIRE MODEL

The LSFT was conducted under no-wind conditions (0 m/s). A fire model was developed and calibrated against LSFT heat flux and distance data to ensure that the thermal radiation outputs are representative of observed behaviour in the LSFT.

A rectangular radiating surface model was used to represent the fire in the initiating unit, with heat radiation distances measured from the edge of the fire area (as illustrated in Figure B.3).

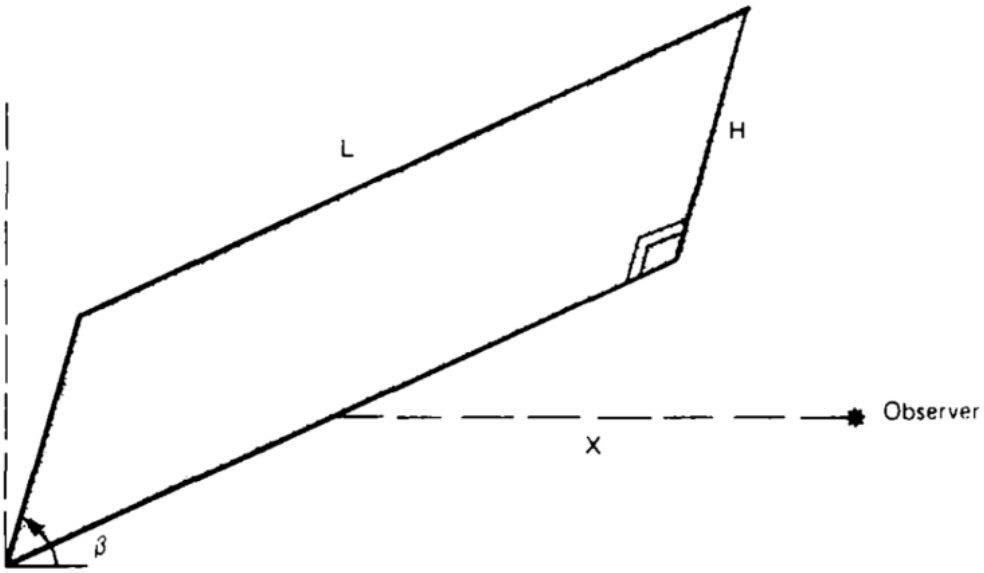


Figure B.3: Battery Unit Fire Flame Geometry – Cross-section View [1]

B.4.1 Model Parameters

The key model parameters used in developing the rectangular radiating surface model are:

- Surface emissive power (SEP)
- Heat release rate (HRR)
- Radiating flame surface area
- Flame tilt.

The model inputs were derived from LSFT observations, container geometry, and reported HRR. Equation 1 was used to estimate the SEP, i.e. the total thermal radiation energy emitted by a surface in all directions per unit area per unit time. A radiative fraction of 0.33 was adopted, based on large-scale lithium-ion battery fire testing studies of module and rack-level fire behaviour [2].

The calibrated model parameters are summarised in Table B.2.

Equation 1

$$E'' = \frac{X_r \times \dot{Q}}{A}$$

where:
E'' = *SEP (kW/m²),*
Xr = *radiative fraction (not all HRR is radiated)*
Q̇ = *HRR (kW)*
A = *effective radiating flame surface area (m²)*

Table B.2: Calibrated Fire Model Parameters

Parameter	Value	Basis
Flame height	3.0 m	Approximated from LSFT flame observations
Flame length	2.95 m	Approximated from the LSFT deflagration panel geometry observations

Parameter	Value	Basis
Flame width	1.20 m	Approximated from LSFT flame observations
Flame surface area	24.9 m²	Estimated from the observed height, length and wind
Flame tilt	0°	LSFT conducted at 0 m/s, hence no tilt
Radiative Fraction X_r	0.33	Literature concerning large-scale lithium-ion battery fire testing [2]
HRR	12,000 kW	LSFT data
SEP	158.9 kW/m²	Derived from HRR using Equation 1

B.4.2 Model Results

The distances at which the time-averaged heat flux is received in the LSFT heat flux gauges were compared to those predicted by the model. In doing so, heat flux gauge (HF7) was observed to exhibit a systematic deviation from the expected radiative decay trend at the recorded heat flux of 56 kW/m². To align this deviation to the model, a 1 m adjustment was applied to the effective source-to-gauge distance in the LSFT data, acknowledging that the flame footprint is not perfectly rectangular and may be set back from the container boundary.

Results with the adjustment applied are presented in Table B.3, with a radiation curve comparison presented graphically in Figure B.4. The comparison demonstrates that the model provides a reasonable representation of the LSFT fire behaviour, with predicted radiation distances generally aligning with measured values. This level of agreement is considered appropriate for subsequent assessment (i.e. to assess the effects of wind and the resulting tilted flame).

Table B.3: Measured vs Modelled Heat Flux Distances

Gauge ID	Time-averaged Heat Flux (kW/m²)	LSFT Distance from Flame Edge (m)	Predicted Model Distance from Fire Area (m)
HF7	56	1.5*	1.7
HF1	29	3.0	3.0
HF3	21.5	4.5	3.7
HF9	9.5	6.0	6.0

*Includes a 1 m adjustment to the source-to-gauge distance, accounting for deviation from typical radiative decay.

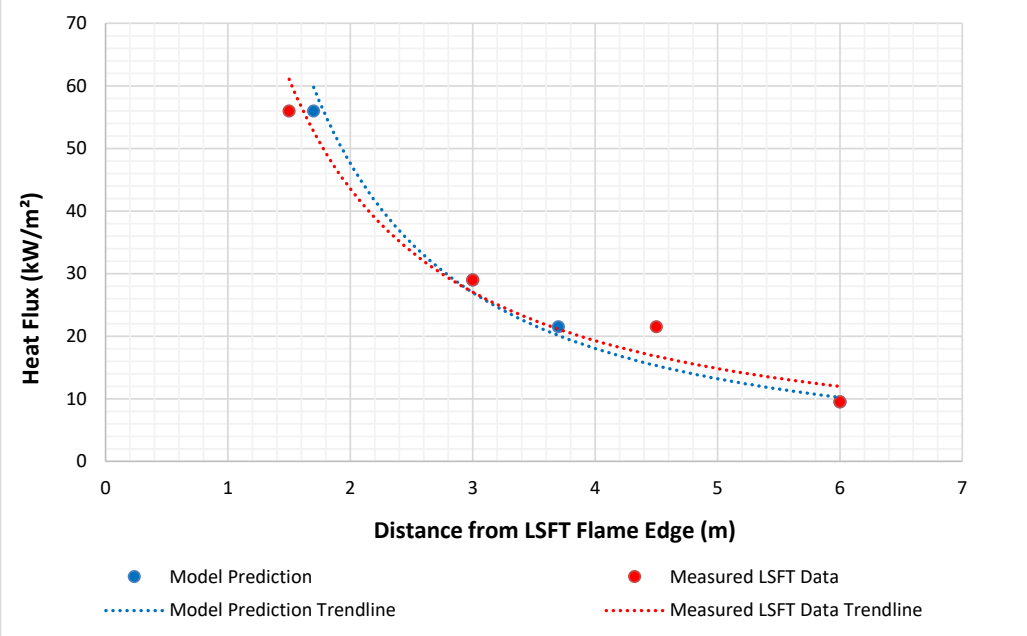


Figure B.4: Measured LSFT vs Model Prediction Radiation Curve – Adjusted

B.5 ADDITION OF WEATHER EFFECTS TO THE MODEL

The fire model was calibrated under no-wind conditions. To account for wind impacts, site-specific weather conditions were applied to the model. The weather data presented in Section 8.3.2 were used. The higher daytime wind speed was adopted for the model, as higher wind speeds increase the flame tilt in the downwind direction, pushing the flame closer to the adjacent battery units. The model parameters with wind added, and the corresponding results, are presented in the following sections.

This fire model with wind effects added was used to determine separation distances between battery units to prevent fire propagation.

B.5.1 Model Parameters

The model parameters are summarised in Table B.4.

Table B.4: Calibrated Fire Model Parameters with Wind Effects

Parameter	Value	Basis
Flame height	2.22 m	LSFT observations adjusted to account for wind based on established empirical fire models.
Flame tilt	60.5°	
SEP	158.9 kW/m^2	Derived from the calibrated model (with no wind).

B.5.2 Model Results

Table B.5 presents the updated comparison between the downwind heat flux distances predicted by the model with site-specific wind effects included and the measured heat flux from the LSFT.

Table B.5: Comparison of Measured (LSFT) vs Modelled Heat Flux Distances with Wind Included

Gauge ID	Time-averaged Heat Flux (kW/m^2)	LSFT Distance from Flame Edge (m)	Predicted Model Distance from Fire Area (m) with Wind Effects (Downwind)
HF7	56	1.5*	3.7
HF1	29	3.0	4.6
HF3	21.5	4.5	5.0
HF9	9.5	6.0	6.5

*Includes a 1 m adjustment to the source-to-gauge distance, accounting for deviation from typical radiative decay.

B.6 PROPAGATION CRITERION FOR SEPARATION DISTANCE DETERMINATION

A propagation criterion was defined to determine the required separation distance between battery units. For this assessment, propagation was assumed to occur when thermal exposure from a fire in the initiating battery unit is sufficient to compromise the structural integrity of the adjacent steel container. If container integrity is lost, the internal battery cells, which would otherwise be shielded from external radiation, may be exposed to direct flame and high heat flux. In these circumstances, sufficient heat transfer could reasonably be expected to raise cell temperatures to the thermal runaway initiation threshold.

Conversely, where container integrity was maintained, LSFT results indicated that whilst external wall and module temperatures of target units increased significantly, internal cell temperatures remained relatively low. This condition provides a clear margin to the thermal runaway initiation threshold.

A steel temperature range of approximately 600–700°C was adopted as the critical threshold for significant strength degradation [3] which could lead to a loss of container integrity. Using a radiative heat transfer relationship between temperature and heat flux, this corresponded to an incident heat flux of approximately 60 kW/m^2 sustained for at least 20–30 minutes. This adopted time range is shorter than would be expected for an actual battery unit fire, where flaming may persist for considerably longer. However, LSFT data show that heat flux during a battery unit fire fluctuates throughout the flaming period rather than remaining constant for a prolonged time. On this basis, applying a constant heat flux over a shorter duration was considered a reasonable method for assessing the thermal exposure required to compromise container integrity.

The 60 kW/m^2 criterion was used to inform the separation distance between the battery units.

B.7 REFERENCES

1 Mudan, K.S., “Geometric View Factors for Thermal Radiation Hazard Assessment”, Fire Safety Journal, Vol. 12, 1987, Page 89–96.

2 Ditch, B. and Zeng, D., “Fire Hazard of Lithium-ion Battery Energy Storage Systems: 1. Module to Rack-scale Fire Tests”, Fire Technology, September 2020.

3 Science Insights, “When Heated, Steel Structural Members Tend to Elongate”, https://scienceinsights.org/when-heated-steel-structural-members-tend-to-elongate/, 22 May 2026.

APPENDIX C: CONSEQUENCE CONTOURS

This appendix presents the consequence contours for the following scenarios:

- Scenario 1a – Battery unit fire
- Scenario 1b – Battery unit toxic plume dispersion (HF only)
- Scenario 1c – Battery unit explosion
- Scenario 2a – Project Substation transformer fire.



Figure C.1: Scenario 1a – Battery Unit Fire

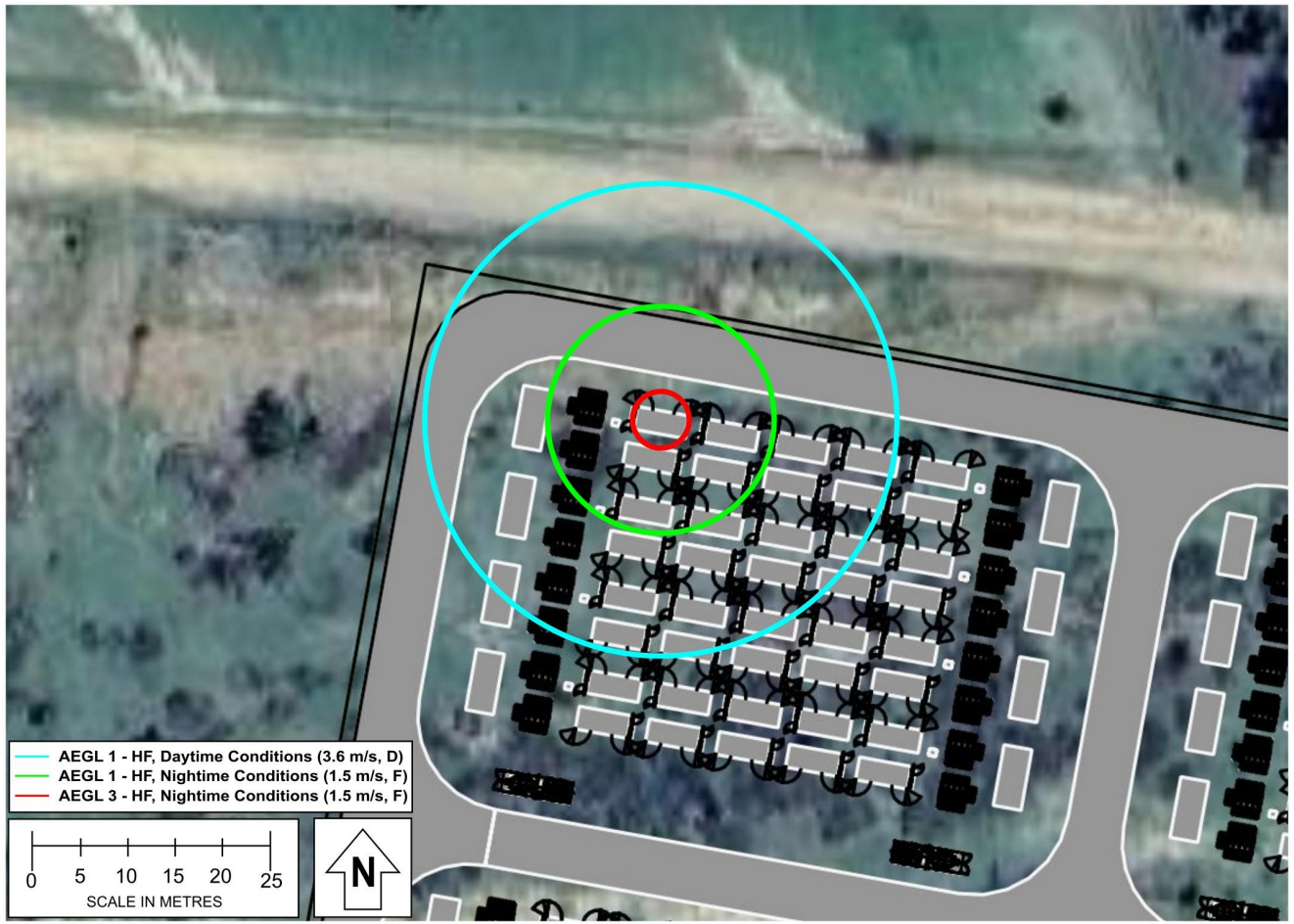


Figure C.2: Scenario 1b – Battery Unit Toxic Plume Dispersion (HF Only)

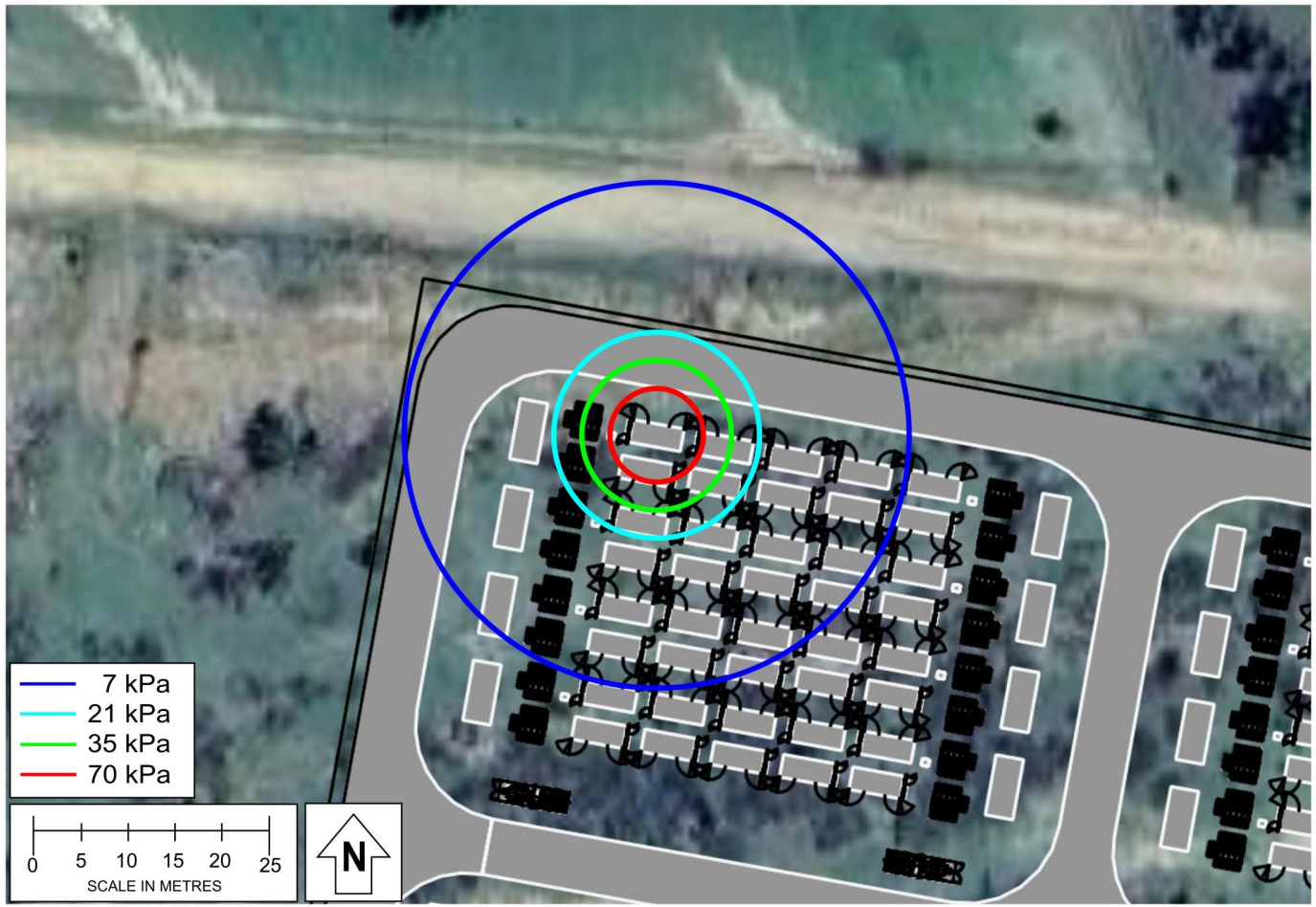


Figure C.3: Scenario 1c – Battery Unit Explosion

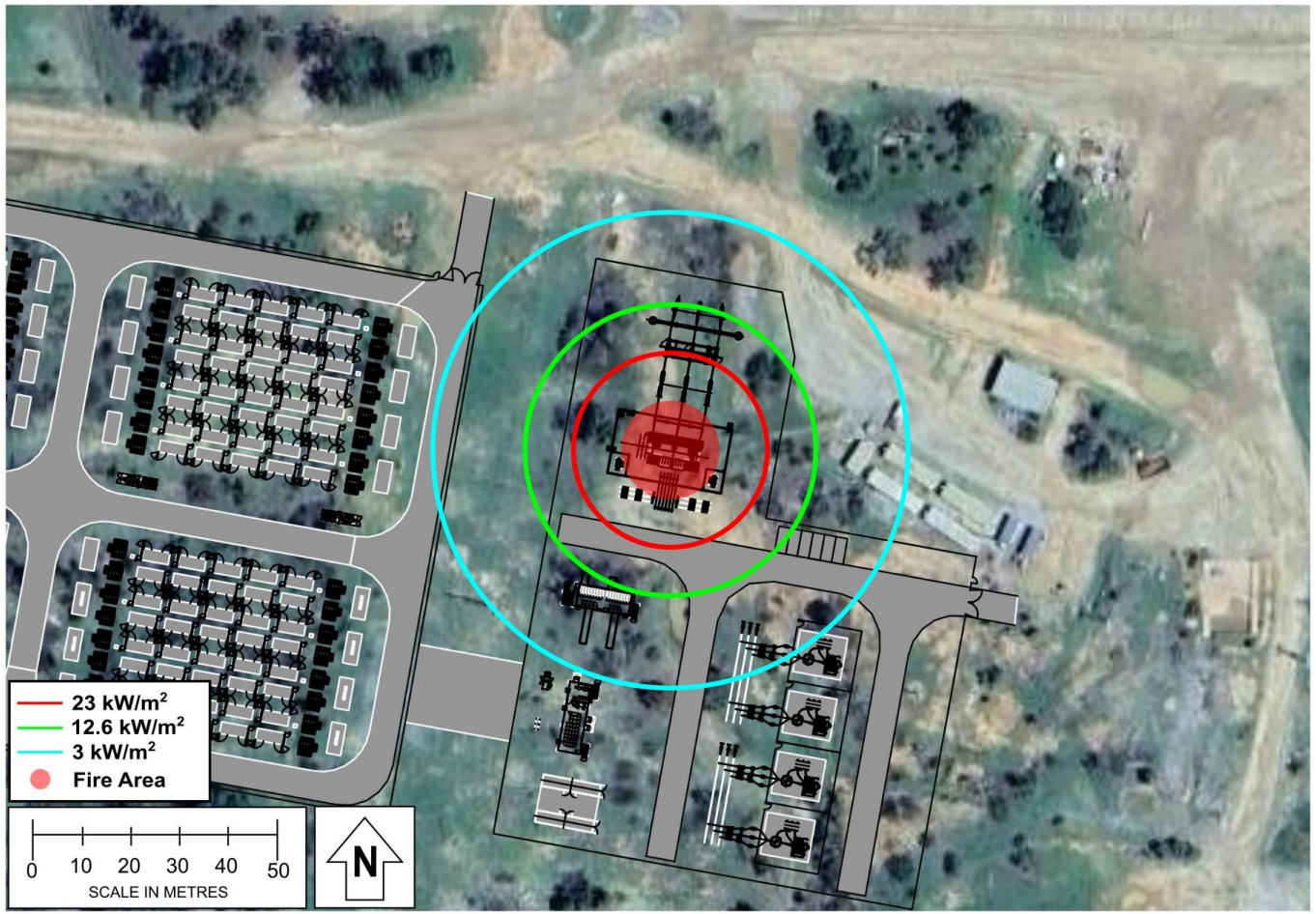
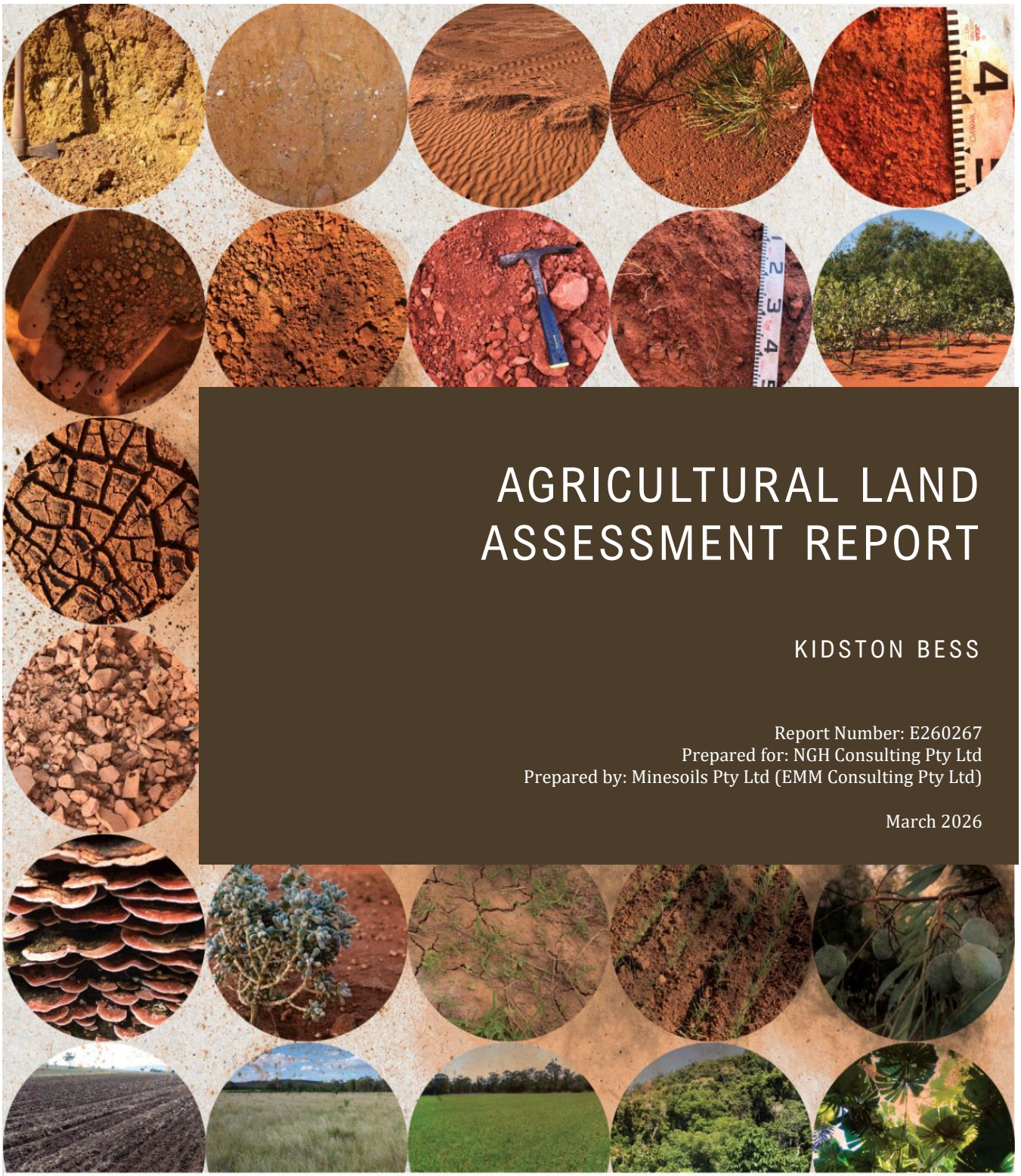


Figure C.4: Scenario 2a – Project Substation Transformer Fire

Appendix I Agricultural Land Assessment



AGRICULTURAL LAND ASSESSMENT REPORT

KIDSTON BESS

Report Number: E260267
Prepared for: NGH Consulting Pty Ltd
Prepared by: Minesoils Pty Ltd (EMM Consulting Pty Ltd)

March 2026

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DOCUMENT CONTROL

Reference	Date	Prepared by	Approved
E260267_ Draft	9 February 2025	Matt Hemingway	Matt Hemingway
E260267_ Final	9 February 2025	Matt Hemingway	Matt Hemingway
E260267_ Final v2	11 February 2025	Matt Hemingway	Matt Hemingway

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1 OVERVIEW

1.1 INTRODUCTION

Minesoils Pty Ltd (Minesoils) was engaged by NGH Consulting Pty Ltd (NGH), on behalf of Genex Power Pty Ltd, to prepare an Agricultural Land Assessment Report for the Kidston BESS project (the Project), located in the Far North region of Queensland.

The purpose of this assessment is to support the lodgement of a development application.

1.2 THE PROJECT

The Project consists of a standalone Grid Forming BESS of up to approximately 250 Megawatt (MW)/1,000 Megawatt Hour (MWh), near the town of Kidston, near Einasleigh. It is proposed to be constructed in the northern section of the Kidston Solar Farm lot, directly adjacent to the Aurumfield Substation and will connect from a private project substation into the Aurumfield Substation at 275 kilovolts (kV).

The Project is part of the Kidston Clean Energy Hub (Clean Energy Hub) which currently comprises the 50 MW Kidston Solar Project, operating since 2017, and the 250 MW / 2,000 MWh Kidston Pumped Storage Hydro Project (K2-Hydro), currently under construction. The Project will provide utility-scale energy storage to support the National Electricity Market (NEM) and enhance regional grid stability.

1.3 THE DISTURBANCE FOOTPRINT

The development is located on Lot 2 on Plan SP289310, within the northern section of the Kidston Solar Farm lot. The Project site consists of previously disturbed and cleared land associated with the historical Kidston gold mine and is co-located with existing and proposed renewable energy developments as mentioned above. Specifically, the BESS will be located on the decommissioned South Pond area of the Processing Facility that was part of the Kidston Gold Mine.

The development footprint covers an area of 3 ha as shown on **Figure 1**.

The development footprint has not recently been utilised for agricultural practices and is not considered agricultural land.

1.4 SCOPE OF WORKS

Minesoils' scope of works is to assess the Project against the following Queensland State Code 27 performance outcomes in accordance with the State Code 27: Battery storage facility development planning guideline (the Guideline).

PO9 Development is located and designed to ensure there is no unacceptable loss of high-quality agricultural land.

P10 Development does not fragment high-quality agricultural land in a way that restricts connectivity of agricultural land necessary to ensure its ongoing productivity and operation.

P11 Development is constructed to maintain the fertility and soil attributes of high-quality agricultural land and to enable decommissioning at the end of operations to return the land to pre-construction agricultural land productive value.

P12 Development on or adjacent to the stock route network maintains its operational efficiency and ongoing integrity and function.

1.5 ASSESSMENT APPROACH

In accordance with the supporting actions to address P09 -P12 outlined in the Guideline, the Minesoils assessment approach consists of the preparation an Agricultural Land Assessment (ALA) report based on a desktop review of available information that demonstrates the proposal does not result in a significant loss of high-quality agricultural land.

'No unacceptable loss' is contextualised in the Guideline as from the perspective of the degree of impact on the agricultural productivity and prosperity of the local government area and surrounding region.

If the amount of hectares of impacted high-quality agricultural land is believed to constitute 'no unacceptable loss,' a short ALA report is prepared supporting this conclusion as evidence of compliance with PO9 – P12.

High quality agricultural land means strategic cropping land (SCL), and priority agricultural areas, or Agricultural Land Classification (ALC) Class A and Class B land identified on the State Planning Policy SPP interactive mapping system, Development assessment mapping system (DAMs) or local planning instruments.

As described in Section 2, there is no high quality agricultural land within the development footprint or its surrounds. As a result, this ALA report confirms the following, as per the requirements of the Guideline:

- The site does not contain high-quality agricultural land values (as defined in State code 27 of SDAP) and therefore:
  - there is no unacceptable loss of high-quality agricultural land
  - the Project does not fragment high-quality agricultural land in a way that restricts connectivity of agricultural land necessary to ensure its ongoing productivity and operation
  - there is no requirement for the Project to be constructed in a way that maintains the fertility and soil attributes of high-quality agricultural land and to enable decommissioning at the end of operations to return the land to pre-construction agricultural land productive value.
- There are no impacts to the operational efficiency and ongoing integrity and function of the stock route network.


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Gilberton Road
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4PY15
4PY15
1SP304951
12SP345756
Vantor, © State of Queensland (Department of Resources) 2024, Esri, Geoscience Australia, NASA, NGA, USGS
Legend
Disturbance Footprint
Lot Boundary
Natural Watercourse
GDA2020 MGA Zone 55
MINESOILS
LAND & REHABILITATION SPECIALISTS
0 50 100 200 300
Meters
Scale: 1:10,000 @ A4
Disturbance Footprint
FIGURE 1
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2 SITE CHARACTERISTICS

2.1 LANDSCAPE

The Project is situated within the Einasleigh Uplands Bioregion, which consists of a series of rugged hills and ranges, dissected plateaus and alluvial and sand plains (DCCEEW, 2009). The landscape surrounding the Project is characterised by open woodland vegetation, gently undulating terrain and low regional population density.

The development footprint location was selected to optimise use of existing cleared industrial land, minimise agricultural, environmental and social impacts, and leverage existing transmission and road infrastructure associated with the Hub.

2.2 LAND USE

The development site occupies the northern section of Lot 12 on Plan SP345756, within the broader Kidston Clean Energy Hub on the historic Kidston Gold Mine site. The development footprint occupies vacant land that has been extensively disturbed by former mining and renewable energy construction activities and contains established infrastructure, including access roads, cleared benches and the existing Aurumfield Substation.

Based on satellite imagery (Geoscience Australia, 2025), it is determined that no agricultural activity has occurred within the last 40 years. Cattle grazing has been avoided to prevent conflict with the operations of the site.

No sensitive agricultural activities such as intensive plant or livestock agriculture have been identified within the immediate surrounds or broader locality.

2.3 AGRICULTURAL LAND CLASS MAPPING

Agricultural Land Classification (ALC) is a hierarchical scheme based on interpreted land evaluation information. It is used to assess the location and extent of agricultural land that can be used sustainably for a wide range of land uses, with minimal land degradation.

There are four classes (A, B, C and D). The classes imply a decreasing range of land use choice and an increase in the severity of land use limitations and/or land degradation hazard. Class A land has the greatest potential for producing the widest array of crops, while Class D land is unsuitable for any agricultural land use.

Class A land is suitable for a wide range of current and potential crops with nil to moderate limitations to production.

Class B land is suitable for a narrow range of crops. The land is suitable for sown pastures and may be suitable for a wider range of crops with changes to knowledge, economics or technology.

Class C land is suitable only for improved or native pastures due to limitations that preclude continuous cultivation for crop production. Some areas may tolerate a short period of ground disturbance for pasture establishment.

The development footprint and surrounds is dominated by ALC C, with the nearest ALC class A or B land located approximately 17 kilometres (km) to the east, as shown on **Figure 2**.

2.4 STRATEGIC CROPPING LAND TRIGGER MAPPING

Strategic cropping land (SCL) is land that is, or is likely to be, highly suitable for cropping because of a combination of the land's soil, climate and landscape features. Regional level mapping of SCL aims to represent Queensland's best agricultural land, which is protected under state legislation to prevent permanent damage from activities like mining and urban development. This land meets specific mapping and assessment criteria, making it essential for the state's agribusiness and requiring developers to avoid or minimize impacts on it.

There is no trigger mapped SCL over the development footprint, its surrounds or wider locality. The nearest trigger mapped SCL land is located approximately 120 km to the north east, as shown on **Figure 3**.

2.5 PRIORITY AGRICULTURAL AREAS

Priority Agricultural Areas (PAAs) are strategic clusters of the most regionally significant agricultural production areas that contain various priority agricultural land uses. These uses include broadacre cropping, horticulture, intensive animal husbandry, plantation forestry and terrestrial aquaculture. Any non-agricultural use or resource activity seeking to operate in these areas will not be supported unless they can co-exist for mutual benefit and without compromising current or future ability to operate. PAAs are defined terms under the RPI Act. They identify geographic areas with specific values for the purposes of both the RPI Act and the Planning Act to achieve a consistent planning outcome.

There are no PAAs mapped within the Development Area, its immediate surrounds, or the wider locality. The nearest PAA is approximately 180 km to the east, as shown on **Figure 4**.

2.6 HIGH QUALITY AGRICULTURAL LAND

High quality agriculture land is defined in the QLD State Code 27 as SCL, and PAAs, or ALC Class A and Class B land identified on the SPP interactive mapping system, Development Assessment Mapping System (DAMs) or local planning instruments.

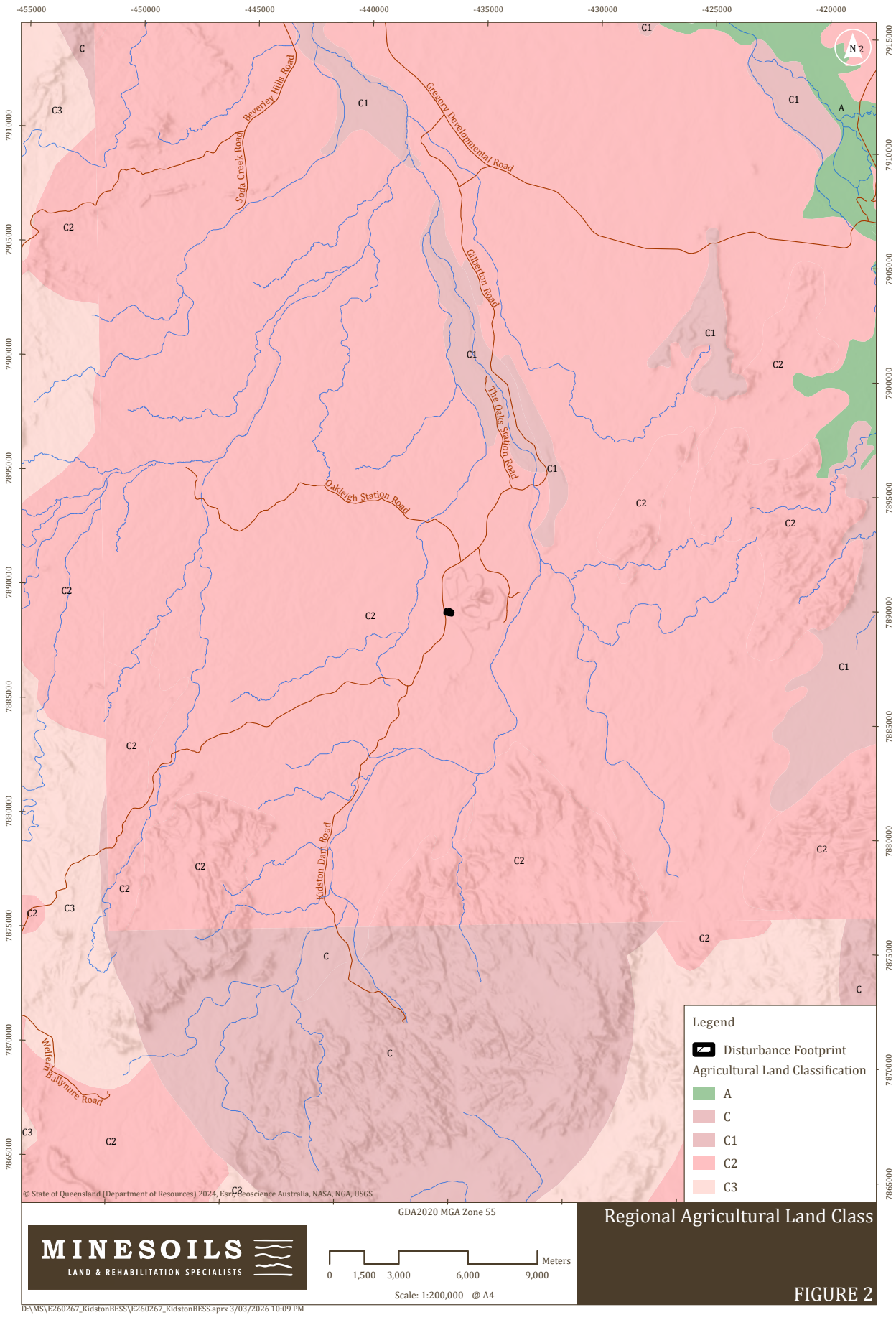
Therefore, based on the absence of regionally mapped ALC class A and B lands, trigger mapped SCL, and PAAs within the development footprint or its surrounds, as described in Sections 2.3 to 2.5, it is determined that there is no high quality agricultural land within the development footprint.

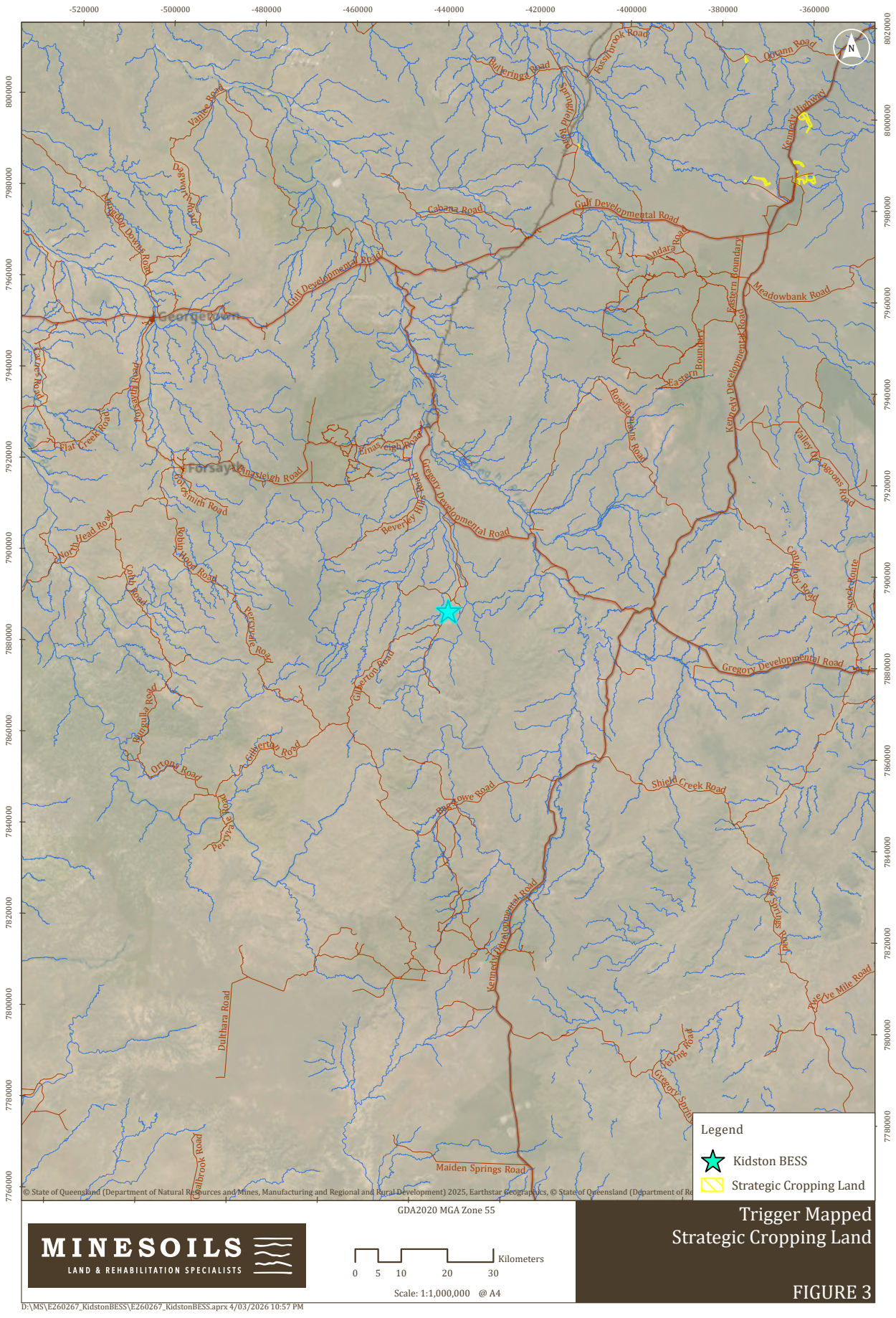
2.7 STOCK ROUTE NETWORK

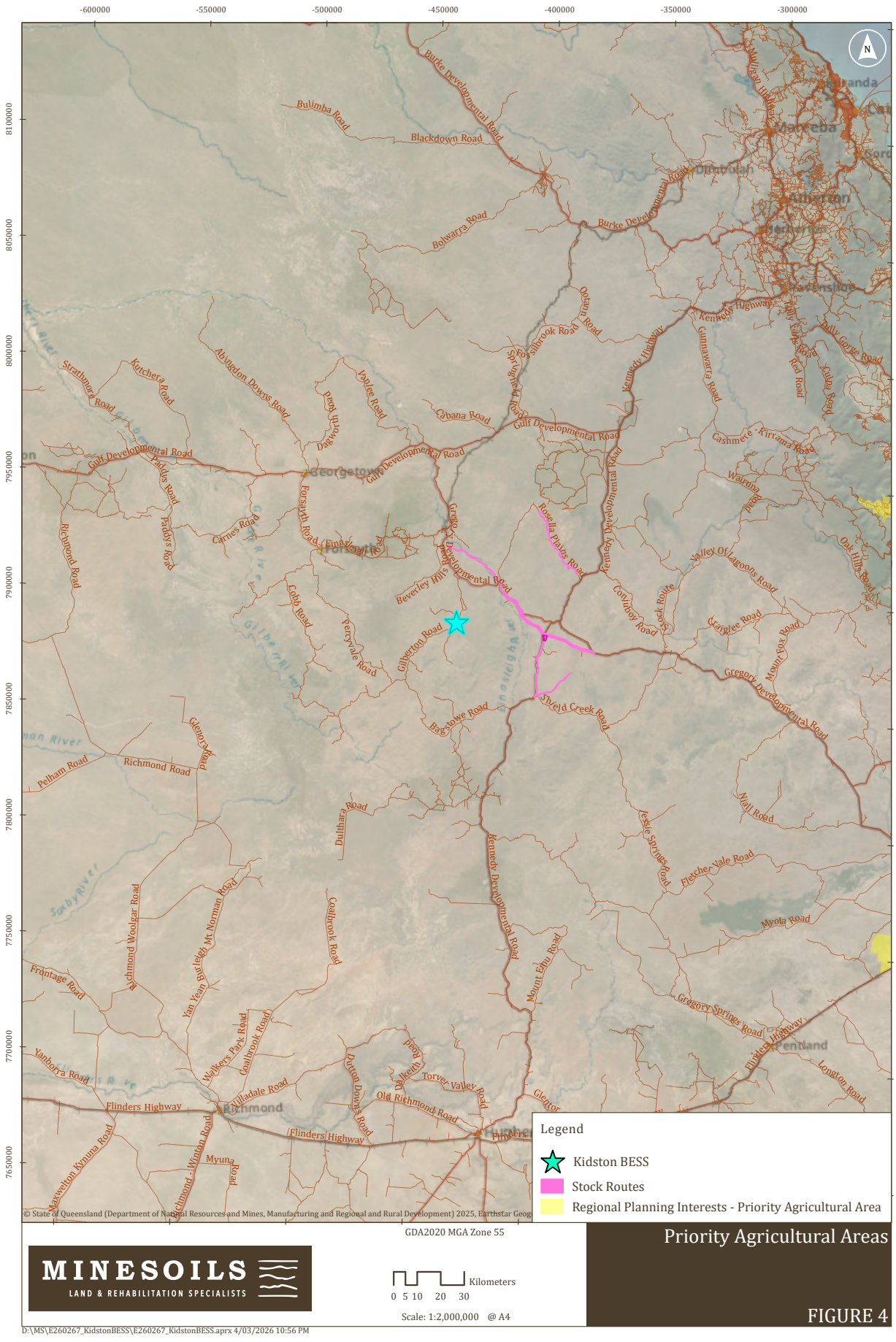
In Queensland, stock routes include 72,000km of roads, reserves, and corridors on pastoral leases and unallocated state land. Together with dedicated reserves for travelling stock, they make up the 2.6 million hectare Queensland stock route network.

The Queensland stock route network is vital infrastructure for the pastoral industry, supporting the movement of stock and providing pasture for emergency agistment.

The nearest stock route to Project is approximately 20 km to the east, as shown on **Figure 4**.


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N
Reverley Hills Road
Soda Creek Road
Gregory Developmental Road
Gilberton Road
The Oaks Station Road
Oakleigh Station Road
Kidston Dam Road
Welford Ballynure Road
C
C1
C2
C3
A
Legend
Disturbance Footprint
Agricultural Land Classification
A
C
C1
C2
C3
© State of Queensland (Department of Resources) 2024, Esri, Geoscience Australia, NASA, NGA, USGS
GDA2020 MGA Zone 55
MINESOILS
LAND & REHABILITATION SPECIALISTS
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Meters
Scale: 1:200,000 @ A4
Regional Agricultural Land Class
FIGURE 2
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Georgetown
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Vanstone Road
Dalwarra Road
Mingoola Downs Road
Gulf Developmental Road
Cabana Road
Bullwinga Road
Rossbrook Road
Ottaan Road
Kennedy Highway
Undara Road
Eastern Boundary
Meadowbank Road
Kennedy Developmental Road
Rosella Plains Road
Valley of Lagoons Road
Flat Creek Road
Forsayth Road
Einasleigh Road
Gregory Developmental Road
Beverley Hills Road
Goldsmith Road
Robin Hood Road
North Head Road
Percyvale Road
Gilberton Road
Ortona Road
Mingoola Road
Paeslowe Road
Shield Creek Road
Jessop Springs Road
Five Mile Road
Irving Road
Gregory Springs
Duthhara Road
Saltbrook Road
Maiden Springs Road
Stock Route
Connolly Road
Legend
Kidston BESS
Strategic Cropping Land
© State of Queensland (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development) 2025, Earthstar Geographics, © State of Queensland (Department of Re
GDA2020 MGA Zone 55
0 5 10 20 30
Kilometers
Scale: 1:1,000,000 @ A4
MINESOILS
LAND & REHABILITATION SPECIALISTS
Trigger Mapped
Strategic Cropping Land
FIGURE 3
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N
Burke Developmental Road
Bulimba Road
Blackdown Road
Bolwarra Road
Ootann Road
Kennedy Highway
Gunnawarra Road
Cashmere - Kirrama Road
Walrunga Road
Oak Hills Road
Valley Of Lagoons Road
Craiglee Road
Mount Fox Road
Gregory Developmental Road
Rosella Plains Road
Beverley Hills Road
Gilberton Road
Percyvale Road
Cobb Road
Forsyth Road
Finnegan Road
Carnes Road
Paddys Road
Richmond Road
Pelham Road
Glenroad
Ragstowe Road
Shield Creek Road
Dulthara Road
Kennedy Developmental Road
Jessie Springs Road
Neill Road
Fletcher Vale Road
Myola Road
Mount Emu Road
Gregory Springs Road
Flinders Highway
Pentland
Longton Road
Frontage Road
Richmond Woolgar Road
Van Vean Burleigh Mt Norman Road
Coalbrook Road
Walkers Park Road
Yanborra Road
Dutton Downs Road
Dalkeith Road
Torver Valley Road
Old Richmond Road
Gleneton
Hughenden
Villadale Road
Richmond
Maxwelton Kynuna Road
Richmond Winton Road
Myuna Road
Abingdon Downs Road
Kutchera Road
Strathmore Road
Vadlee Road
Dagwood Road
Cavana Road
Gulf Developmental Road
Georgetown
Forsythe Developmental Road
Torrens Creek
Mullaloon Highway
Mareeba
Dimbulah
Atherton
Herberton
Ravenshoe
Kennedy Highway
Tully Falls Road
Tully Gorge Road
Cobra Road
Red Road
Legend
Kidston BESS
Stock Routes
Regional Planning Interests - Priority Agricultural Area
© State of Queensland (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development) 2025, Earthstar Geog
GDA2020 MGA Zone 55
Kilometers
0 5 10 20 30
Scale: 1:2,000,000 @ A4
MINESOILS
LAND & REHABILITATION SPECIALISTS
Priority Agricultural Areas
FIGURE 4
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3 PERFORMANCE OUTCOME ASSESSMENT

The following assessment addresses the agriculture performance outcome codes relevant to the Project.

P09 *Development is located and designed to ensure there is no unacceptable loss of high-quality agricultural land.*

As demonstrated in Section 2.6, the Project does not occur on high quality agricultural land, as defined in the QLD State Code 27 as SCL, and PAAs, or ALC Class A and Class B land identified on the SPP interactive mapping system, DAMs or local planning instruments. Therefore, there will be no loss of high quality agricultural land.

P10 *Development does not fragment high-quality agricultural land to the extent of restricting the vital connectivity of agricultural land necessary to ensure its ongoing productivity and operation.*

The Project does not occur on, adjacent to, or nearby to high quality agricultural land. Therefore, the Project will not fragment high-quality agricultural land to the extent of restricting the vital connectivity of agricultural land necessary to ensure its ongoing productivity and operation.

P11 *Development is constructed to maintain the fertility and soil attributes of high-quality agricultural land and to enable end of operations decommissioning back to pre-construction agricultural land values.*

There will be no impact on high quality agricultural land. In addition, the Project will be constructed on previously disturbed land which has not previously been used for agricultural land uses. Therefore, there is no requirement for the Project to be constructed in a way to maintain the fertility and soil attributes of high-quality agricultural land and enable end of operations decommissioning back to pre-construction agricultural land values.

A decommissioning and rehabilitation plan prepared for the Project will ensure the development footprint is returned to a suitable post-Project land use.

P12 *Development on or adjacent to the stock route network maintains its operational efficiency and ongoing integrity and function*

The Project will not occur on or adjacent to the stock route network, as demonstrated in Section 2.7. Therefore, the Project does not compromise the network's operational efficiency and ongoing integrity and function.

4 CONCLUSION

This Agricultural Land Assessment has determined that the Project meets the performance outcomes of Queensland State Code 27 which relate to agricultural land.

5 REFERENCES

Department of Climate Change, Energy, the Environment and Water (2009) *Einasleigh Uplands bioregion*

Geoscience Australia (2026) Historical Aerial Photography Database. Accessed 03.03.2026: Historical Aerial Photography | Geoscience Australia

Queensland Department of State Development, Infrastructure and Planning (2026) *Planning guideline: State code 27: BESS development*

Appendix H Social Impact Assessment



Prepared for K3W Project Co Pty Ltd as trustee for the K3W Project Trust

Social Impact Assessment

Kidston Battery Storage Facility

Etheridge Shire, Far North Queensland

August 2026

Project Number: 250711

Social Impact Assessment
Kidston Battery Storage Facility

Document verification

Project Title:	Kidston Battery Storage Facility
Project Number:	250711
Project File Name:	Kidston Battery Storage Facility

Revision	Date	Prepared by	Reviewed by	Approved by
Draft V1.0	7/04/2026	Ross Massie, Emilia Hallstroem	Caroline Squires	Caroline Squires
Final V1.0	3/07/2026	Ross Massie	Caroline Squires	Caroline Squires
Final V1.1	7/07/2026	Ross Massie	Caroline Squires	Caroline Squires
Final V1.2	13/08/2026	Ross Massie	Caroline Squires	Caroline Squires

NGH prints all documents on environmentally sustainable paper including paper made from bagasse (a by-product of sugar production) or recycled paper.

We acknowledge the Traditional Owners of this land and pay our respect to Elders past, present and emerging. We recognise that the First Nations peoples of Australia have traditionally managed the resources of this land in a sustainable way, and that they are the original custodians of the Australian environment.

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Acronyms and Abbreviations

ABS	Australian Bureau of Statistics
BSF	battery storage facility
CBA	Community Benefit Agreement
DC	Direct Current
DSDIP	Department of State Development, Infrastructure and Planning
EPAC	Ewamian People Aboriginal Corporation
FIFO	Fly in fly out
FTE	Full-time equivalent
IAIA	International Association for Impact Assessment
IAP2	International Association for Public Participation
IRSAD	Index of Relative Socio-economic Advantage and Disadvantage
km	kilometres
$km^{2.}$	square kilometres
LGA	Local Government Area
m	metres
MW	megawatts
OSOM	Oversize Overmass
PSL	Primary Social Locality
Qld	Queensland
RSL	Regional Social Locality
SAL	Suburb and Locality
SEIFA	Socio-Economic Indexes for Areas
SIA	Social Impact Assessment

Executive summary

This Social Impact Assessment (SIA) has been prepared on behalf of Genex Power Pty Ltd (Genex) and the K3W Project Co. Pty Ltd as trustee for the K3W Project Trust (the Proponent), who is seeking development approval to facilitate the construction of the Kidston Battery Storage Facility (BSF) (the Project).

The Project is proposed to be developed within the Etheridge Shire Local Government Area (LGA) in Queensland (Qld) and is part of the Kidston Clean Energy Hub (Clean Energy Hub) which currently comprises the 50 MW Kidston Solar Project, operating since 2017, and the 250 MW / 2,000 MWh Kidston Pumped Storage Hydro Project (K2-Hydro), currently under construction. The Project will provide utility-scale energy storage to support the National Electricity Market (NEM) and enhance regional grid stability. Once developed, the Clean Energy Hub will be labelled as a world first integration of pumped storage hydro, solar and battery storage.

The SIA establishes a baseline profile for the project area, draws on community consultation and evaluates the potential social changes and opportunities across the project lifecycle.

Approach

The SIA has been informed by best practice principles and is aligned with the QLD SIA Guideline and accompanying Technical Supplement. The assessment also draws from the International Association for Impact Assessment (IAIA) Guidance Note. Accordingly, the assessment is evidence-based, precautionary, and responsive to the local context.

The SIA is an iterative assessment and includes the following key stages:

- Targeted community and stakeholder engagement has been central to informing the SIA.
- Scoping and social baseline was completed with reference to the defined social locality and allowed for impact assessment at different geographic scales.
- An impact assessment was undertaken, including the evaluation of the magnitude and vulnerability of social impacts to determine their significance rating, and framed with regard to:
    - The life of the Project – establishment (site establishment and preparation), construction, operation, and decommissioning.
    - The five key matters identified in the Qld SIA guidelines (DSDIP, 2025b).
    - Proximate major projects and consideration of potential cumulative impacts.
    - Findings from relevant studies and assessments that were completed to address the technical matters set out in State Code 27.
    - Consideration of the significance of residual impacts after the effective application of mitigation measures.
- The identification of management measures (both impact mitigation and benefit enhancement measures) provides a foundation to inform the development and execution of a Community Benefit Agreement (CBA) with Etheridge Shire Council.

Social Impacts

Overall sentiment toward the Project was mixed, with local community members more likely to express negative or indifferent views, while regional and industry stakeholders more commonly emphasised potential benefits, particularly related to opportunities for local jobs, training and procurement. The opportunity for increased community investment was a common theme across all stakeholder groups.

The following potential positive social impacts relating to *Community*, *Accessibility* and *Livelihoods* impact categories were identified:

- Increased community investment.
- Contribution to regional energy supply.
- Increased local employment opportunities.
- Increased opportunities for training and skills development.
- Increased opportunities for local businesses.

The following potential negative impacts relating to *Community*, *Health and wellbeing*, *Accessibility* and *Livelihoods* categories were evaluated:

- Reduced trust due to legacy engagement experiences.
- Increased fire risk.
- Road damage and safety risks from heavy vehicle traffic.
- Limited flow-on economic benefits for local communities.

Management measures and community benefit priorities

The SIA recommends a suite of management and benefit enhancement measures. These measures are designed to be focused, practical, transparent actions that avoid, reduce, or respond to negative social impacts and opportunities to strengthen positive outcomes for the community across the life of the Project.

Consultation and research undertaken through the SIA was central to informing the development of measures tailored to mitigate the Project's potential social impacts and enhance Project benefits, including informing the development of a CBA with Etheridge Shire Council.

The suite of plans and strategies are proposed as a continuation of the impact management and benefit enhancement undertaken as part of the SIA. This includes the preparation of a Social Impact Management Plan (SIMP) supported by a Community and Stakeholder Engagement Plan (CSEP), Workforce Management Strategy, Local Business and Procurement Strategy, and a Workforce Housing and Accommodation Plan. These plans and strategies will sit as chapters in the SIMP rather than standalone documents. A SIMP framework is provided in Appendix D.

To inform the preparation of these strategies and plans, *Project specific initiatives and actions* were identified. These community benefit priorities have been developed to respond to both the social impacts identified in the SIA and the broader aspirations of the community. Priority initiatives that will inform preparation of the CBA were focused on local roads, training, employment and procurement opportunities, energy supply, community transport, funding for community organisations, improvements to telecommunications and digital connectivity, support for health and social wellbeing and community events.

Together, the proposed management measures and community benefit initiatives are intended to avoid or reduce negative social impacts where feasible, support equitable access to project related opportunities, and contribute to long lasting benefits to the Etheridge Shire community over the life of the Project.

1. Introduction

1.1. Overview

This SIA has been prepared on behalf of Genex Power Pty Ltd (Genex) and the K3W Project Co. Pty Ltd as trustee for the K3W Project Trust (the Proponent), who is seeking development approval to facilitate the construction of a Battery Storage Facility (BSF) (the Project).

The Project is proposed to be developed within the Etheridge Shire Local Government Area (LGA) in Queensland (Qld) and is part of the Kidston Clean Energy Hub (Clean Energy Hub) which currently comprises the 50 MW Kidston Solar Project, operating since 2017, and the 250 MW / 2,000 MWh Kidston Pumped Storage Hydro Project (K2-Hydro), currently under construction. The Project will provide utility-scale energy storage to support the National Electricity Market (NEM) and enhance regional grid stability. Once developed, the Clean Energy Hub will be labelled as a world first integration of pumped storage hydro, solar and battery storage.

The BSF and associated grid connection, is proposed to be constructed in the northern section of the Kidston Solar Farm lot, directly adjacent to the Aurumfield Substation (refer Figure 2-1). The Project site consists of previously disturbed and cleared land associated with the historical Kidston Gold Mine and is co-located with existing and proposed renewable energy developments as mentioned above. Specifically, the BSF and subsequently the proposed new lot will be located on the decommissioned South Pond area of the Processing Facility that was part of the Kidston Gold Mine. The Project represents Stage 3 of the Clean Energy Hub and supports Queensland's Energy and Jobs Plan and the state's commitment to net zero emissions by 2050.

1.2. Purpose of this SIA

This SIA aims to identify, predict, and evaluate the likely social impacts and benefits arising from the Project, and to propose appropriate responses to mitigate negative impacts and enhance positive outcomes.

The SIA will inform the Proponent's negotiations for a Community Benefit Agreement (CBA) with Etheridge Shire Council under section 106Z of *The Planning Act 2016* and consistent with both State and any relevant local policy[1].

[1] *Qld Government's Community Benefit Agreement – Guidance for Local Governments and Proponents*.

1.3. Report structure

This report is structured to align with the SIA process as set out in the Qld SIA Guideline (Table 1-1).

Table 1-1 Report structure

SIA process	Section
Scoping	Section 2, 3, 4
Community and stakeholder engagement	Section 3, 4, 5
Social baseline	Section 4
Impact assessment	Section 5
Management measures	Section 6
Conclusion	Section 7

Source: (DSDIP, 2025b, p. 77)

2. The Project

2.1. The site and surrounds

The project site is located within the Etheridge Shire Local Government Area (LGA), approximately 280 kilometres west of Townsville and 40 kilometres north-west of Lyndhurst, in north-western Queensland.

The development site occupies the northern section of Lot 12SP345756 within the broader Clean Energy Hub on the historic Kidston Gold Mine site. The area has been extensively disturbed by former mining and renewable energy construction activities and contains established infrastructure, including access roads, cleared benches and the existing Aurumfield Substation.

The Project is situated in a remote area surrounded by large rural enterprises, resulting in a low number of directly impacted stakeholders. The nature of the land use (broad acre grazing properties) means that neighbouring residences are few and widely dispersed. The nearest township by road is Einasleigh, located approximately 50 km from the Project Site.

Direct access to the site off Gilberton Road will be provided via a single, controlled access point. The site is accessed from Gilberton Road via the existing mine access. This existing access route currently services the K2-Hydro facilities within the Clean Energy Hub, and the Ergon and Aurumfield Substations.

The Project will utilise the existing established haulage route from Townsville through the State and local road network, comprising the Bruce Highway, Flinders Highway and Hervey Range Road, before travelling north via the Gregory Developmental Road and Kennedy Developmental Road, and then onto Gilberton Road. Figure 2-1 shows the Project location in context of the Kidston Solar Farm and K2-Hydro Project.



Figure 2-1 Project location

2.2. Project rationale

BSF's are critical to Queensland's transition toward a reliable and sustainable electricity network. They form a focus area of the Queensland Energy Road Map to support affordable, reliable and sustainable electricity while helping with the State's commitment to achieving net zero emissions by 2050.

The proposed BSF will enable efficient storage and dispatch of renewable electricity generated in the region. The facility will allow stored energy to be released to the grid during periods of high demand, mitigating intermittency in renewable generation and improving grid reliability. In doing so, it will complement existing and proposed generation infrastructure in the Clean Energy Hub, including the associated solar and hydro-electric assets, by providing dispatchable power and frequency, voltage, and system-strength support to the Aurumfield Substation and the broader transmission network.

The Project directly aligns with the Queensland Government's Energy Road Map which encourages private sector investment in the renewables sector including battery storage.

At the local level, the proposal supports the Etheridge Shire Council Planning Scheme objectives to diversify the regional economy and attract investment in renewable energy where land-use compatibility, amenity, and environmental values can be appropriately managed. The BSF has been sited to avoid sensitive receptors, minimise environmental disturbance, and ensure that the ongoing viability of agricultural land is maintained.

Beyond the regional economic benefits, the environmental and social outcomes of energy storage are significant. The Project will assist in reducing reliance on fossil-fuel generation, support Queensland's Energy Road Map objectives, and contribute to climate-change mitigation through reduced greenhouse-gas emissions. It will also improve energy-system resilience and stability, delivering consistent grid services during peak demand and network fluctuations.

Looking ahead, dispatchable storage infrastructure such as this BSF is essential to meeting Queensland's increasing electricity demand and balancing the variability of solar and wind generation. The Project therefore represents a key enabling component of Queensland's Energy Road Map and will provide long-term benefits for both the State electricity network and the Etheridge region.

2.3. Project description

The Project consists of a standalone Grid Forming BSF of up to approximately 250 Megawatt (MW) / 1,250 Megawatt Hours (MWh). It will connect from a private project substation into the Aurumfield Substation at 275 kilovolts (kV). The Project is part of the Clean Energy Hub which currently comprises the 50 MW Kidston Solar Project, operating since 2017, and the 250MW /

2,000MWh K2-Hydro, currently under construction. The infrastructure included in the Project is detailed in Table 2-1. All infrastructure will be located within the Project Footprint.

Table 2-1 Project infrastructure

Infrastructure	Description
Battery units	Containerised units will encompass battery components, with each unit in the same size and dimension of a 20-foot shipping container. These will be manufactured off-site and delivered to the Project Footprint for installation. The dimensions of the containers will range from 2.438 m (H) x 6.058 m (L) x 2.438 m (D) up to 4.97 m (H) x 8.55 m (L) x 2.66 m (D) per unit. Final unit dimensions will be confirmed following technology selection.
Power station (including conversion system or inverter, transformer and ring main unit)	Power conversion systems (inverters and transformers) will convert stored energy (direct current) to network electricity (alternating current). The containerised units will encompass the system components. The Project would include up to 80 inverters and 40 step-up transformers, with 5 battery skids shared between 2 inverters, all of which are housed in a MV skid that contains one step up transformer, one Ring Main Unit (RMU) and one inverter.
Controller	The BSF will have a supervisory control and data acquisition system and a battery management system. These systems will enable real-time monitoring, fault detection, remote diagnostics, and control of battery operations, ensuring safe and efficient performance.
Heating, cooling and ventilation	Battery Units: Each battery unit will feature an integrated thermal management system, typically utilising liquid cooling and/or heating to maintain optimal operating temperatures. Air cooling may be used for some auxiliary electrical components. Humidity control systems will also be integrated to protect against condensation and moisture ingress. Inverters: Inverters will use a dual air-cooling system - one circuit brings in outside air and vents it out, while the other

Infrastructure	Description
	recirculates air within a sealed section to protect sensitive equipment.
Energy management system (EMS)	A power plant controller integrated with an EMS will coordinate the operation of the BSF to ensure compliance with grid requirements. The EMS will optimise charge/discharge cycles, monitor performance, and enable integration with other energy resources to support network stability.
Cabling	Underground electrical cabling and fibre optic cabling will connect the battery units to the power stations, and site office/distribution centre (monitoring and control equipment). It will be designed in accordance with Australian and International Standards, as well as manufacturer's specifications. The BSF will connect to the Aurumfield Substation via transmission line.
Substation	The BSF will be connected to a Project substation, with the point of connection to the Powerlink network at the Aurumfield Substation.
Lighting	Security lighting will be included within the development. All lighting will be directed into the Development Footprint and comply with *Australian Standard (AS) 4282:2019 Control of the obtrusive effects of outdoor lighting* (Standards Australia, 2019b), to minimise impacts on sensitive receivers.
Site facilities	Site facilities will be established to accommodate monitoring and control equipment, operation and maintenance amenities, carpark, communications equipment, storage facilities and supplies as needed.

2.3.1. Construction

Project construction will comprise the following three key stages (Table 2-2).

Table 2-2 Construction phases

Site work	Construction	Commissioning
• Pre-construction approvals • Vegetation clearing for access roads, construction compound, transmission line corridor • Site preparation and services connection • Installation of security fencing • Installation of environmental controls • Establishment of site construction compound, carpark, laydown areas, and site office • Construction of access track for Project access	• Cut, fill, and compaction activities to desired design levels for battery and access tracks. • Construction of footings and concrete pads to support batteries and transformers • Delivery of electrical conduits, BSF modules and OHTL components, and balance of plant equipment • Cable connections • Delivery and installation of the transformer • Installation of medium voltage cable from BSF to Project substation • Grid connection and connecting at Aurumfield substation	• Grid connection and commissioning of plant • Completion certificate • Removal of temporary facilities and construction equipment.

Construction workforce

Construction is expected to commence in 2027 subject to approvals and commercial considerations. The construction phase will last for approximately 25 months. The Project is expected to employ 60 full time equivalent (FTE) staff and to generate up to 120 FTE direct jobs during peak construction.

Construction workforce accommodation and transport

The Proponent is proposing to accommodate the construction workforce at the Oaks Rush Accommodation Camp located at Gilberton Road. This is a purpose-built accommodation facility for temporary workforces.

Genex has undertaken significant renovations of the Oaks Rush Accommodation Camp to support the Clean Energy Hub. These upgrades include refurbishing existing facilities such as

the kitchen, cold rooms, gymnasium, tennis court, basketball hoops, water treatment plant, and backup generator. The enhanced camp now accommodates up to 400 workers.

Workers will predominantly be transferred from Oaks Rush Accommodation Camp to the Project site by bus (Genex, 2025).

2.3.2. Operation

The Project is expected to have an operational life of 25 years. Operation would include the activities listed below:

- Monitoring and control of the BSF. This would be undertaken both by on-site personnel and via a remote-control system accessed from a central off-site facility, providing real-time and historical performance information.
- Maintenance activities including general repairs and maintenance of the BSF infrastructure, tracks, drainage, and fences.
- Night lighting at the site would be minimised and would be for operational and security purposes only.
- Procedures and management plans for all operational activities will be included in an Operational Environmental Management Plan that would be prepared for the Project.
- The Kidston BSF would employ up to 2-3 full time staff during the operational period and would utilise local commercial entities where possible and as required.

Operational workforce

The Project would employ up to 2-3 full time staff during the operational period and would utilise local commercial entities where possible and as required.

Operational workforce accommodation

A separate Development Application will be submitted by Genex for the expansion of an existing workforce accommodation facility in the Old Kidston Township to accommodate the operational workforce.

This facility is intended to accommodate the operational workforces of the existing Kidston Solar Farm, the Kidston Pumped Storage Hydro Project that is currently under construction, and the proposed Kidston BSF by upgrading the existing facility to accommodate approximately 40 rooms and associated common infrastructure.

2.3.3. Decommissioning

At the end of the operational phase, the BSF will be decommissioned or extended. Based on current best practice, decommissioning would include the following major activities:

- Battery components will be de-energised, dismantled and removed from site for local recycling where possible
- All above ground cabling will be removed for recycling
- Underground cabling may be terminated below ground and remain in-situ
- All buildings will be removed down to the foundation or concrete pads
- All infrastructure and equipment will be removed for recycling, with the exception of any infrastructure or buildings that have become the property of or are managed and operated by the Transmission Network Service Provider, such as within the substation yard

If continued operation of the Project is preferred, a relevant Development Application would be submitted at that time. It is possible that some of the infrastructure present at the site would be retained and incorporated into the new proposal.

3. Methodology

3.1. Overview of the SIA process

This SIA has been informed by best practice principles and is aligned with the Qld SIA Guideline (DSDIP, 2025b) and accompanying Technical Supplement (DSDIP, 2025c). The assessment also draws from International Association for Impact Assessment (IAIA) Guidance Note (Vanclay et al., 2015). Accordingly, the assessment is evidence-based, precautionary, and responsive to the local context.

As stated by Vanclay (2003, p. 5):

> *Social Impact Assessment includes a process of analysing, monitoring and managing the intended and unintended social consequences, both positives and negatives, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions'*

The SIA is an iterative assessment and includes the following key stages:

- **Targeted community and stakeholder engagement** has been central to informing the SIA.
- **Scoping** and **social baseline** was completed with reference to the defined social locality and allowed for impact assessment at different geographic scales.
- An **impact assessment** was undertaken, including the evaluation of the *magnitude and vulnerability* of social impacts to determine their significance rating, and framed with regard to:
    - The *life of the Project* – establishment (site establishment and preparation), construction, operation, and decommissioning.
    - The *five key matters* identified in the Qld SIA guidelines (DSDIP, 2025b).
    - Proximate major projects and consideration of potential *cumulative impacts.*
    - Findings from *relevant studies and assessments* that were completed to address the technical matters set out in *State Code 27*.
    - Consideration of the significance of *residual impacts* after the effective application of mitigation measures.
- The identification of **management measures** (both impact mitigation and benefit enhancement measures) provides a foundation to inform the development and execution of a CBA with Etheridge Shire Council.

Consistent with the Qld SIA Guideline and accompanying Technical Supplement (DSDIP, 2025c) the SIA considers the full Project lifecycle including establishment, construction, operation and decommissioning.

The tasks undertaken in each stage of the SIA process is shown in Figure 3-1 with further detail provided in Sections 3.4 to 3.6 following.

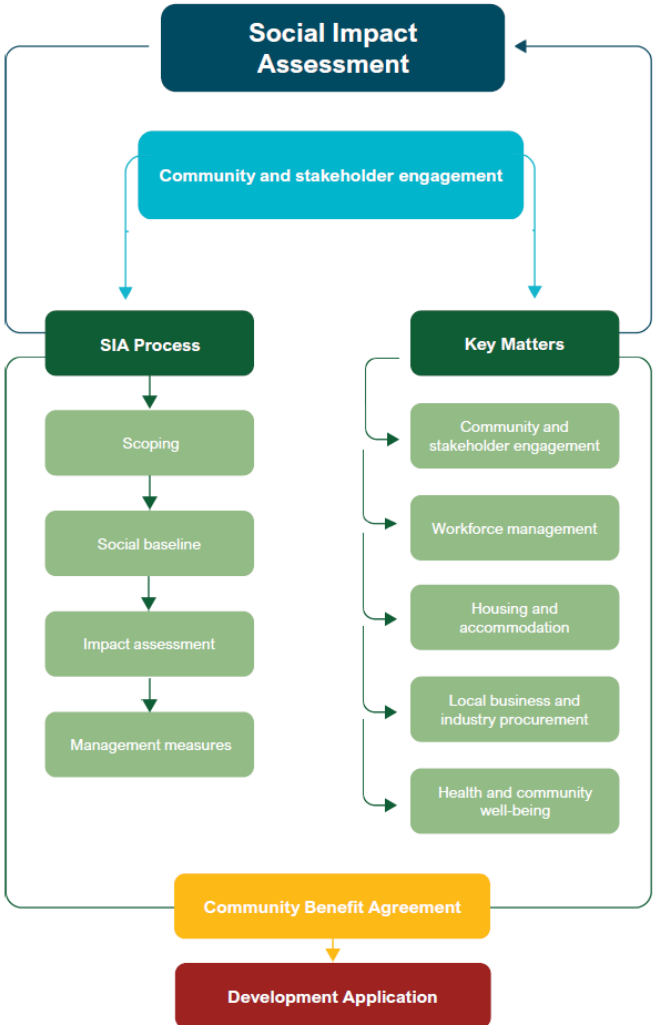


Figure 3-1 Overview of the SIA process

Adapted from Qld SIA Guideline (DSDIP, 2025b)

3.2. Community and stakeholder engagement

This SIA was principally informed by targeted engagement for the Kidston BSF. Genex's prior engagement activities at the Clean Energy Hub supported scoping activities and is noted in the following sub-sections.

3.2.1. SIA-targeted engagement

NGH's approach to engagement has been tailored to the Project context and scale, noting the significant distance and limited population density surrounding the highly disturbed site.

The following targeted community and stakeholder engagement activities were undertaken by NGH in preparing the SIA for the Project:

- Mapping and identification of community members and key stakeholders.
- Semi-structured interviews with community members and key stakeholders.

Fifteen (15) semi structured interviews were conducted for the SIA (Table 3-1). Over 30 community members and stakeholders were contacted to provide the opportunity to participate in the assessment, with a number of stakeholders contacted noting that they did not have any input to share or were unavailable to participate.

Table 3-1 SIA-targeted semi-structured interviews

Stakeholder group	Stakeholder
Government	Regional Development Australia - Tropical North
Community members	5 community members in Einasleigh participated in SIA interviews
Traditional Owners	Ewamian People Aboriginal Corporation (EPAC)
Local Industry and Business	Gulf Savannah Development (GSD)
	Manufacturing Skills Qld
	Wirra Earthmoving Services - Forsayth
NGO, Community and interest groups	Einasleigh Progress Association
Health and wellbeing service providers	Forsayth Primary Health Centre - Cairns and Hinterland Hospital and Health Service
	Etheridge Cares
	North and West Remote Health
	North Qld Primary Health Network

Stakeholder group	Stakeholder
Schools, TAFE, employment providers	Australian Training Works
Emergency management	Einasleigh Rural Fire Brigade

SIA-targeted stakeholder interviews were transcribed, and then thematic analysis was performed to identify themes surrounding the perceived potential impacts of the Project. In addition, information was drawn from Genex's prior engagement activities in the locality. A detailed breakdown of SIA-targeted engagement is shown in Appendix A.

Prior engagement

Genex's history of engagement at the Clean Energy Hub site has been guided by the principles of maintaining open, respectful communication with key stakeholders and responsiveness to enquiries. The following prior engagement activities informed scoping for the SIA:

- Planning pre-lodgement meeting with Etheridge Shire Council – 17 November 2025.
- Community Information Sessions to provide project updates and an opportunity for the community to speak directly with Genex and its subject matter experts on issues and concerns.
- Attendance at local meetings where strong representation from local stakeholders is present.
- The provision of timely and accessible information to support meaningful engagement such as via a quarterly newsletter that provides subscribers with information detailing major organisational changes, project milestones, current and upcoming development and construction activities, upcoming industry conferences, panels, and other forums.
- A Project website including:
    - Project snapshot and updates pages;
    - A complaints and concerns section;
    - A community webpage;
    - A Contact Us Webpage with quick links to social media channels and contact details; and
    - Links to news and media pages.

A summary of the outcomes from Genex's prior engagements and a detailed CSEP is included are shown in Appendix A.

3.3. Scoping

During the scoping phase, a preliminary review was undertaken to identify potential social impact and benefits. The review included:

- Understanding the nature and scale of the development.
- Desktop assessment to determine relevant regulatory requirements (included in Appendix B).
- Preliminary desktop review of data, public policies, plans and strategies to understand the location and characteristics of potentially affected communities and their context.

- Desktop research and engagement with the Project's Heritage Advisor to identify Traditional Owners as a priority for engagement.
- Review of Genex's summary of prior engagement outcomes as noted in Section 0 above.

The above informed the preliminary identification of potentially affected communities, possible social impacts, and relevant social indicators for this SIA.

3.4. Social baseline

The existing social conditions were examined in detail to establish the base case against which social impacts were evaluated. Defining the 'social locality' is the first step in this process of identifying the potential area of influence for social impacts related to the Project.

3.4.1. Defining the social locality

The social locality defines the social and geographic boundaries used to assess potential changes resulting from the Project. It outlines the communities most likely to experience positive and negative social impacts and provides the spatial framework for baseline analysis and impact evaluation.

The social locality was initially identified in accordance with the Qld SIA Guideline (2025) using an initial 125-km radius of the Project site as a starting point (DSDIP, 2025b). The study area was then refined through an iterative process to reflect areas where social and economic effects are most likely to occur and with reference to the considerations shown in Table 3-2. This included:

- The *Primary Social Locality (PSL)*: Near neighbours, and sensitive receivers likely to experience direct impacts.
- The *Regional Social Locality (RSL)*: Surrounding communities, service and accommodation centres, community infrastructure and services that are potentially impacted in a less direct, or infrequent way.

Table 3-2 Considerations in defining the SIA social locality

Consideration	Description
Host Council	Etheridge Shire Council
Directly affected stakeholders	Near neighbours, and sensitive receivers, as well as properties and communities along the proposed transport route, likely to experience direct impacts.
Surrounding communities	Host communities likely to experience indirect social or economic effects, including Einasleigh, Forsayth, Mount Surprise and Georgetown.
Service and accommodation centres	Towns with the capacity to supply goods and services to the Project. These are generally within a one-hour drive to the Project site.

Consideration	Description
Community infrastructure and services	Health, education, and recreation facilities that support community wellbeing, including hospitals, schools, TAFE campuses, childcare centres, libraries, sporting fields, parks, and natural assets such as rivers and national parks.
Proximate major projects	Major energy or infrastructure developments within approximately 90 km (approximately one-hour's drive time) that may contribute to cumulative workforce or housing pressures.

3.4.2. Baseline analysis

The social baseline is a comprehensive analysis of the socio-economic context, including key trends and drivers relevant to the Project. The baseline incorporates broader considerations outlined in the Qld SIA Guideline, including the policy and strategic context, demographic profile and community characteristics, social infrastructure and housing conditions, economy and workforce profile, health and wellbeing travel and access patterns and data relevant to First Nations peoples (DSDIP, 2025b).

A summary of the key sources used within the baseline analysis for the SIA is shown in Table 3-3.

Table 3-3 Baseline analysis

Activity	Source

Data analysis	• Qld Statisticians Office – Regional Profiles
	• Australian Bureau of Statistics (2021/2016 Census and other relevant socio-economic data), including:
	  ○ Population and demographic indicators
	  ○ Business, industry, employment, and income indicators
	  ○ Housing and accommodation characteristics
	  ○ Infrastructure, service, transport, and community features

Literature, policy and strategies	• Review of publicly available research • Review of relevant public policies, plans and strategies

Technical reports	• Review of studies and assessments that were completed to address the technical matters set out in *State Code 27,* and were identified as relevant to this SIA based on the outcomes of the community and stakeholder engagement undertaken for the Project, including:
	  - Fire Safety Study
	  - Natural Hazards Risk Assessment
	  - Bushfire Management Plan
	  - Traffic Impact Assessment, including Heavy Vehicle and OSOM Construction Strategy

Proximate major projects	• Informed by desktop research and consultation with stakeholders.

3.4.3. Potential concurrent demand

The Qld SIA Guideline (DSDIP, 2025b) requires the consideration of the cumulative impacts associated with major projects in the area. To assess the potential cumulative impacts and opportunities – particularly those specific to workforce management, housing and accommodation – projects in the social locality that are currently proposed, approved or under construction and that may overlap with the construction phase of the Project were researched and documented.

3.5. Impact assessment

The key categories of social impact used in this assessment are consistent with the IAIA's Guidance Note (Vanclay et al., 2015) and the impact categories defined in the Qld SIA Guideline (DSDIP, 2025b). The impact assessment was also framed by the definition of social impact under Section 106R and 106S of the Planning Act 2016.

These impact categories provide a consistent framework for evaluating how the Project may influence various aspects of people's lives and participation in decision-making processes. The categories and their descriptions are shown in the Table 3-4 below.

Table 3-4 Social impact categories

Community	Changes to community values and/or the way the community functions (composition, cohesion, character, resilience, and people's sense of place)
Way of life	Including how people live, work, play and interact with one another on a day-to-day basis
Culture	Including culture, history, and ability to access cultural resources both Aboriginal and non-Aboriginal
Health and wellbeing	Including communities' physical safety, exposure to hazards or risks, and access to and control over resources
Surroundings	Including liveability and aesthetics, as well as the condition of their environment (for example, air quality, noise levels, and access to water)
Accessibility	Including communities' access to, and quality of, infrastructure, services and facilities
Livelihoods	Including changes to livelihoods, for example, whether peoples' jobs, properties or businesses are affected, or whether they experience advantage/disadvantage.

Source: Adapted from Qld SIA Guideline (DSDIP, 2025b)

The impact assessment was also framed with reference to the following five key matters:

- Community and stakeholder engagement
- Workforce management
- Housing and accommodation
- Local business and industry procurement

- Health and community well-being.

The impact assessment included an evaluation of the magnitude and vulnerability of social impacts to determine their significance rating (Table 3-5).

Table 3-5 Impact significance matrix

Impact magnitude criteria		Vulnerability criteria			
		Negligible	**Low**	**Medium**	**High**
	Negligible	Insignificant	Low	Moderate	Moderate
	Low	Low	Low	Moderate	High
	Moderate	Moderate	Moderate	High	Major
	High	Moderate	High	Major	Major
	Positive	Positive			

Source: Adapted from Qld SIA Guideline (DSDIP, 2025b, p. 82)

3.6. Management measures

The mitigation and benefit enhancement measures identified through this SIA are designed to be focused, practical, transparent actions that avoid, reduce, or respond to negative social impacts and opportunities to strengthen positive outcomes for the community across the life of the Project.

The management measures developed through the SIA were informed by engagement and provide a foundation to inform the development and execution of a CBA with the host Council. Community benefit priorities were identified, consistent with the Qld Governments 'Community Benefit Agreements: Guidance for Local Governments and Proponents' (DSDIP, 2025a, p. 6):

"*The scope and content of community benefits in a CBA should be determined collaboratively by the parties involved and generally informed by (DSDIP, 2025a, p. 6):*

- *the scale and nature of the proposed development,*
- *the social impacts and management measures identified in the SIA, and*
- *the needs and aspirations of the host community*."

Technical reports prepared to meet the provisions of *State Code 27,* and that are relevant to the potential social impacts identified, were reviewed and mitigation measures proposed on the understanding that a request to prepare the appropriate management plans may form part of the conditions of development consent for the Project.

3.7. Assumptions and limitations

This SIA has been prepared using the best available information at the time of writing. The following limitations and assumptions apply:

- Social baseline data was compiled from the most recent publicly available sources, including the Australian Bureau of Statistics (ABS) and Government publications, including plans, strategies and annual reports.
- The assessment was undertaken using input from SIA-targeted engagement.
- Outcomes from community engagement activities conducted prior to the time of writing were considered in the scoping of the assessment but did not directly inform recommendations of this SIA.
- The number of stakeholders who participated in engagement activities is relatively small compared to the overall population of the RSL. While engagement was targeted to reach a broad representative cross-section of the community, a number of stakeholders contacted chose or were unable to participate. Therefore, the findings reflect the views of those who participated and may not capture the full range of community perspectives.
- This report relies on the accuracy and completeness of information contained in the technical reports completed for the Project's Planning Report.

4. Social baseline

This section presents the social baseline for the Project. It outlines the characteristics of the Project's social locality and provides a comprehensive analysis of the socio-economic context, including key trends and drivers relevant to the Project. A more detailed presentation of the policy and strategic context, along with key statistics and indicators is included in Policy and strategic context in Appendix B and Appendix C.

4.1. Social locality

The Project's defined PSL and RSL are presented in Table 4-2 and mapped in Figure 4-1.

Table 4-1 Social locality – key geographies of analysis

Locality	Population	Description	Rationale
Primary Social Locality (PSL)	87[2]	The PSL comprises the following ABS Suburb and Locality (SAL) area: • Einasleigh[3]	The Project is situated in a remote area surrounded by large rural enterprises, resulting in a low number of directly impacted stakeholders. The PSL includes the closest population centre to the Project site and where the direct impacts of the Project are most likely to occur. The PSL includes the Einasleigh township and the nearest properties to the site.
Regional Social Locality (RSL)	727[4]	The RSL is the ESC area. The ESC covers a total area of 39,199 km$^{2.}$	Informed by scoping activities, the RSL was defined by considering where indirect impacts are most likely to occur.

[2] ABS Census 2021

[3] ABS area: SAL30952

[4] Estimated Resident Population, as at 30 June 2025, QLD Statisticians Office, 2025

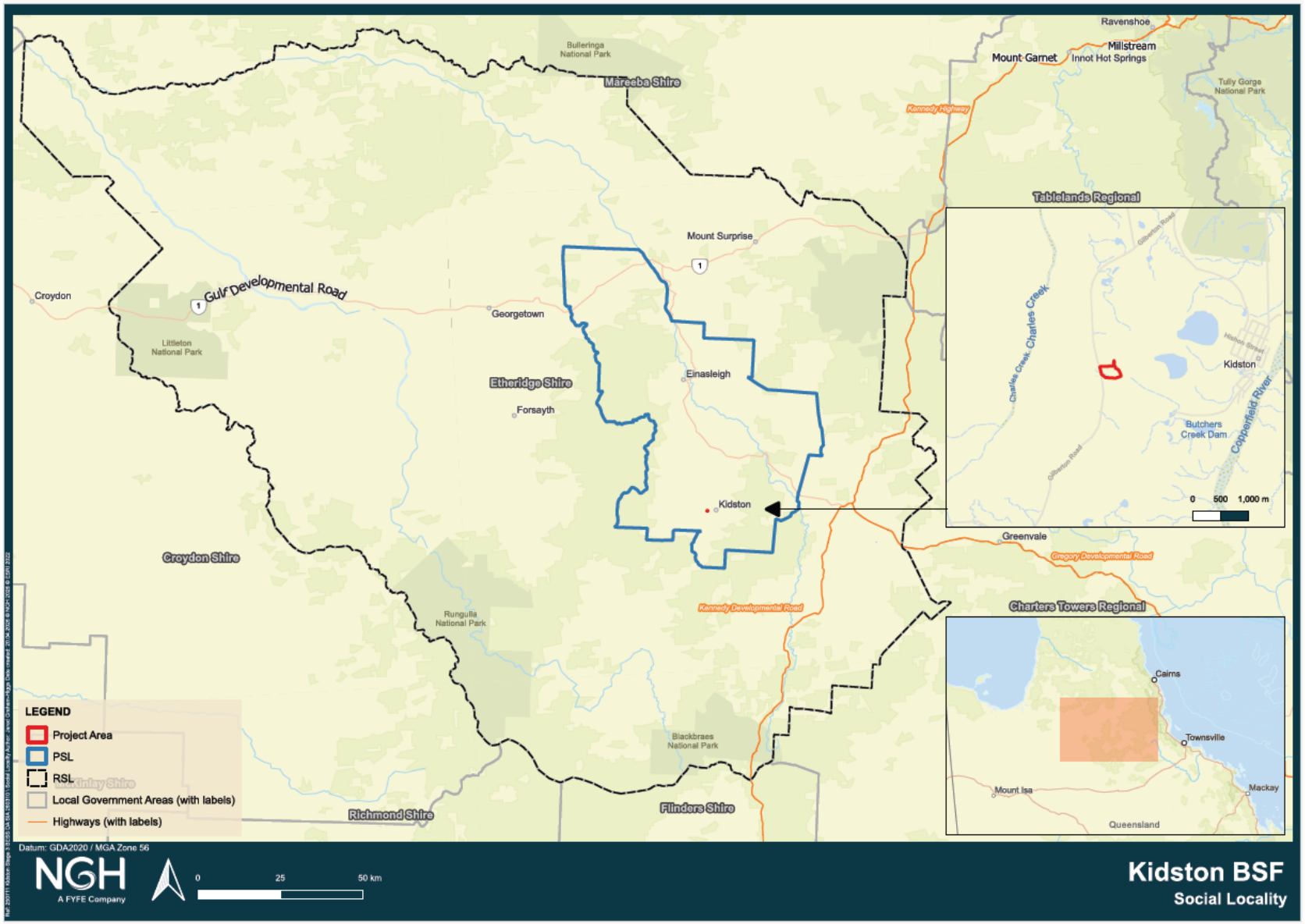


Figure 4-1 Social locality map

Key townships

Table 4-2 shows the key townships within the Etheridge Shire Council area.

Table 4-2 Key townships within Etheridge Shire Council relevant to the Project site

Locality	Population (2021 Census)	Background / relevance	Approximate distance from Project site (via road)
Einasleigh	87	• Closest township to the Project site. • The Savannahlander Train service runs weekly through the township of Einasleigh. The route runs from Cairns to Forsayth. • The main event for Einasleigh is Easter at Einasleigh, comprising of Horse Racing and Rodeo, which are held over the Easter weekend.	50km (approx. 40 minute drive)
Georgetown	254	• Georgetown is the largest township and administrative headquarters of the Shire. • Consists of predominantly low-density housing on large lots, with rural residential options for residents wanting more space or to keep animals. • The township has a hospital and is an important regional centre for health services. There is also a school, childcare centre and kindergarten, a hostel for school children coming from remote areas, and a variety of government services available within the town.	150km (approx. 2hr drive)
Forsayth	107	• Includes basic services including school, police station, health clinic, and tourism connection via the Savannahlander railway • Planning scheme allows for future residential, commercial, and industrial expansion	115km (approx. 1.5hr drive)

Locality	Population (2021 Census)	Background / relevance	Approximate distance from Project site (via road)
Mount Suprise	138	• Small township with essential services such as a primary school, health clinic, and police station • Main street (Gulf Developmental Road) serves as the commercial hub with businesses, accommodation, and recreation.	120km (approx. 2hr drive)

Source: (Etheridge Shire Council, 2020a p. 14-15)

4.2. Policy and strategic context

4.2.1. Renewable energy policy and direction

Understanding the National, regional and local policy landscape and strategic context helps clarify how the Project aligns with local priorities and where it may influence or support existing plans and community aspirations. A more detailed review of relevant policy and strategic context is in Appendix B

National policy emphasises emissions reduction through the *Paris Agreement 2016* and the *Climate Change Act 2022*, which together commit Australia to a 43% emissions reduction by 2030 and net zero by 2050. The Project supports these goals by adding renewable generation and aligning with emerging national frameworks for responsible project delivery, including decommissioning.

Qld state level policy focuses on long-term planning through the Energy Roadmap 2025 and investment strategies that highlight the role of private industry in meeting future demand (Queensland Treasury, 2025). The Project contributes by expanding renewable supply and supporting regional employment during the energy transition.

Local government strategies highlight support for renewable energy, carbon reduction programs, and reducing Council's carbon footprint. They also emphasise that large-scale projects operate with a suitable social licence and provide long-term benefits to the community (Etheridge Shire Council, 2025a). The Project aligns with these priorities by contributing to local jobs, investment, skills development, and community benefit sharing. The relevant local policy and strategic context is shown in Table 4-3.

Table 4-3 Local policy and strategic context

Key matters	Policy and strategic context
Community and stakeholder engagement	The Etheridge Shire Council Community Engagement Policy commits to meaningful and comprehensive engagement that facilitates dialogue with the community on key decisions and projects. It establishes a consistent, coordinated approach to community

Key matters	Policy and strategic context
	participation in Council decision-making, guided by the IAP2 spectrum and Local Government Association of Queensland principles (Etheridge Shire Council, 2024).
Workforce management	The Corporate Plan 2025-2029 aims to diversify the local economy by creating career pathways and employment opportunities for youth, and supporting skills development across youth, business, and industry (Etheridge Shire Council 2025a, p. 10–11).
Housing and accommodation	The Etheridge Shire Local Housing Action Plan identify lack of housing stock and availability as a key challenge for the area, with Etheridge Shire Council encouraging new private development to cater for mining and infrastructure projects. The Corporate Plan 2025-2029 also outlines plans to develop a range of land and housing options for youth, families, and older community members (Etheridge Shire Council, 2025a, p. 10).
Local business and industry procurement	The Corporate Plan 2025-2029 aims to improve business and policy outcomes in support of local businesses as part of its economic diversification strategy (Etheridge Shire Council, 2025a, p. 10).
Health and community wellbeing	The Corporate Plan 2025-2029 seeks to deliver quality social infrastructure, recreational opportunities, multi-age services, and a culturally aware community. Key commitments include upgrading open space and recreational infrastructure, ensuring childcare, youth, and assisted living services, advocating for health and emergency services across the Shire, and supporting community events and libraries (Etheridge Shire Council 2025a, p. 11–12). The Etheridge Shire Council Local Disaster Management Plan 2021 identifies eight significant hazards (including flooding, bushfire, cyclone, and major infrastructure failure) and sets objectives to reduce disaster impacts, support community resilience, and promote shared responsibility for safety.
Transport and infrastructure	The Corporate Plan 2025-2029 identifies a sustainable transport network as a strategic priority, with commitments to road upgrades, increased sealed roads, and improved public transport options

4.3. Community Profile

Population and demographic profile

Baseline population and demographic characteristics relevant to the social locality are shown in Table 4-4Table . Further detail is shown in Appendix C.

Table 4-4 Population and demographic trends and statistics – PSL and RSL

Indicator	PSL	RSL
Population	87 (2021)	727 (2025)
Population change	From the 2016 to 2021 ABS Census, the population of Einasleigh decreased from 92 persons to 87 persons.	Etheridge Shire has experienced a gradual decline in population over time, and this trend is projected to continue. The population was 1,022 in 2004 and has reduced to 727 in 2024. This trend is expected to continue, with projection that by 2046, the population is expected to fall further to around 630 people, representing an average annual decline of 0.6% over 25 years.
Population density	Population density of 0.02 persons per $km^{2.}$	The population density of the Shire is 0.02 persons per $km^{2.}$ The Shire is classified as 'Very Remote Australia' (100% of population), compared with 1% of Qld total population live in a very remote area.
Median Age	The median age is 47.	The median ages as of 2024 was 45.1 years of age. Median age is projected to rise to 53.3 years by 2046, indicating an ageing population.
Age profile	N/A	As at 30 June 2024, Etheridge Shire had a population with a relatively older age profile. Around 25.2 percent of residents were aged 65 years and over, while 58.5 percent were between 15 and 64 years, and 16.4 percent were under 15 years of age. This indicates an ageing population, with a smaller proportion of children compared to the working-age and older cohorts.

Indicator	PSL	RSL
Gender	62.9% of the population is male, and 37.1% female.	53.6% of the population is male, and 46.4% female.
Household income	Median weekly household income $1,156	Median weekly household income is $1,145. The median total family income in Etheridge LGA was $74,932 per year.
Education	N/A	7.5% of persons have a Bachelors Degree or above. 40.9% of persons highest level of schooling was Year 11 or 12.
Unemployment rate	N/A	The unemployment rate in Etheridge LGA at December 2025 was 2.8%. This equates to 12 persons who were unemployed. Since 2021, the rate has stayed low between 2.8 and 1.4%. The unemployment rate in the 'Rest of Qld' area was 3.9%.
Aboriginal and/or Torres Strait Islander population	N/A	48 people (6.4%) identified as Aboriginal peoples and/or Torres Strait Islander peoples in Etheridge LGA. This is higher than the Qld average where 4.6% of the population identified as Aboriginal and/or Torres Strait Islanders.

Source: (ABS, 2021a; Profile Id, 2026; Qld Statisticians Office, 2025)

Vulnerable and underrepresented groups

Vulnerable and underrepresented groups generally refer to individuals or communities who are more likely to experience disproportionate, adverse, or cumulative impacts from a project or development due to their social, economic, cultural, or physical circumstances. These groups may make up a small percentage of an affected community, and/or may have historically experienced, or currently experience, disadvantage owing to a particular characteristic or characteristics that may relate to their economic, social, cultural, geographic or political vulnerability (DSDIP, 2025c, p. 10, 11).

They may include:

- seniors,
- persons with a disability,

- culturally, linguistically, and religiously diverse people and groups,
- LGBTQIA+ people,
- single-parent families,
- people experiencing homeless,
- low income, under and unemployed people.

In Etheridge Shire, several of these groups face compounding disadvantage due to the remoteness of the area and the limited availability of targeted services and support. The Shire has no dedicated facilities to address the housing or support needs of groups of people experiencing domestic and family violence, disability, youth homelessness, family homelessness, or rough sleeping (Etheridge Shire Council, 2023). Council has identified all five groups as requiring further investigation and targeted responses, with domestic and family violence identified as a priority gap (Etheridge Shire Council, 2023).

As presented in Table C-3, First Nations residents represent a particularly vulnerable group within the Shire, facing higher rates of unemployment, lower educational attainment, and limited access to culturally appropriate health and support services compared to non-Indigenous residents (ABS, 2021). Older residents also face specific vulnerabilities, with 23.1% of the population aged 65 or over and limited residential aged care facility available locally, meaning those requiring higher-level care must leave their community (see Section 4.7.).

Furthermore, the town of Einasleigh recorded a notably high proportion of male residents, with males comprising 62.9% of the population as per the 2021 Census. The Qld SIA Guidelines acknowledges that male-dominated construction workforces can disproportionately impact women in host communities, including through pressure on affordable housing and heightened perceptions of safety concerns. Additionally, according to Australian Human Rights Commission and Workplace Gender Equality Agency, barriers in remote and very remote communities are amplified for some groups, with women in these locations more likely to face workplace discrimination, sexual harassment and violence, and economic insecurity (AHRC, 2017; WGEA, n.d.).

4.3.1. First Nations cultural heritage

Aboriginal People have had for many thousands of years, and continue to have, an intrinsic connection to country in Etheridge Shire. The Traditional Owners of the majority of land within the Shire are the Ewamian People, who have determined Native Title rights over large areas of land within the Shire and are the Traditional Owners of the land on which the Project is located. Other Traditional Owner groups connected to the Shire include the Tagalaka, Gugu Badhun, and Wakaman Peoples (Etheridge Shire Council, 2020a, p. 17).

The Native Title Determination for the Ewamian Peoples covers 28.671 km^2 of the Etheridge Shire west of the Great Dividing Range (refer Figure 4-2). It incorporates the towns of Mt Surprise, Georgetown, Kidston, Einasleigh and Forsayth (Ewamian People Aborginal Corporation, n.d.). Both the Ewamian Tatampi Puranga Aboriginal Corporation Registered Native Title Body Corporate (RNTBC) and the Ewamian Aboriginal Corporation (EPAC) represent the Ewamian People, who have an established vision for their country and culture, that being: sustainable economic, cultural, community and environmental outcomes for Ewamian people and country (Etheridge Shire Council, 2020a, p. 110). While Native Title has been extinguished over the proposed development site, the Proponent acknowledges the Traditional Custodians of the land

regardless of tenure and commits to continue working the Ewamian People for positive environmental, social, cultural and economic outcomes.

European settlement in Etheridge Shire led to the dispossession of many Aboriginal People, disrupting the continuous occupation of their ancestral lands. Despite the hardships and conflicts of this period, the growth of pastoral stations in the region created employment for Ewamian, Tagalaka, Gugu Badhun, and other Aboriginal People, who worked as stockmen and domestics. This allowed for a continued connection to country for some Traditional Owners (Etheridge Shire Council, 2020a, p. 18).

Ewamian Country contains many culturally significant sites, including rock art, scar trees, artefacts, occupation sites, bora grounds, stone grooves, and ceremonial grounds. Rock art is mostly found near sandstone escarpments along the Newcastle Ranges and close to water sources. Scar trees, artefacts, and ceremonial sites are spread throughout the region, while stone grooves are typically located in rivers and creeks (Etheridge Shire Council, 2020a, p. 18).

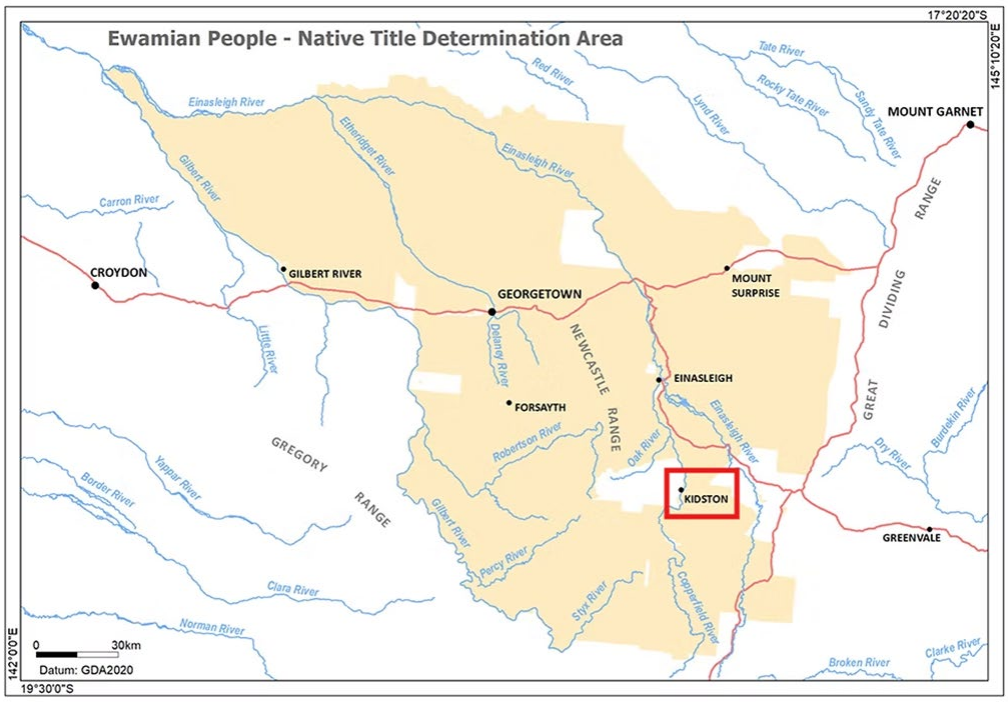


Figure 4-2 Map of the Ewamian People Native Title Determination Area

Source: (Ewamian People Aboriginal Corporation, n.d.)

4.4. Economy and workforce

A strong and diversified local economy is a strategic priority for Etheridge Shire. Council's Planning Scheme emphasises self-sufficiency through job creation, skills development and economic diversification, including expanded tourism opportunities (Etheridge Shire Council, 2020a).

The local economy is characterised by low unemployment, a small workforce, an ageing population and a strong agricultural base (NEMA, 2026; Qld Statisticians Office, 2025). These conditions provide important context for understanding the Project's interaction with the local economy. The following trends are notable, with further data presented in Appendix C.

Economic output and structure

Etheridge Shire had a Gross Regional Product (GRP) of $114 million in 2025, with a median personal income of $52,664 and 363 employed residents (NEMA, 2026). For a population of 727, this represents a GRP per capita of approximately $157,000.

The economy is heavily concentrated in a small number of industries. Agriculture, forestry and fishing is the largest contributor to economic output, generating $133 million in value added and employing 166 workers (NEMA, 2026).

Limited local workforce capacity to support major project delivery

The local workforce has approximately 483 jobs across the LGA and a labour force participation rate of 61.5% (ABS, 2021). The Shire's unemployment rate as of December 2025 was 2.8%, representing only 12 persons who were unemployed (Qld Statisticians Office, 2025). This indicates that the existing workforce is largely in employment, meaning there is limited available labour that could be directly drawn into Project roles without displacing workers from existing industries.

Together, technicians and trades workers (9.1%), machinery operators and drivers (8.2%), and labourers (19.5%) account for approximately 36.8% of the local workforce, indicating strong baseline industrial workforce capacity that may be relevant to Project construction needs (Qld Statisticians Office, 2025). However, given the small absolute size of the local workforce, limited history of renewable energy projects in the area and near-full employment conditions, the pool of available workers in these categories is likely to be limited in practice.

Agriculture-dominated economy

Agriculture is the dominant industry and land use in the LGA, with cattle grazing the predominant activity and pastoral leases covering a large portion of the Shire's land area (Etheridge Shire Council, 2020a, p. 12). This is reflected in ABS data, with agriculture accounting for 39.7% of employment and 65% of registered businesses in the LGA in the agricultural industry (ABS, 2021).

A significant economic development ambition is the proposed Etheridge Shire Agricultural and Irrigation Precinct, a joint initiative between Etheridge Shire Council and Regional Development Australia Tropical North (RDATN). Consultation with RDATN highlighted that they would like to see the LGA become a more established economic zone for agriculture.

Tourism is a significant economic driver in the region

Tourism plays an important role in the local economy, with the Shire positioned along the Savannah Way tourist route and drawing visitors to attractions including Cobbold Gorge, Undara Volcanic National Park, and the Savannahlander rail service. The tourist population is predominantly comprised of 'grey nomads', retirees travelling by campervan and caravan. Visitation is concentrated in the cooler winter months, and one of Council's priorities is extending the seasons to broaden the economic benefit of tourism beyond this peak period (Etheridge Shire Council, 2020a, p. 12, 13).

The Etheridge Shire Council's Planning Scheme supports 'developments that enhance, diversify and value-add to the tourist experiences and the tourism economy'. It is noted that Etheridge Shire Council is supportive of further development that enhances Aboriginal Tourism ventures, heritage preservation, and expanded short-term accommodation options in rural areas (p. 12). One such example of this is the Talaroo Hot Springs located between Mount Surprise and Georgetown, and on the Savannah Way, a road trip path linking Cairns to Broome. The Talaroo Hot Springs is a tourism development run by the Ewamian People Aboriginal Corporation and 'is managed as an Indigenous Protected Area (IPA) which is a self-declared area that Traditional Owners agree to manage for the protection of natural and cultural values in accordance with guidelines of the International Union for the Conservation of Nature' (Ewamian People Aboriginal Corporation, n.d.).

Modest economic conditions relative to national benchmarks

Despite the challenges of very remote location and a small population, economic conditions in Etheridge Shire are broadly average when measured at the LGA level. Etheridge Shire's decile of 6[5] places it in the upper half of Australian communities, indicating average to moderately above-average socio-economic conditions relative to the national distribution (ABS, 2021). The median weekly household income ($1,145) is lower in the LGA than that across Very Remote Australia (Qld) and statewide medians. While the median incomes are lower in the LGA, the difference in cost of living in regional, rural and remote areas is difficult to quantify compared to urban areas due to differences in costs of living. Housing costs tend to be considerably higher in cities according to the Queensland Council of Social Service. At the same time, remote areas carry different cost burdens: a couple with two children in a very remote Qld location pays an estimated $5,507.60 more per annum for equivalent food purchase (QCOSS, 2025).

Limited secondary education opportunities and educational attainment

Etheridge Shire has three government primary schools: Georgetown State School (Kindy to Year 6, approximately 50 students), Mt Surprise State School (Prep to Year 6, approximately 13 students), and Forsayth State School (Prep to Year 6, approximately 3 students) (ESC, n.d.-b; SIA Interview, April 2026). Einasleigh has no primary school, with three school-aged children accessing distance education. There are no secondary schools in the Shire. Most students transition to boarding school on completion of primary school, with All Souls St Gabriel's School in Charters Towers described as the most common destination. Some undertake secondary study through distance education (SIA Interview, April 2026).

Educational attainment is below state and regional averages. At the 2021 Census, 12.8% of residents aged 15 and over had completed Year 12 as their highest level of attainment, compared with 15.5% in Qld, and 14.7% in Outback Qld (ABS, 2021). Those with Year 9 or below as their highest level of schooling represented 13.0% of the population, almost double the statewide figure of 6.7%, and higher than that across Outback Qld (9.7%) (ABS, 2021).

The absence of secondary schooling in the Shire means that school leavers typically relocate to Charters Towers or other regional centres. This may limit the Proponent's ability to engage locally with young people around employment and training opportunities associated with the Project.

[5] The SEIFA Index of Relative Socio-economic Advantage and Disadvantage (IRSAD) ranks areas across Australia on a scale of 1 to 10, where decile 1 represents the most disadvantaged areas and decile 10 the most advantaged.

4.5. Local business and industry procurement

Local business capacity to become involved in the Project is an important element of the economic baseline for the Project. Etheridge Shire has limited prior exposure to major renewable energy projects outside the operations at the Kidston Clean Energy Hub.

Small business base dominated by agriculture

As at 30 June 2025, there were 220 registered businesses in Etheridge LGA. The vast majority are small operations. 68.2% are non-employing sole trader or family enterprises, 24.5% employ between one and four people, and only 17 businesses (7.8%) employ five or more people (Qld Statisticians Office, 2025).

The business profile is heavily concentrated in agriculture, with 65% of all registered businesses in the agriculture, forestry and fishing industry. Construction accounts for 9.1% (20 businesses) and accommodation and food services for 4.5% (10 businesses).

Kidston Clean Energy Hub

The previous stages at the Clean Energy Hub provides some precedent for local business engagement with major project delivery. Genex reported $7.2 million in First Nations procurement spend on the K2-Hydro .

4.6. Housing and accommodation

The Etheridge Shire housing market is characterised by extremely limited stock with 260 dwellings as of the 2021 Census and recent data showing very low vacancy rates presenting significant challenges for both existing residents and incoming workforce. The Project does not intend to utilise local long term rental accommodation for the Project's construction workforce (see Section 2.3.1.), however the local housing and accommodation context is an important factor in considering the existing social conditions.

Housing stock and availability

Housing stock is limited and predominantly owner-occupied, with separate houses making up the majority of dwellings and a notable proportion of caravans and non-conventional dwellings reflecting the transient nature of parts of the local population. The market is extremely tight, with limited local real estate agents, very few recorded sales in recent years, and significant barriers to home ownership including bank deposit requirements of up to 60% in remote areas. Council and State Government both provide staff housing to attract qualified workers, though supply does not always meet demand (Etheridge Shire Council, 2023).

The private rental market is critically constrained, with vacancy rates sitting at 0.1%[6] as of January 2026 across the region (Postcode 4871) and not being above 2% since 2020. There is no meaningful pipeline of new private rental supply (SQM Research, 2026).

The Etheridge Shire Council's Local Housing Action Plan (2021-2025) notes that tradespeople and contractors already rely heavily on motel and caravan park accommodation which is frequently unavailable.

[6] According to Eview Real Estate (2022), vacancy rate of around 3% is generally regarded as indicative of a balanced rental market. Rates above this level suggest an oversupply of rental properties, where dwellings may remain vacant for longer periods and rental prices may soften. Vacancy rates below 3% indicate a tight rental market, characterised by strong demand, limited availability and upward pressure on rents.

Need for more diverse and social housing

Demand for social and specialist housing across the Shire outpaces available supply. Georgetown has only five social housing dwellings, and stakeholder consultation undertaken for Etheridge Shire's Local Housing Action Plan 2021-25 (Etheridge Shire Council, 2023b) suggests that unmet need is underrepresented in formal demand registers due to community disengagement from application processes. Overcrowding and informal accommodation arrangements are recurring themes in the area, with identified gaps in cohort-specific housing including for domestic and family violence, disability, and youth homelessness (Etheridge Shire Council, 2023b).

There are currently no dedicated facilities in Georgetown to support victims of domestic and family violence, and Council has identified this as a priority gap, estimating a need for at least two new facilities. Broader cohort-specific housing needs, including for people with disability and youth homelessness were also identified as gaps (Etheridge Shire Council, 2023b).

Temporary accommodation options are preferable to reduce burden on constrained housing system

Given the constraints outlined above, accommodating the construction workforce within the local housing or rental market would likely place additional pressure on an already limited supply. There is evidence that housing availability is already constraining the delivery of essential services in the Shire. For example, it is noted in the Etheridge Shire Council's Housing Action Plan that the ability of government agencies to attract and retain staff in Georgetown is constrained by limited housing availability. This has flow-on effects for the delivery of essential services across the Shire. It is also noted that Council has faced challenges to hire staff due to a lack of suitable housing (Etheridge Shire Council, 2023b).

The Proponent is proposing to accommodate the construction workforce at the Oaks Rush Accommodation Camp, a purpose-built facility located at Gilberton Road (refer Section 2.3.1). This arrangement avoids placing demand on local housing stock and is consistent with the FIFO workforce model anticipated for the Project. It is the preferred approach from a social impact perspective, as it allows construction activity to proceed without compounding existing housing pressures or further constraining the Shire's ability to attract and retain essential service workers. When spare capacity is available, the facility also provides accommodation, meals and refreshments to the local community and tourists travelling through the area.

4.7. Health and wellbeing

Community health and wellbeing in Etheridge Shire reflect the broader challenges faced by very remote communities across Queensland. Distance from services, workforce shortages, and limited social infrastructure combine to create compounding disadvantage for residents. The Etheridge Planning Scheme (2020) identifies a healthy and resilient community as a strategic outcome for the Shire. This encompasses support for inclusive spaces and community infrastructure across all age groups, while preserving the rural character that residents value.

The Etheridge Shire Corporate Plan 2025-2029 (Etheridge Shire Council, n.d.) identifies shortfalls in childcare, aged care, health advocacy, and digital connectivity as priority areas for action, acknowledging that current provision falls short of community needs.

The following trends are relevant to understanding the social baseline and the context in which the Project will be delivered.

Ageing population

Etheridge Shire has an older and ageing population relative to the state, with implications for workforce availability, service demand and community resilience.

As at 30 June 2024, the proportion of the estimated resident population aged 65 years and over for Etheridge LGA was 25.2%. This is higher than the statewide average of 17.2%. Furthermore, the median age was 45.1 years compared to 38.5 years across the state (Qld Statisticians Office, 2025). The percentage of the population that is in the 15-64 year age group (considered working age) is 58.5%, which is less than the statewide average (64.8%).

As at 30 June 2046, the median age projection for Etheridge LGA is 53.3 years. This indicated that the expected trend is for the age demographics in the LGA to get older (Qld Statisticians Office, 2025).

A smaller working age population limits the local labour pool available to support Project delivery. An ageing population also places increasing demand on health, aged care and social support services that are already limited in the Shire.

First Nations Health Services

First Nations residents make up approximately 6.4% of the Etheridge Shire population, above both the Queensland (4.6%) and national (3.2%) averages (ABS, 2021). There are no First Nations healthcare or wellbeing services within the Shire, with the nearest providers located approximately four hours' drive away. First Nations people in the Shire face compounding disadvantage across health, education, and employment, with higher unemployment rates (10%, compared with 1.6% for non-Indigenous residents), lower educational attainment, and a higher need for assistance than non-Indigenous residents (ABS, 2021).

Nationally, the life expectancy gap between First Nations and non-First Nations Australians stands at 8.8 years for males and 8.1 years for females. Among First Nations people, those living in very remote areas have a life expectancy approximately five years lower than First Nations people in major cities (ABS, 2023; AIHW, 2024).

Limited local healthcare provision with sufficient capacity to meet Project workforce needs

Health service delivery in Etheridge Shire is mostly visiting and intermittent, with no inpatient or surgical capacity locally and the nearest major hospital approximately 400 km away in Cairns. Georgetown is classified as designated Distribution Priority Area, reflecting acute workforce shortage. Allied health, oral health, and specialist services visit on rosters of fortnightly to quarterly frequency. The North Queensland Primary Health Network are now providing regular services to Georgetown through Multidisciplinary Allied Health Teams. The Primary Health Network noted that in absence of these types of services, it is common for rural residents to need to relocate to the cities to receive the care that they need (Primary Health Network - North Queensland, 2025). The Forsayth Primary Health Centre is the closest Queensland Health clinic to the Project site and operates as a single nurse-led service, with no private general practitioners located in the region.

For this Project, the Proponent will maintain onsite health and emergency response capacity, including a permanent onsite nurse and a helipad and airstrip capable of accommodating Royal Flying Doctor Service or other emergency medical transport if required.

Targeted consultation for the SIA was undertaken with key healthcare stakeholders, including North and West Remote Health, North Queensland Primary Health Network (NQPHN), Forsayth Primary Health Centre

and Etheridge Cares, to understand the existing health services context. Through engagement, Health stakeholders did not anticipate significant pressure on local health services, given the Project's FIFO workforce model and the predominance of a healthy, working-age population.

Local health providers indicated that use of local health services by the existing Kidston workforce has been limited, with tetanus vaccinations identified as the most common interaction, requiring travel to Forsayth. Stakeholders advised that this level of use has not constrained service capacity historically, and additional demand is considered unlikely, particularly as the proposed Project workforce is smaller than during earlier development stages.

4.8. Potential concurrent demand

The potential for concurrent demand from other major projects is relevant to understanding cumulative pressures on local workforce, services and infrastructure. The pipeline of projects in the area is small, and the most likely source of cumulative impact relates to the existing and ongoing operations at the Kidston Clean Energy Hub.

Kidston Clean Energy Hub

The Clean Energy Hub currently comprises the operational 50 MW Kidston Solar Project and the 250 MW K2-Hydro Project, which is expected to commence commissioning in 2026 (see Figure 2-1).

The Proponent is developing a SIMP for the Clean Energy Hub as a whole (refer Appendix D), which provides a mechanism for social impact management across all stages of development at the site, not just the proposed BSF.

Other projects

A small number of other projects are located within the broader area. The Forsayth Wind Farm, a proposed 150 MW project located approximately 60 km northwest of the Project site, received development approval in 2014 but has no confirmed construction timeline. The likelihood of concurrent demand from this project is unlikely.

The Agate Creek Gold Project, operated by Savannah Goldfields Limited, is located approximately 60 km west of the Project site within Etheridge Shire. The project has a granted mining lease and has undertaken intermittent small-scale production since 2019, with Phase 1 employing approximately 20 workers. A proposed Phase 2 involving an onsite processing plant and up to 80 workers has not yet commenced.

The Etheridge Shire Agricultural and Irrigation Precinct Proposal, a joint initiative between Etheridge Shire Council and Regional Development Australia Tropical North, is under investigation. If it proceeds, it could support expanded agricultural production and increase energy and workforce demand in the area over the medium term. This is not expected to generate concurrent demand during the Project's construction phase.

The below Table 4-5 shows major projects within 90km of the Project site.

Table 4-5 Major projects with 90km of Project site

Project	LGA	Project size (MW)	Owner	Stage of delivery	Approximate distance from Project site[7]	Likelihood of concurrent demand[8]
Kidston Pumped Hydro Project (K2-Hydro)	Etheridge Shire Council	250	Genex	Construction	> 1km	Likely
Kidston Solar Project	Etheridge Shire Council	50	Genex	Operational	< 1km	Likely
Agate Creek Gold Project	Etheridge Shire Council	n/a	Savannah Goldfields Limited	Operational	60km west	Potential
Forsayth Wind Farm	Etheridge Shire Council	150	Iberdrola	Approved (in 2014), no confirmed timeline	60km northwest of Project site.	Unlikely
Etheridge Agricultural and Irrigation Precinct Proposal	Etheridge Shire Council	n/a	Etheridge Shire Council/Regional Development Australia – Tropical North	Proposed	n/a	Unlikely

[7] Straight line distance

[8] Assessed based on the likelihood of overlapping construction or intensified activity during the Project's construction phase, considering each project's delivery stage, confirmed timelines and proximity.

5. Impact assessment

Overall, the assessment identifies a mix of positive and negative social impacts, with clear opportunities for community investment, contribution to regional energy supply, local employment, training and business participation. Potential negative impacts were identified in relation to road damage and safety risks, reduced community trust due to legacy engagement experiences from earlier stages of the Clean Energy Hub, perceived fire risk and limited flow-on benefits for local communities.

The key categories of social impact used in this assessment are consistent with the IAIA's Guidance Note (Vanclay et al., 2015) and the impact categories defined in the Qld SIA Guideline (DSDIP, 2025b) (refer Section 3.5). The categories of impact include:

- Community
- Way of life
- Culture
- Health and wellbeing
- Surroundings
- Accessibility
- Livelihoods

The evaluated impact significance across these categories is described following. If no impact relevant to the Project was identified through this assessment, the category is not included in this section of the SIA.

Evaluated impact significance

Overall sentiment toward the Project was mixed, with local community members more likely to express negative or indifferent views, while regional and industry stakeholders more commonly emphasised potential benefits, particularly related to opportunities for local jobs, training and procurement. The opportunity for increased community investment was a common theme across all stakeholder groups.

The following potential positive social impacts relating to *Community*, *Accessibility* and *Livelihoods* impact categories were identified:

- Increased community investment.
- Contribution to regional energy supply.
- Increased local employment opportunities.
- Increased opportunities for training and skills development.
- Increased opportunities for local businesses.

The following potential negative impacts relating to *Community, Health and wellbeing, Accessibility and Livelihoods* categories were evaluated:

- Reduced trust due to legacy engagement experiences.
- Increased fire risk.

- Road damage and safety risks from heavy vehicle traffic.
- Limited flow-on economic benefits for local communities.

5.1. Community

Community – *Changes to community values and/or the way the community functions*

5.1.1. Increased community investment

Community investment delivered through a CBA was consistently highlighted during engagement as a positive outcome, with community members and regional stakeholders identifying a wide range of specific priority areas. Given the small and dispersed population, limited rate revenue and high dependence on grant funding in the locality, investment in services and development initiatives was seen as having the potential to generate a disproportionately positive impact across surrounding communities.

The social baseline and consultation identified a number of existing challenges affecting community wellbeing in Etheridge Shire that community investment has the potential to address. The community is geographically isolated, experiences harsh weather conditions and natural disasters and has an ageing and declining population. Social isolation is a significant concern, particularly among older residents who can no longer drive.

Priorities raised through consultation centred on improving access to aged care and health services, strengthening telecommunications and digital connectivity, supporting youth wellbeing and social coordination, and building local workforce and training pathways. Specific initiatives identified include funding for a social coordinator role and a community transport bus to reduce isolation among older residents through Etheridge Cares, non-alcohol community social events, teenage wellbeing programs and sponsorship of local events such as the Einasleigh races and rodeo. These reflect existing gaps in service provision that are independent of the Project, but which the CBA and sustained industry presence have the potential to address. A detailed list of identified community benefit priorities is shown in Section 6.6.

There are also opportunities for the Project to contribute to surrounding communities outside the CBA. For example, Etheridge Cares noted that the Clean Energy Hub had donated its recyclable cans as part of the Containers for Change initiative, generating tens of thousands of dollars in funding, an outcome that was very significant for the organisation.

The Project is not anticipated to exacerbate existing community vulnerabilities. Through the CBA, sustained industry presence and the visibility of a major employer in the Shire, there is a genuine opportunity to support community resilience and social wellbeing alongside the direct economic benefits of the Project.

Social impact significance rating[9]

The community development initiatives identified by the host communities and host Council will provide an overall **Positive** impact.

[9] Refer to impact significance matrix (Table 3-5)

Table 5-1 Positive impact of increased community investment

Impacts	Rating
Increased community investment	Positive

5.1.2. Reduced trust due to legacy engagement experiences

Community members in Einasleigh regularly described a lack of meaningful consultation from the Proponent during earlier stages of the Clean Energy Hub. These concerns relate specifically to historical engagement activities, not to the proposed BSF. However, these earlier experiences have created a legacy of reduced trust that may influence how the community perceives future engagement efforts.

Engagement during previous project stages was frequently characterised as reactive rather than proactive, with one community member stating that it had "*been non-existent until they decided they might have to do a bit of damage control*" and another noting that they felt they were being "*dictated to*" rather than engaged in a genuine two-way conversation. These experiences have shaped a perception that the Proponent had not prioritised transparent, open or collaborative communication during earlier phases of the Clean Energy Hub's development.

Community members also reported that local project staff appeared to have limited knowledge of on-site activities, making it difficult for residents to obtain clear and consistent information about activities that may affect them. Over time, these interactions have reinforced a broader sense that the community is not kept adequately informed and that engagement has been conducted as a compliance requirement rather than a genuine effort to communicate.

Social impact significance rating

Collectively, the community's earlier engagement experiences form important context for how future engagement associated with the Project may be received. Reduced trust due to legacy engagement experiences is rated as having a **Moderate** impact significance.

Table 5-2 Negative impact of reduced trust due to legacy engagement experiences

Impacts	Rating
Reduced trust due to legacy engagement experiences	[Magnitude level – **Moderate;** Vulnerability level – **Low**] Evaluated impact significance – **Moderate**

5.2. Culture

Culture – *Impacts on culture, history, and ability to access cultural resources*

5.2.1. Potential for disruption to cultural heritage sites

Genex has completed a cultural heritage survey for the proposed BSF area in collaboration with the EPAC and received clearance for the Project footprint.[10]

It was noted that the Project is sited on land already substantially disturbed by historical mining, and EPAC has expressed support for this location. EPAC's expectation is continued engagement through construction and operation, including notification of any design changes affecting areas not yet surveyed.

Social impact significance rating

Noting the cultural heritage survey results the negative impact of potential for disruption to cultural heritage sites is rated as having **Low** impact significance.

Table 5-3 Potential for disruption to cultural heritage sites

Impacts	Rating
Potential for disruption to cultural heritage sites	[Magnitude level – **Low;** Vulnerability level – **Low**] Evaluated impact significance – **Low**

5.3. Health and wellbeing

Health and wellbeing – *Impacts on communities' physical safety, exposure to hazards or risks, and access to and control over resources*

5.3.1. Increased fire risk

Fire risk associated with BSF technology was raised by one community member in Einasleigh but was not a widespread concern. Consultation with the Einasleigh Rural Fire Brigade indicated that on-site firefighting capacity at the Clean Energy Hub is substantial, including multiple 2,000-litre units, dam fill points and permanent firefighting staff. Genex shares equipment with the Einasleigh Rural Fire Brigade and permanent staff assist with fires in the surrounding area.

A Natural Hazard Risk Assessment[11] and Bushfire Management Plan[12] has been prepared for the Project. The aim of these reports is to determine the level of natural hazard risk to the Project and identify potential protection measures, including management of bushfire risks from the Project. The report acknowledges that Kidston is exposed to bushfire risk due to its rural setting and surrounding grasslands and eucalypt

[10] Consultation with EPAC, June 2026

[11] NGH - 250711 - Kidston Natural Hazard Risk Assessment – Final V1 – 30/04/26

[12] NGH - 250711 - Kidston Bushfire Management Plan – Final V1 – 30/04/26

woodlands, and that risks are higher during the dry season from July to October. It was determined that the Project site is considered to have high bushfire risk (p. 10).

To manage these risks, the report recommends the development of an Asset Protection Zone as a managed buffer between bush fire hazards and buildings, designed to reduce fuel loads, radiant heat, flame, smoke, and ember attack (p. 13). Bushfire mitigation measures in the Bushfire Management Plan also include appropriate Project site access, water supply, and fire protection and suppression equipment.

Overall, the report determined that the Project with the recommended management measures is compliant with the three relevant Performance Objectives set out in State Code 27 (PO13, PO14, and PO15).

Social impact significance rating

Given the low concern expressed through the engagement process and assessment of risk in the Natural Hazards Risk Assessment, the negative impact of increased pressure on fire risk is rated as having a **Low** impact significance.

Table 5-4 Negative impact of increased fire risk

Impacts	Rating
Increased fire risk	[Magnitude level – **Low;** Vulnerability level – **Low**] Evaluated impact significance – **Low**

5.4. Accessibility

Accessibility – *Impacts on communities' access to, and quality of, infrastructure, services and facilities*

5.4.1. Road damage and safety risks from heavy vehicle traffic

Deterioration of road conditions associated with Project-related heavy vehicle traffic was the most consistently raised concern during consultation and represents the highest-significance negative impact identified within this SIA. This issue was raised by the Einasleigh Progress Association, individual residents, and regional stakeholders, informed by direct experience of road damage during earlier stages of the Clean Energy Hub and concern about future construction traffic associated with the Project.

Community concern was focused on the State controlled Gregory Development Road, which includes approximately 75 km of unsealed surface between the Lynd Junction and Einasleigh. This road is the primary access route for residents to Charters Towers, Townsville and the Tablelands, with the alternative route via Georgetown adding approximately 3.5 hours to travel time. The road also serves as a critical freight route for regional cattle stations transporting livestock to market.

Community members reported that heavy vehicle movements during earlier project stages contributed to road deterioration, particularly at the Kidston site turn-off, where damage was perceived as unresolved. Stakeholders also noted inefficient contractor travel practices and increased road wear during wet

conditions, when unsealed surfaces are most vulnerable, raising safety concerns. One stakeholder explained that "*that is our main access in and out of this place. Not only for us locals down here. All our cattle stations, people taking their kids to school in Charters Towers. They all use that road*."

Impacts extend beyond travel inconvenience. Cattle station operators noted that road closures or severe deterioration can delay livestock transport, affecting animal condition and sale outcomes, while the Einasleigh Rural Fire Brigade highlighted the importance of reliable road access for emergency response. Regional stakeholders, including Gulf Savannah Development, also described the State controlled Gregory Development Road as a key economic, community and tourism asset.

It is noted that the BSF workforce is expected to travel primarily between the accommodation facility and the Project site, which is likely to limit broader road use. A Traffic Impact Assessment, including a Heavy Vehicle and OSOM Construction Strategy,[13] has been prepared and concludes that safe access can be achieved using the existing road network, subject to standard traffic management measures and limited, localised upgrades.

Social impact significance rating

The negative impact of road damage and safety risks from heavy vehicle traffic is rated as having **Moderate** impact significance.

Table 5-5 Negative impact of road damage and safety risks from heavy vehicle traffic

Impacts	Rating
Road damage and safety risks from heavy vehicle traffic	High level of concern was expressed through engagement process. [Magnitude level – **Moderate**; Vulnerability level – **Low**] Evaluated impact significance – **Moderate**

5.4.2. Contribution to regional energy supply

Consultation indicated that the broader Gulf Savannah region is experiencing power supply constraints, including brownouts, and that the Project represents a positive opportunity to contribute to regional grid resilience through battery storage. Regional Development Australia and Gulf Savannah Development both noted that the Project's potential contribution to regional energy supply could support broader economic diversification and growth.

This opportunity was raised in the context of several existing and anticipated drivers of regional electricity demand, including:

- The stalling of the Normanton Solar Farm project due to the absence of a government-backed power purchase agreement.

[13] Rytenskild, 1 June 2026, RTE Ref: 25381

- The proposed Etheridge Shire Agricultural and Irrigation Precinct, identified as a project of State significance and expected to increase regional energy demand.
- Several mining projects currently in planning or development stages, which are likely to require increased power supply once operational, including the Esmeralda Graphite Project and the Jubilee Metals Gold Mine.

It is noted that the realisation of this potential positive impact is contingent on grid connection to enable stored energy to support the network. Consultation indicated that the extent to which the Project will be able to supply energy into the regional grid remains a point of uncertainty for the community.

Social impact significance rating

The contribution to regional energy supply was assessed as **Positive.**

Table 5-6 Positive impact of a contribution to regional energy supply

Impacts	Rating
Contribution to regional energy supply	Positive

5.5. Livelihoods

5.5.1. Contribution to local employment, flow-on social and economic benefits

The Project will generate employment during construction and operation, and in the context of Etheridge Shire's small population, even a limited number of locally filled roles has the potential to deliver meaningful social and economic benefits. This was supported through consultation, with stakeholders expressing positive views about opportunities for local employment.

Construction employment is anticipated to be predominantly FIFO, consistent with earlier project stages. Consultation confirmed that construction employment opportunities for local residents are limited by the small permanent labour market, low unemployment rate (2.5%) and the specialist nature of many construction roles. It was also shared that the region faces significant skills shortages, particularly in trades such as plumbing, electrical and building, alongside broader challenges with workforce attraction and retention in a community experiencing population decline, an ageing demographic and limited housing stock.

The EPAC also expressed interest in employment and training on Country at Kidston. Consultation with EPAC identified particular interest in ongoing roles, training scholarships and contracting for the Ewamian Rangers and other Ewamian owned businesses. EPAC requested that opportunities be shared through Ewamian Limited for distribution to Ewamian People, providing a defined pathway for local First Nations employment.

Genex's track record at the Kidston site provides a positive foundation for employment outcomes. During construction of the Kidston Solar Project, 170 jobs were created with 15% filled by First Nations People and 35% by women. The K2-Hydro Project has generated over 800 jobs at the site and along the transmission

route, with $7.2 million allocated to First Nations procurement. Genex currently employs three local residents on a full-time basis to manage site operations, with several others engaged on a casual or contractor basis since 2015 (Genex, 2025).

Further, Gulf Savannah Development framed the Clean Energy Hub's industry presence in Etheridge Shire as strategically important beyond direct employment numbers. Their view was that a major employer in the community may help support the case for continued government investment in essential services such as police, teachers and nurse practitioners. This can in turn underpin improved population retention and social development outcomes.

Social impact significance rating

Overall, contribution to local employment, flow-on social and economic benefits was assessed as **Positive**.

Table 5-7 Positive impact of contribution to local employment, flow-on social and economic benefits

Impacts	Rating
Contribution to local employment, flow-on social and economic benefits	Positive

5.5.2. Increased opportunities for training and skills development

The Project provides the opportunity for training and skills enhancement to address the current workforce skills shortage and outmigration of young people that is constraining long-term regional growth. Apprenticeships and traineeships in those trades needed for the Project were identified through consultation as a genuine legacy opportunity, with potential to support longer term employment outcomes for local and First Nations workers. Given the small population in Etheridge Shire and the broader Gulf Savannah Region, even a small number of trainees or apprentices could have a significant impact on outcomes for the local community and economy.

Regional Development Australia noted that support for business owners taking on apprentices is an important potential community benefit, noting that the costs and demands of supervising apprentices can be a barrier for small operators in remote areas. Manufacturing Skills Queensland recommended mapping the capacity of local Registered Training Organisations to assess whether training can be delivered close to the Project site, noting that where training and employment can be co-located, the overall workforce development outcome is significantly stronger.

Through engagement, Australian Training Works, a First Nations training provider, expressed interest in being involved in the Project. They emphasised that early engagement is essential for success, noting that they need to understand the types of jobs required, prerequisite certifications, and the lead time into Project commencement to identify and prepare workers. Without sufficient notice, it is difficult to deliver quality workforce outcomes. Entry level roles such as labourers and gardeners were identified as genuine opportunities, including for women returning to work and people without formal qualifications.

Gulf Savannah Development also noted that their view was that the existing Kidston First Nations employment pathways has not extended wide enough into the Gulf, and that communities in Carpentaria Shire, Doomadgee and Mornington Island have high unemployment and are underrepresented in industry employment, skills and training. Expanding pathways into these communities through skills development, traineeships and apprenticeships was suggested for the Project.

Social impact significance rating

Increased opportunities for training and skills development were assessed as **Positive**.

Table 5-8 Positive impact of increased opportunities for training and skills development

Impacts	Rating
Increased opportunities for training and skills development	Positive

5.5.3. Increased opportunities for local businesses

Consultation suggested that local businesses in Etheridge Shire are willing to participate in Project procurement but face practical barriers to doing so. The Social Baseline outlines that the profile of local business is dominated by self-employing agriculture businesses and only 6.5% of businesses have more than five employees (see Section 4.5).

One local business operator, who worked on previous Kidston stages, noted that the Project represents a significant opportunity for local contractors. However, the safety and compliance requirements at Kidston represented a significant step up from what local businesses are used to. Help with prequalification, early notice of requirements and a clear scope of works were identified as important not to disadvantage local businesses.

Stakeholders recommended a range of practical measures to improve local business participation, including the following:

- Notifying the Ewamian People of any employment, training and contracting opportunities via EPAC.
- Using the Supply Queensland platform and encouraging smaller businesses to bid jointly.
- Breaking contracts into smaller packages.
- A tiered procurement approach, prioritising Etheridge Shire businesses first, then the broader Gulf region, then Far North Queensland.
- Local information sessions and ‘meet the buyer events’ with businesses. It was emphasised the importance of adequate lead time and clear scopes of work.

One industry stakeholder also shared that many local businesses have limited or no websites, booking platforms or social media presence. This can mean that businesses, who may be well-placed to engage on the Project, are difficult to identify and contact. This gap may be bridged to some extent by Gulf Savannah Development who support local procurement by maintaining their own business registers for Council areas

across the region. Consultation with EPAC noted that they are currently in the process of establishing a list of Ewamian owned businesses/joint ventures that could be provided to Genex as suppliers once completed.

Through consultation, local procurement targets were identified as desirable. It was noted that Genex achieved acceptable First Nations procurement on the K2-Hydro Project, which was viewed positively and provides a benchmark to build on for Stage 3. Australian Training Works suggested looking at Qld State Governments Procurement Policy as a minimum benchmark for First Nations and local employment.

Social impact significance rating

Increased opportunities for local businesses were assessed as **Positive**.

Table 5-9 Positive impact of increased opportunities for local businesses

Impacts	Rating
Increased opportunities for local businesses	Positive

5.5.4. Limited flow-on economic benefits for local communities

Community members raised concerns about limited flow-on benefits for the local community, informed by their experience of previous stages at the Clean Energy Hub. Across multiple consultations, stakeholders expressed a view that earlier construction and operational activity generated minimal local economic uplift. One community member summarised this sentiment, stating that "*there's been no benefit, no benefit at all to anybody, let alone the local community*".

A former hospitality business operator in Einasleigh noted that their business experienced no discernible benefit from construction activity during earlier project stages, despite the proximity of the workforce. This was attributed to the largely FIFO nature of the workforce and restrictions on workers leaving site. This was noted in the context that operating a business in the region is already challenging, particularly during the wet season when tourism activity declines, and that opportunities for the workforce to spend locally were viewed as significant for supporting business viability.

These experiences reflect a broader concern that the economic benefits of previous stages of the Clean Energy Hub have generated limited indirect benefits for surrounding communities. While this perceived lack of flow-on benefits contributes to community scepticism about the Project's local economic value, it also highlights opportunities for the Proponent to adopt measures that more deliberately enable workforce interaction with and expenditure in local towns. Opportunities raised through consultation included facilitating planned opportunities for workforce members to visit local hospitality venues on a rotating basis.

Social impact significance rating

Limited flow-on economic benefits for local communities is rated as having **Low** impact significance.

Table 5-10 Negative impact of limited flow-on economic benefits for local communities

Impacts	Rating
Limited flow-on economic benefits for local communities	[Magnitude level – **Low;** Vulnerability level – **Low**] Evaluated impact significance – **Low**

5.6. Summary of social impacts

A summary of the positive and negative social impacts identified in Section 5 is shown in Table 5-11 and Table 5-12.

Table 5-11 Social impact assessment summary – positive impacts

Potential social impacts	Project Aspect / Activity (incl. cumulative)	Project stage [14]	Community of Interest	Evaluated Impact significance [15]	Existing / potential enhancement measures	Residual significance [16]
Community *– Changes to community values and/or the way the community functions*						
Increased community investment	Community Benefit Agreement. Contribution of multiple projects to achieve legacy benefits (cumulative impact).	C, O	Broader community (including vulnerable groups), Local service providers, Community groups, Etheridge Shire Council	Positive	Execute a **CBA**, informed by the *Community benefit priorities* identified as part of the SIA (refer Section 6.6). Prepare a **SIMP** to showcase the implementation of management measures and reference strategies that are anticipated to be formalised in the CBA (refer Appendix D). Ongoing engagement consistent with the Proponent's **CSEP** (refer Appendix A).	Positive

[14] Establishment (E), Construction (C), Operation (O), Decommissioning (D).

[15] Unmitigated rating: Major, High, Moderate, Low, Insignificant.

[16] With proposed management measures: Major, High, Moderate, Low, Insignificant.

Potential social impacts	Project Aspect / Activity (incl. cumulative)	Project stage [14]	Community of Interest	Evaluated Impact significance [15]	Existing / potential enhancement measures	Residual significance [16]
Accessibility – Impacts on communities' access to, and quality of, infrastructure, services and facilities						
Contribution to regional energy supply	Potential for the BSF to contribute to a more secure energy supply in the region and support the development of other major projects.	E, C	Broader community, Etheridge Shire Council, Local business/ industry	Positive	Ongoing engagement consistent with the Proponent's **CSEP** (refer Appendix A).	Positive
Livelihoods – *Including changes to livelihoods (for example, whether people's jobs, properties or businesses are affected, or whether they experience advantage/disadvantage)*						
Increased local employment opportunities **Increased opportunities for training and skills development**	Capture local economic, employment and training benefits during construction.	E, C, O, D	Broader community, Local business/ industry	Positive	Prepare and update a **SIMP** that commits to working with local businesses and organisations to maximise employment and procurement opportunities. (refer Section 6 and Appendix D). Execute a **CBA**, informed by *Community benefit priorities* identified as part of the SIA	Positive

Potential social impacts	Project Aspect / Activity (incl. cumulative)	Project stage [14]	Community of Interest	Evaluated Impact significance [15]	Existing / potential enhancement measures	Residual significance [16]
Increased opportunities for local businesses					(refer Section 6.6).	

Table 5-12 Social impact assessment summary – negative impacts

Potential social impacts	Project Aspect / Activity (incl. cumulative)	Project stage [17]	Community of Interest	Evaluated Impact significance [18]	Existing / potential enhancement measures	Residual significance [19]
Community *– Changes to community values and/or the way the community functions*						
Reduced trust due to legacy engagement experiences	Perceived lack of transparent information and meaningful consultation during previous project stages. Community perception that they are not informed of what is happening at the Project site.	E, C, O	Broader community (including vulnerable groups), Local service providers, Community groups	Moderate magnitude + Low vulnerability **Moderate**	Development and ongoing engagement consistent with a **CSEP**, guided by IAP2 principles (refer Appendix A) Execute a **CBA**, informed by the *Community benefit priorities* identified as part of the SIA (refer Section 6.6). Prepare a **SIMP** to showcase the implementation of management measures and reference strategies that are anticipated to be formalised in the CBA (refer Appendix D).	Low magnitude + Low vulnerability **Low**

[17] Establishment (E), Construction (C), Operation (O), Decommissioning (D).

[18] Unmitigated rating: Major, High, Moderate, Low, Insignificant.

[19] With proposed management measures: Major, High, Moderate, Low, Insignificant.

Potential social impacts	Project Aspect / Activity (incl. cumulative)	Project stage [17]	Community of Interest	Evaluated Impact significance [18]	Existing / potential enhancement measures	Residual significance [19]
Culture *– Impacts on culture, history, and ability to access cultural resources*						
Potential for disruption to cultural heritage sites	Potential to do harm to Aboriginal cultural heritage.	E, C, O	Traditional Owners	Low magnitude + Low vulnerability **Low**	Cultural heritage survey completed and clearance received for the BSF footprint in collaboration with the Traditional Owner group. Continued engagement with EPAC, including notification of any design changes affecting unsurveyed areas.	Low magnitude + Low vulnerability **Low**
Health and Wellbeing *– Impacts on communities' physical safety, exposure to hazards or risks, and access to and control over resources*						

Potential social impacts	Project Aspect / Activity (incl. cumulative)	Project stage [17]	Community of Interest	Evaluated Impact significance [18]	Existing / potential enhancement measures	Residual significance [19]
Increased fire risk	Operation of the BSF	O	Proximate landholders Broader community	Low magnitude + Low vulnerability **Low**	Implement management measures in the Natural Hazards Risk Assessment and Bushfire Management Plan.[20] Ongoing engagement consistent with the Proponent's Project **CSEP** (refer Appendix A). Execute a **CBA**, informed by the *Community benefit priorities* identified as part of the SIA (refer Section 6.6).	Low magnitude + Low vulnerability **Low**
Accessibility – *Impacts on communities' access to, and quality of, infrastructure, services and facilities*						
Road damage and safety risks from heavy vehicle traffic	Increased heavy vehicles on local roads during construction, operations and decommissioning.	C, O, D	Proximate landholders Broader community and road users	Moderate magnitude + Low vulnerability **Moderate**	Design project access routes with reference to the **Traffic Impact Assessment** recommendations. [21] Ongoing engagement consistent with the Proponent's Project **CSEP** (refer	Low magnitude + Low vulnerability **Low**

[20] Natural Hazards Risk Assessment (April 2026, Final V1); Bushfire Management Plan (April 2026, Final V1).
[21] Rytenskild, 1 June 2026, RTE Ref: 25381

Potential social impacts	Project Aspect / Activity (incl. cumulative)	Project stage [17]	Community of Interest	Evaluated Impact significance [18]	Existing / potential enhancement measures	Residual significance [19]
			Agriculture and cattle industry		Appendix A) Execute an Infrastructure Agreement, informed by *Community benefit priorities* identified as part of the SIA (refer Section 6.6).	
Livelihoods – *Including changes to livelihoods (for example, whether people's jobs, properties or businesses are affected, or whether they experience advantage/disadvantage)*						
Limited flow-on economic benefits for local communities	FIFO workforce model limiting economic flow on to local businesses. Workers not permitted to leave site during previous stages.	C, O	Local business and industry, Broader community	Low Magnitude + Low Vulnerability **Low**	Ongoing engagement consistent with the Proponent's Project **CSEP** (refer Appendix A) Prepare and update a **SIMP** including development and implementation of a *Workforce Management Strategy* and *Local Business and Procurement Strategy* (refer Section 6 and Appendix D). Execute a **CBA**, informed by *Community benefit priorities* identified as part of the SIA (refer Section 6.6).	Low magnitude + Low vulnerability Low

6. Management measures

The following management measures include initiatives and actions that were identified through the SIA process relating to community and stakeholder engagement, workforce management, local business and industry procurement, housing and accommodation, health and wellbeing.

The management measures developed through the SIA were informed by engagement and provide a foundation to inform the development and execution of a CBA with Etheridge Shire Council. Community benefit priorities are identified in the conclusion of this section. Alignment with the identified social impacts shown in Section 5 are emphasised in **bold** below.

A SIMP will be developed prior to the commencement of the Project's construction phase. The Proponent's proposed framework for the SIMP, incorporating the management measures included in this SIA, is shown in Appendix D.

The Proponent has committed to preparing a SIMP that covers the Clean Energy Hub as a whole to provide consistency across Project stages and reduce the risk of fragmented or conflicting obligations. The framework is specific to the Kidston BSF and will be incorporated into the wider Clean Energy Hub SIMP. The SIMP will include a suite of interrelated management plans (such as the CSEP, Workforce Management Strategy, Local Business and Procurement Strategy, Workforce Housing and Accommodation Plan. These management plans will be included as chapters within the SIMP. The SIMP will provide an integrated set of actions and procedures to manage social impacts across each phase of the Project. It will extend and build upon the findings of this SIA to adaptively manage impacts in real time, outlining strategies to monitor, report, evaluate, and proactively respond to change as development parameters become better understood.

6.1. Community and stakeholder engagement

The Proponent is committed to expanding their engagement with the community and other stakeholders in future stages of the Clean Energy Hub, including the Kidston BSF. These activities will be in alignment with the attached CSEP (see Appendix A).

Genex will develop a CSEP guided by IAP2 principles, with a focus on transparent, ongoing and accessible communication with the local community and key stakeholders. It is recommended that the CSEP is developed and built upon throughout the Project lifecycle, from development, to construction through to operations and decommissioning, each stage informed by the identified needs of the community received in previous stages.

This initiative and associated actions have been designed to inform **opportunities for increased community investment** and **contribution to regional energy supply**, as well as to address **reduced trust due to legacy engagement experiences** raised by key stakeholders and the community in preparing this SIA.

The CSEP will:

- Define the engagement approach and targeted objectives for the Project, while also establishing structures for regular communication with the community and stakeholders.
- Provide for an engagement approach that includes:

- Consistent use of language, clarity of purpose for every engagement material and/or activity, providing outcome summaries of previous feedback (to counteract narratives of 'tick-box' engagement), have targeted engagement activities as well as 'engagement for all', provide a range of engagement accessibility options and be consistent and predictable with the approach.
- A clear strategy to reduce consultation fatigue.
- A framework for regular, accessible updates to the community on Project progress, construction timelines, workforce arrangements, and community benefit outcomes through multiple channels including community information sessions, council distribution networks, newsletters, and direct communication with near neighbours and community groups. A regular communication routine will be established (eg: monthly or quarterly) and remain consistent, allowing community members to establish trust over time.
- Engagement through existing mechanisms, forums or groups who are representative of the community. In some instances, the Proponent may need to establish their own reference or community consultative committee if no established groups are present or at the request of the community/or Council.
- An educational approach to engagement. Provide information regarding assessment and legislative processes, and BSF technology through incorporation of educational information into regular engagement materials and community information sessions. For example, provide updates including information on how energy generated at the site is distributed into the grid.
- A commitment to 'closing the loop' with stakeholders, acknowledging their time and input into the Project, including for the SIA, and provide feedback on how community and stakeholder input has been considered and what actions have been taken in response.
- The ongoing engagement with key stakeholders identified in the SIA process, and local progress associations to maintain relationships built through the SIA process and ensure priorities for community investment continue to be reflected in Project delivery, including an understanding of the potential for the BSF to contribute to a more secure energy supply in the region, as well as concerns raised relating to increased fire risk, road damage and safety risks from heavy vehicle traffic for example.
- An accessible feedback mechanism with a clear process and timeframe requirements in relation to the receipt, management, investigation and remediation of any enquiries or complaints. To enhance overall accessibility, this mechanism will provide an opportunity for community members to request that their feedback is responded to via various mediums, such as email, phone call, or a meeting (in person or online). The Proponent will commit to responding to enquiries and complaints within three business days.
- The ongoing monitoring of media and social media channels to track community sentiment and respond to concerns or misinformation in a timely manner. Responses to be shared via established communications pathways, and not directly via social media channels as this introduces significant risk.

- A feedback register for all communication received through formal and informal channels, including community meetings, complaints mechanisms, and surveys, that is regularly reviewed to identify emerging issues and inform ongoing engagement.
- A record of all interactions with stakeholders, whether phone, email, in-person, with associated reporting on progress, engagement levels, outcomes and compliance with the CSEP.

- Align with the development of a Cultural Heritage Management Plan and/or co-designed Benefit Sharing Agreements with the Ewamian People. These processes will support the principles of Free Prior and Informed Consent with Traditional Owners.
- Be reviewed annually and updated when there is a permanent material change in operational characteristics (i.e. transition from development to pre-construction, pre-construction to construction etc.)

6.2. Workforce management

The Proponent will work in partnership with Etheridge Shire Council, industry, state government departments and First Nations businesses, Registered Training Operators in preparing a *Workforce Management Plan* ffor the SIMP with a focus on local business and industry procurement, including the engagement and economic participation of First Nations people.

This may include, but may not be limited to the following recruitment, training and workforce development initiatives and actions to support the Project's contribution to **local employment, flow-on social and economic benefits** and **increased opportunities for training and skills development** (noting that the latter will likely be limited by the depth of technical expertise required for the Project coupled with the small local labour market), as raised by key stakeholders and the community in preparing this SIA:

- Providing onboarding for new employees which includes information about the local area, events, businesses and available services.
- Integrating a behavioural code of conduct in employment contracts.
- Developing relationships with established local workforce management organisations to:
  - Provide early notification to training providers, prerequisite certifications, and project timelines to allow adequate lead time for training and recruitment.
  - Identify any entry level roles on the Project and seeking to have these filled with staff who will benefit from the experience such as local workers, women returning to work, younger workers without formal qualifications.
  - Leverage government programs or partnerships that support the continuity of employment, skill development, and retention of workers in the region, to maximise the social legacy of infrastructure investment, including engaging with Australian Training Works to provide training and workforce readiness.
  - Collaborate with the Ewamian People on economic opportunities associated with the Project

- Targeted outreach and advertising through multiple channels, including industry engagement events, tender opportunities, local labour hire companies, including First Nations businesses, including a summary of all available opportunities, including position descriptions and/or eligibility criteria, to be sent to the General Manager of Ewamian Limited.
- Work with DSDIP, Etheridge Shire Council and registered training providers to assess traineeships opportunities during construction and into the operations.
- Ongoing management and monitoring of local employment outcomes, through Project reporting and communication of outcomes to promote best practice via platforms including a Project / Council's website.

6.3. Local business and industry procurement

The Proponent will work in partnership with Etheridge Shire Council, industry, DSDIP, and First Nations businesses in the preparation of a *Local Business and Procurement Strategy* with a focus on local business and industry procurement, including the engagement and economic participation of First Nations suppliers. This may include, but may not be limited to the following initiatives and actions to **increase opportunities for local businesses**:

- Maximising opportunities for local businesses by**:**
  - Working together with local industry groups, such as Gulf Savannah Development, to assist with mapping of local businesses who might be suitable to be involved in the Project. (This will assist with identifying businesses that may be well placed to tender but do not have a strong online presence).
  - Developing a public EOI register for local businesses to express interest in involvement in the Project.
  - Use of weighted tender criteria which prioritises local businesses, including First Nations businesses (see below).
  - Use of a broad range of platforms and tools, such as attending local industry supplier sessions, newsletters, electronic direct mail, local print, council distribution networks and platforms, regional vendors, Industry Capability Network, Supply Queensland, Supply Nation, and local and regional Job Boards and their online platforms.
  - Advertising tenders early and widely through multiple channels, including Council websites, procurement registers such as Industry Capability Network, Supply Queensland and Supply Nation.
- Targeted procurement of First Nations Businesses through engagement with the Ewamian People. Including for any contracts of greater than $500k in value, an evaluation criteria for Ewamian involvement will be included. In addition, for contracts less than $1M in value, the Proponent will provide separate notice to Ewamian inviting them to tender, favouring the Ewamian business on otherwise equal terms.
- Supporting capacity building programs, including:
  - Supporting Council and other organisations with capacity-building initiatives such as mentoring, training and support for local businesses to meet procurement requirements.

- Attending 'meet the buyer' events in key townships in the Etheridge Shire Council, Gulf Savannah region and in larger regional hubs such as Townsville. At these events, provide an in-person sign up process for businesses to register their interest, and also provide clear information around Project timelines.
- Partnering with Industry Capability Network, Supply Queensland and Supply Nation to create a profile for the Project on their online registers.

- Ongoing management and monitoring of local business procurement outcomes, through Project reporting and communication of outcomes to promote best practice via platforms including a Project / Council's website.

6.4. Housing and accommodation

As outlined within this SIA, Genex's approach to accommodating the Project's construction and operations workforce is not expected to impact on the local housing and accommodation market.

The Proponent is proposing to accommodate the construction Project workforce at the Oaks Rush Accommodation Camp. A separate Development Application will be submitted by Genex for the expansion of an existing operational workforce accommodation facility in the Old Kidston Township to accommodate the operational workforce. This facility will accommodate the operational workforces of the existing Kidston Solar Farm, the K2-Hydro Project that is currently under construction, and the proposed Kidston BSF by upgrading the existing facility to allow for 40 rooms (approx.) and associated common infrastructure. It is expected that a Development Application will be submitted in 2026 with construction to commence in 2027, and to be completed in alignment with the commissioning of the K2-Hydro Project in 2027.

A *Workforce Housing and Accommodation Plan* will be included within the SIMP with a focus on the following initiatives and actions to avoid increased pressure on the local housing and accommodation market, including potential cumulative impacts on limited housing stock in Georgetown, Einasleigh, and surrounding communities:

- Accommodation of the construction workforce at the Oaks Rush Accommodation Camp for the duration of the construction phase.
- Accommodation of the operational workforce in the proposed expanded workforce accommodation facility in the Old Kidston Township.
- Monitoring of accommodation and associated facilities to ensure that standards are maintained to support workforce wellbeing, including access to recreation facilities and telecommunications.

6.5. Health and wellbeing

Measures related to the provision of health services may include, but may not be limited to the following initiatives and actions:

- A permanent nurse will be accommodated at the Project site, with use of the helipad and airstrip available for any emergencies requiring the Royal Flying Doctor Service.

- The provision of a telehealth service for the construction workforce that can be used for all non-acute medical needs, including mental health support services, to reduce pressure on local health services.
- Monitor the use of local medical services in the Etheridge Shire area and undertake regular assessment of whether project workforce demand is placing pressure on these services. Report findings through the SIMP and adjust on-site health provision if required.
- Coordinate with Forsayth Primary Health Care and North Queensland Primary Health Network ahead of construction commencement to communicate expected workforce numbers, roster schedules, and on-site health services provision, so local health providers can plan for any incidental demand.

Measures related to general community health and wellbeing specific to the impacts identified in Section 5 may include, but may not be limited to the following:

- Implement management measures in the Natural Hazards Risk Assessment and Bushfire Management Plan.[22]
- Design project access routes with reference to the Traffic Impact Assessment recommendations specific to road safety risk. [23]

6.6. Community benefit priorities

Consistent with the Qld SIA Guideline, a list of community benefits was developed. Table 6-1 shows the community benefit initiatives raised by stakeholders through SIA-targeted consultation, noting that consistent with the Qld SIA Guidelines, these initiatives "*respond to both the social impacts identified in the SIA and the broader aspirations of the community*". CBA initiatives that respond to identified social impacts are highlighted in the table below.

[22] Natural Hazards Risk Assessment (April 2026, Final V1); Bushfire Management Plan (April 2026, FInal V1).
[23] Rytenskild, 1 June 2026, RTE Ref: 25381

Table 6-1 Community benefit initiatives

CBA initiative	Description	Stakeholder
Roads in the local area*	Legacy road infrastructure investment beyond the Proponent's obligations under road use agreements was identified as the single highest priority by community members and the Progress Association. Gulf Savannah Development described the road as having community, economic, business and tourism benefits and framed sealing as a genuine legacy investment for the region. *Specific initiatives raised:* • Sealing or partial sealing of the State controlled Gregory Development Road between Lynd and Einasleigh, including bitumen on overtaking areas.	Community members, Einasleigh Progress Association, Gulf Savannah Development
Training, employment and procurement*	Building local workforce capacity and supporting businesses to participate in Project delivery. *Specific initiatives raised:* • Apprenticeship and training support, including funding to offset the costs for business owners taking on apprentices. • Pre-employment programs and early engagement with training providers to align pathways to workforce demand. • Funding for a community and economic development officer at Council to support economic diversification and community capacity building.	Regional Development Australia, Australian Training Works, Manufacturing Skills Queensland, Gulf Savannah Development
Energy supply*	Addressing local energy costs and infrastructure in a region experiencing power supply constraints including brownouts. *Specific initiatives raised:* • Subsidised or free power for the local community. • Power and transmission line upgrades to improve regional energy resilience.	Community members, Gulf Savannah Development

CBA initiative	Description	Stakeholder
Development of EPAC's tourism site	Supporting EPAC's aspirations to develop a tourism asset on Country and generate economic and visitor activity along the Savannah Way. The site has potential to deliver flow-on benefits to Einasleigh and surrounds through improved visitor facilities and increased tourism activity in the locality. *Specific initiatives raised:* • Funding to assist development of the Ewamian reserve adjacent to Einasleigh Gorge, a popular stop on the alternative Savannah Way route, into a campsite for both Ewamian and non-Ewamian tourists travelling through the area. • Facilitation with Etheridge Shire Council to support development.	EPAC
Community transport	Improving access to services and reducing social isolation through community transport. North Qld Primary Health Network described this as a practical solution to transport barriers for vulnerable patients / those with mobility needs and have provided a letter of support for this initiative. *Specific initiatives raised:* • Purchase and operation of a community bus for Etheridge Cares to allow older residents to attend medical appointments, social events and community activities.	Etheridge Cares, Gulf Savannah Development, North Qld Primary Health Network
Community organisations	Supporting the Einasleigh Progress Association in its role coordinating community services and infrastructure priorities across the township. The Progress Association manages a broad remit including community events, infrastructure upgrades and local advocacy on behalf of residents. *Specific initiatives raised:* • Annual funding allocated to the Progress Association, noting that preference is that these funds would be held by Genex or Council.	Einasleigh Progress Association

CBA initiative	Description	Stakeholder
Telecommunications and digital connectivity	Addressing significant gaps in telecommunications coverage in Einasleigh was identified as a high impact legacy community benefit. This priority was noted as important for safety of the local community such as during flooding events. *Specific initiatives raised:* • Funding for the development of telecommunications infrastructure to improve connectivity in Einasleigh.	Einasleigh Progress Association, Gulf Savannah Development
Health and social wellbeing	Addressing existing gaps in social support, youth services and social infrastructure provision. *Specific initiatives raised:* • Funding for a casual social coordinator role at Etheridge Cares to organise activities and reduce social isolation, particularly in Einasleigh. • Funding for alcohol-free community wellbeing and teenage wellbeing events / programs targeted at supporting mental health. • After school care and childcare funding, identified as critical for families in the region.	Etheridge Cares, Northwest Remote Health, North Qld Primary Health Network
Community events	Supporting local community organisations and events that bring people together. *Specific initiatives raised:* • Sponsorship of the Einasleigh Race Club and Rodeo Association.	Raised by multiple stakeholders including Community members, Einasleigh Progress Association

* CBA initiative responds to identified social impact.

7. Conclusion

This SIA has been prepared in line with the Qld SIA Guideline and associated supplementary material. It assesses the potential social changes associated with the Project across the relevant impact categories of community, culture, health and wellbeing, accessibility and livelihoods, drawing on social baseline analysis, cumulative impact review and targeted engagement with communities, Council, Traditional Owners, local businesses and service providers and regional Government and other agencies. Impact significance ratings have been assigned based on the magnitude of change and the vulnerability of affected groups.

The assessment identifies two potential negative impacts of moderate significance that will require careful management – **Reduced trust due to legacy engagement experiences** and **Road damage and safety risks associated with heavy vehicle traffic**. With the application of the recommended management measures, the residual impact significance of both potential impacts is expected to be Low. Other potential negative impacts, including **increased fire risk** and **limited flow-on economic benefits for local communities**, were assessed as being of Low impact significance based on consultation conducted for this SIA and outcomes of the relevant technical studies.

The Project also has the potential to deliver meaningful positive outcomes for the Etheridge Shire and broader Gulf Savannah region. Key potential benefits include **contribution to local employment with flow-on social and economic benefits**, and opportunities for **training and skills development where possible**, and **opportunities for local businesses**. Potential for the Project to **contribute to regional energy supply** was also identified as a positive impact. The proposed CBA, together with other community investment / funding mechanisms, were seen as a significant opportunity to create a pathway for initiatives that reflect community priorities.

The SIA recommends a suite of management and benefit enhancement measures. These measures are designed to be focused, practical, transparent actions that avoid, reduce, or respond to negative social impacts and opportunities to strengthen positive outcomes for the community across the life of the Project.

Consultation and research undertaken through the SIA was central to informing the development of measures tailored to mitigate the Project's potential social impacts and enhance Project benefits, including informing the development of a CBA with Etheridge Shire Council.

The suite of plans and strategies are proposed as a continuation of the impact management and benefit enhancement undertaken as part of the SIA. This includes the preparation of a SIMP supported by chapters including, a CSEP, Workforce Management Strategy, Local Business and Procurement Strategy, and a Workforce Housing and Accommodation Plan. A SIMP framework is provided in Appendix D.

To inform the preparation of these strategies and plans, *Project specific initiatives and actions* were identified. These community benefit priorities have been developed to respond to both the social impacts identified in the SIA and the broader aspirations of the community. Priority initiatives that will inform discussions with Council on the CBA were focused on local road upgrades, training, employment and procurement opportunities, energy supply, community transport, funding for community organisations, improvements to telecommunications and digital connectivity, support for health and social wellbeing and community events. It is recognised that Council will play an important role in refining the list so that Project funds initiatives that deliver a lasting community benefits.

Together, the proposed management measures and community benefit initiatives are intended to avoid or reduce negative social impacts where feasible, support equitable access to project related opportunities, and contribute to long lasting benefits to the Etheridge Shire community over the life of the Project.

8. References

ABS. (2021). *Census*. Australian Bureau of Statistics. https://www.abs.gov.au/census/find-census-data

ABS. (2023). *ABS - Life Expectancy*. https://www.abs.gov.au/statistics/people/aboriginal-and-torres-strait-islander-peoples/life-expectancy-aboriginal-and-torres-strait-islander-people/latest-release

AHRC. (2017). *A conversation in gender equality*.

AIHW. (2024). *Health and wellbeing of First Nations people*. https://www.aihw.gov.au/reports/australias-health/indigenous-health-and-wellbeing

DSDIP. (2025a). *Community Benefit Agreements: Guidance for Local Governments and Proponents*.

DSDIP. (2025b). *Social Impact Assessment Guideline*. https://www.statedevelopment.qld.gov.au/__data/assets/pdf_file/0017/17405/social-impact-assessment-guideline-july-2025.pdf

DSDIP. (2025c, July). *Social Impact Assessment Supplementary material for assessing and managing the social impacts of projects under the Social Impact Assessment Guideline*. https://www.statedevelopment.qld.gov.au/__data/assets/pdf_file/0019/102367/social-impact-assessment-supplementary-material.pdf

Economy.Id. (2025). *Etheridge Shire*. https://economy.id.com.au/fnqroc/about?WebID=160

ESC. (n.d.-a). *Health Services*. Retrieved November 3, 2025, from https://www.etheridge.qld.gov.au/Community/Health-services

ESC. (n.d.-b). *Schools*. Retrieved April 17, 2026, from https://www.etheridge.qld.gov.au/Community/Education-childcare/Schools

ESC. (n.d.-c). *Student Hostel*. Retrieved October 31, 2025, from https://www.etheridge.qld.gov.au/Community/Education-childcare/Student-hostel

ESC. (2020a). *Etheridge Shire Planning Scheme*.

ESC. (2020b). *Operational Plan 2019-2020*.

ESC. (2021). *Clubs and Organisations Directory*. https://www.etheridge.qld.gov.au/files/assets/public/v/1/community/documents/clubs_and_organisations_directory_2021.pdf

ESC. (2023a). *Local Disaster Management Plan*.

ESC. (2023b). *Queensland Housing Strategy 2021-2025 Local Housing Action Plan*.

ESC. (2024). *Etheridge Shire Community Engagement Policy*.

ESC. (2025a). *Corporate Plan 2025-2029*.

ESC. (2025b). *Operational Plan 2025-2026*.

ESC and RDA Tropical North. (2022). *Agricultural Irrigation Precinct Proposal*. https://www.dropbox.com/scl/fi/rm53ao887if57kb49ykss/ES-Agricultural-Irrigation-Precinct-Proposal-V5-Complete-WEB.pdf?dl=0&rlkey=phr0k6vmeemk8rz9pcsniquyg&st=l3wudrds

Etheridge Shire Council. (n.d.). *2025-2029 Corporate Plan*. Retrieved June 12, 2025, from https://www.etheridge.qld.gov.au/downloads/file/2390/2025-2029-corporate-plan

Ewamian People Aborginal Corporation. (n.d.). *NATIVE TITLE | Ewamian People Aboriginal Corporation*. Ewamian People 2022. Retrieved November 4, 2025, from https://www.ewamian.com.au/native-title

Ewamian People Aboriginal Corporation. (n.d.). *Tallaroo Indigenous Protected Area & Nature Refuge*. Retrieved https://www.ewamian.com.au/talaroo

Ewamian People Aboriginal Corporation. (2022). *Strategic Plan | Ewamian People Aboriginal Corporation*. Ewamian People. https://www.ewamian.com.au/strategic-plan

Genex. (2025). *Genex—Clean Energy Council Best Practice Charter Report*. https://cleanenergycouncil.org.au/getmedia/9b6823c0-f56f-4f0f-8d51-805896ce9ca7/genex-power-limited_2025.pdf

NEMA. (2026). *Etheridge Profile*.

Primary Health Network - North Queensland. (2025). *New program to help rural residents with chronic conditions access care closer to home*. https://nqphn.com.au/news/new-program-help-rural-residents-chronic-conditions-access-care-closer-home/

Profile Id. (2026). *Etheridge Shire*. https://profile.id.com.au/fnqroc/about?WebID=160

QCOSS. (2025). *Living affordability in Queensland 2025*. https://www.qcoss.org.au/publication/report-living-affordability-in-queensland-2025/

Qld Statisticians Office. (2025). *Queensland Regional Profiles: Etheridge Shire*.

Queensland Treasury. (2025). *Queensland Energy Roadmap 2025*. https://www.treasury.qld.gov.au/files/Queensland-Energy-Roadmap-2025-25-043.pdf

RDA Tropical North. (2022). *Etheridge Shire Agricultural and Irrigation Precinct Proposal*. https://www.rdatropicalnorth.org.au/our-projects/etheridge-shire-ag-precinct-proposal/

REMPLAN. (2025). *Etheridge—Economy, Jobs, and Business Insights*. REMPLAN Region Profiles and Explorers. https://app.remplan.com.au/etheridge/economy/summary

SQM Research. (2026). *Vacancy Rates—4871*. https://sqmresearch.com.au/property/vacancy-rates?postcode=4871

Vanclay, F. (2003). International Principles For Social Impact Assessment. *Impact Assessment and Project Appraisal*, *21*(1), 5–12. https://doi.org/10.3152/147154603781766491

Vanclay, F., Esteves, A. M., Aucamp, I., Research, E., & Franks, D. M. (2015). Social Impact Assessment: Guidance for assessing and managing the social impacts of projects. *International Association for Impact Assessment*.

WGEA. (n.d.). *Gender equality and intersecting forms of diversity*. Retrieved https://www.wgea.gov.au/gender-equality-and-diversity

Appendix A Community and stakeholder engagement

SIA-targeted engagement

Table A-1 provides an overview of engagement activities undertaken through SIA-targeted engagement.

Table A-1 Engagement activities undertaken through SIA-targeted engagement

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
Government	Etheridge Shire Council	17/03/2026	Confirmation of SIA engagement approach	• Etheridge Shire Council reviewed the SIA Stakeholder List and confirmed the SIA engagement approach.	Informed identification of key stakeholders which in turn informed the impact assessment and development of management measures and CBA initiatives.
	Regional Development Australia - Tropical North	09/03/2026	SIA interview	**Discussion points** • FIFO limits community benefit; community wants workers integrated, not just present. • Council and Regional Development Australia pursuing an irrigation and agriculture economic zone across Etheridge with two Traditional Owner groups. • Etheridge falls between gaps in State agency coverage; hard to attract and retain staff. • Apprenticeship attraction difficult due to climate and remoteness; tradespeople lack capacity to train apprentices.	Engagement informed the social baseline, the assessment of local employment opportunities, training and skills development, local business and procurement opportunities, and the identification of community benefit initiatives.

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
				• After school care, tourism product development, swimming pool closures, and no morgue/refrigeration identified as service gaps. **Measures suggested by the stakeholder** • Tiered procurement preferred: Etheridge first, then Gulf, then Far North Qld. Joint tender submissions should be supported. • CBA priorities: apprenticeship and training support, after school care, support for business owners taking on apprentices.	
Community members	Community member	23/03/2026	SIA interview	**Discussion points** • Negative sentiment based on experience with previous Kidston Clean Energy Hub stages. • Road deterioration on the State controlled Gregory Development Road (75 km unsealed) is the primary concern. 8+ road trains per day with no Main Roads user agreement. No coordination between contractors to reduce vehicle movements. • Road is the only practical access to Townsville and the Tablelands for Einasleigh residents and cattle stations. • Limited community consultation from Genex to date. **Measures suggested by the stakeholder**	Informed the assessment of road impacts, reduced trust due to legacy engagement experiences, local employment opportunities, local business and procurement, and the perception of limited economic flow on to local businesses.

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
				• CBA priority: sealing of the State controlled Gregory Development Road.	
	Community member	03/03/2026	SIA interview	**Discussion points** • Strong opposition to the project overall; no perceived community benefit to date. • Fire risk is the primary concern with the BSF; referenced battery fires in other countries and a large local fire approximately 12 months ago. • Suggested centralised battery storage in areas with better firefighting access. • Roads: significant damage from heavy haulage, no remediation observed. • Communication and engagement has been poor; consultation described as tokenistic and late. **Measures suggested by the stakeholder** • CBA priority: subsidised or free power.	Informed the assessment of fire risk, road impacts, reduced trust due to legacy engagement experiences, and the perception of limited economic flow on to local businesses.
	Community member and business owner	04/03/2026	SIA interview	**Discussion points** • Owns a crushing and screening business in Einasleigh; worked on past Kidston projects providing concrete and crushing waste. • Difficult to get local workers as there are not many around. • Main impact is on the roads and more maintenance is	Informed the assessment of road impacts, local employment opportunities, and local business and procurement, including the practical barriers faced by local contractors in meeting safety and compliance requirements.

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
				needed. • Otherwise, does not think there are many impacts or that the town will be bothered by the development. **Measures suggested by the stakeholder** • CBA priority: support for Einasleigh Race Club.	
	Community member	03/03/2026	SIA interview	**Discussion points** • Road deterioration is the biggest impact; turn off into Kidston is where most damage is occurring. • Wants more community consultation; feels the community has nothing to do with the project. • Business received no benefit from the Project during the hydro stage. Workers were not typically allowed to leave site. **Measures suggested by the stakeholder** • Tourism supports the hotel for approximately 6 months of the year; having Genex workforce attend the business would be a significant support. It is one of the only businesses in town. • CBA priority: funding for the Races and Rodeo Association.	Informed the assessment of road impacts, reduced trust due to legacy engagement experiences, the perception of limited economic flow on to local businesses, and the identification of opportunities for the construction workforce to support local business activity.
	Community member	07/04/2026	SIA interview	**Discussion points** • Road deterioration on the State controlled Gregory Developmental Road is the primary concern. Project	Informed the assessment of road impacts, reduced trust due to legacy engagement experiences, the

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
				traffic volumes exceed the capacity of twice-yearly road grades and roads are rutted up quickly. Project vehicles in past have not followed local road etiquette including radio use, slowing when passing, and giving right of way to cattle trucks. • Project vehicles have driven through road closure signs during wet weather. Heavy materials are not pre-positioned before the wet season despite it being predictable and annual. **Measures suggested by the stakeholder** • CBA priorities: road upgrade on the State controlled Gregory Developmental Road, improved telecommunications infrastructure for Einasleigh, and direct community input into how benefit funds are allocated locally rather than through council alone. • Road management: require radio use, give right of way to cattle trucks, pre-position heavy materials before the wet season, and contribute to road maintenance costs.	perception of limited economic flow on to local businesses, and the identification of opportunities for the construction workforce to support local business activity.
Traditional Owners	Ewamian People	24 June 2026	Written response to SIA interview questions	**Discussion points** • Supportive of the Project and its proposed location, including the repurposing of land already disturbed by historical mining at the Kidston site. • Cultural heritage survey completed and clearance	Informed the development of the social baseline, the assessment of impacts related to Culture and Livelihoods, and the formation of management measures related to workforce

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
				received for the BSF footprint; continued engagement sought on cultural values, including notification of design changes affecting areas not yet surveyed. • Shared that Genex has maintained consistent communication and engagement processes throughout the Project **Measures suggested by the stakeholder** • Employment and training on Country, including ongoing roles, training scholarships and contracting for the Ewamian Rangers and other Ewamian owned businesses, shared through Ewamian Limited. • Procurement: a register of Ewamian owned businesses and joint ventures to be provided to Genex once finalised. • CBA priority: funding to develop the Ewamian reserve adjacent to Einasleigh Gorge into a campsite, with facilitation through Etheridge Shire Council.	management and local business and industry procurement.
Local Industry and Business	Gulf Savannah Development Group	18/03/2026	SIA interview and phone call	**Discussion points** • Road sealing of the State controlled Gregory Development Road as a legacy infrastructure and economic priority. Described as a major economic and beef road. • Energy supply constraints including brownouts are common. BSF has major potential for improving grid	Informed the assessment of road impacts, the contribution to regional energy supply, local employment opportunities, local business and procurement, the concurrent demand and cumulative impact analysis, and the identification of community benefit

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
				resilience, however, there is some concern BSF output may not feed into local Gulf network. • Etheridge Shire Agricultural and Irrigation Precinct Proposal noted as economically significant for future energy demand. **Measures suggested by the stakeholder** • Indigenous employment pathways should extend beyond Etheridge into broader Gulf communities with higher unemployment. • Gulf Savannah Development can play a role linking between industry and local businesses, including digital capacity building and updated business registers. • Local procurement sessions and breaking contracts into smaller packages recommended. • CBA priorities: community transport bus, community/economic development coordinator at Council, telecommunications upgrades, road sealing.	initiatives.
	Manufacturing Skills Qld	04/03/2026	SIA interview	**Discussion points** • MSQ established 2022 to identify skills gaps in Qld and feed back into the VET sector. • Battery projects largely pre-assembled; grid connection components more likely to be Australian manufactured and where skills opportunity sits.	Informed the assessment of training and skills development opportunities, local business and procurement, and the development of workforce and procurement management measures.

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
				• Noted limited training and workforce capacity nearby. **Measures suggested by the stakeholder** • Recommended breaking tenders into smaller packages, using Supply Queensland platform, linking smaller businesses to bid jointly. • Recommended mapping local RTOs to assess whether training can be delivered near site. • Local procurement percentage targets desirable but realistic target for BSF components applies to grid connection only.	
	Wirra Earthmoving Services - Forsayth	04/03/2026	SIA interview	**Discussion points** • Mostly does earthmoving, local truck hire, and other hire gear. **Measures suggested by the stakeholder** • From experience working on past Kidston Clean Energy Hub stages, local contractors need help stepping up to a new level of safety and compliance. Constantly new requirements without sufficient notice. • Clear scope of works required to allow preparation for local business. • Good break up of work will help local businesses be competitive (e.g. separating draining and earthworks). Otherwise, larger businesses will take on full scope.	Informed the assessment of local business and procurement opportunities, including practical insights on prequalification barriers for local contractors, and the development of procurement management measures.

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
				• Meet the buyer events would be effective.	
NGO, Community and interest groups	Einasleigh Progress Association	27/03/2026	SIA interview	**Discussion points** • Road access is the primary concern, particularly deterioration and blockages on the Lynd to Einasleigh road caused by project vehicles. • Cattle station operators have concern that road closures could disrupt livestock operations. • Poor consultation to date; community feels they were dictated to rather than engaged. • Town context: approximately 22 residents, 70% aged over 50. Sporting clubs and cemetery upgrades identified as priorities. • Flying Doctor visits once a month; health access considered adequate and not a major concern. **Measures suggested by the stakeholder** • CBA preference: funds held by Genex and released on request to Einasleigh Progress Association rather than annual lump sum, to avoid administrative burden. • CBA priorities: road upgrades (Lynd to Einasleigh), mobile service/telecommunications, supporting town to get additional water releases.	Informed the assessment of road impacts, reduced trust due to legacy engagement experiences, community investment, pressure on local health services, and the identification of community benefit initiatives including the preferred CBA delivery mechanism.
Health and wellbeing	Forsayth Primary Health Centre -	18/02/2026	SIA interview	**Discussion points** • No significant health service demand from previous or	Informed the social baseline relating to health service delivery and the

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
service providers	Cairns and Hinterland Hospital and Health Service			current Kidston workforce. Occasional additional patient only. • Workers typically manage medications through their usual GP. RFDS provides clinical support fortnightly. • Health Centre mainly provides minor treatment and occasional tetanus shots for workers. Workers travel approximately 1 hour to Forsayth for vaccination. This was not considered a burden. • Population in Etheridge Shire Council generally older with chronic health conditions.	assessment of potential pressure on local health services from the construction workforce.
	Etheridge Cares	05/03/2026	Phone call	**Discussion points** • Genex donates recyclable cans from the Kidston site; generates approximately $20,000-$30,000 annually through Containers for Change. Described as highly significant. • Provides services to residents aged 65+ across the Shire. Primary need is ageing in place. • Significant social isolation among older residents, particularly once they can no longer drive. • Self-funded retirees in Einasleigh face financial barriers to care contributions under the current aged care model. • Trades (builders, electricians, plumbers) very difficult to access in the region, limiting home modifications.	Informed the social baseline relating to health, ageing and social isolation, the assessment of the Project's potential to support community resilience and social wellbeing, community investment, and the identification of community benefit initiatives.

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
				Measures suggested by the stakeholder • CBA priorities: funding a community transport bus, casual social coordinator role.	
	North and West Remote Health	05/03/2026	SIA Interview	**Discussion points** • As a mental health professional, there are two primary concerns: teenage mental health and domestic violence. • Drinking culture is normalised; many residents do not recognise their consumption as problematic. **Measures suggested by the stakeholder** • CBA priorities: non-alcohol community social events, teenage wellbeing programs.	Informed the social baseline relating to mental health and community wellbeing, the assessment of the Project's potential to support community investment and the identification of community benefit initiatives.
	North Qld Primary Health Network	13/03/2026	SIA interview	**Discussion points** • Minimal anticipated health impact given FIFO workforce profile and healthy working age demographic. • Elderly residents on remote properties face significant transport barriers to health and aged care services. • Recent flood events have caused substantial stock losses, with heightened mental health need anticipated among farming families. **Measures suggested by the stakeholder** • CBA priorities: Etheridge Cares community transport	Informed the social baseline relating to health service access and disaster recovery, the assessment of potential pressure on local health services, community resilience and social wellbeing, and the identification of community benefit initiatives including the community transport bus

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
				bus identified as highest impact opportunity; non-alcohol community social events and teenage wellbeing programs.	
Schools, TAFE, employment providers	Australian Training Works	05/03/2026	SIA interview	**Discussion points** • ATW provided First Nations apprentices, trainees and labour hire on past Kidston Clean Energy Hub projects. Good experience working with Genex and interested in being engaged on the BSF. **Measures suggested by the stakeholder** • Early engagement is essential. ATW need to know: (1) types of jobs needed, (2) prerequisite certifications, and (3) lead time into Project commencement. • Entry level roles (e.g. labourers, gardeners) are a genuine opportunity, including for women returning to work and people without formal qualifications. • Breaking contracts into smaller pieces will help Indigenous suppliers. • Federal and State Indigenous Procurement Policy is 3% rising to 4%. Genex achieved 7-8% on Hydro Project, which should be the benchmark.	Informed the assessment of local employment opportunities, training and skills development, local business and procurement including First Nations procurement benchmarks, and the development of workforce management measures.
Emergency management	Einasleigh Rural Fire Brigade	05/03/2026	Phone call	**Discussion points** • Substantial fire equipment at the Kidston site including 3 x 2,000L units (with 1 more being procured) and	Informed the assessment of fire risk, including confirmation of on-site firefighting capacity and the existing

Stakeholder group	Stakeholder	Date	Activity	Engagement summary	Sections of the SIA informed
				dam fill points for water access. • Fires around the site in the past have been dealt with quickly. • Permanent crew trained in firefighting plus many of the workforce trained as volunteer firefighters. • Genex shares equipment with the Einasleigh Rural Fire Brigade and staff assist with fires in the surrounding area. **Measures suggested by the stakeholder** • Accessibility of roads is important for emergency response.	cooperative arrangement between Genex and the local Rural Fire Brigade.

Summary of Prior Engagement

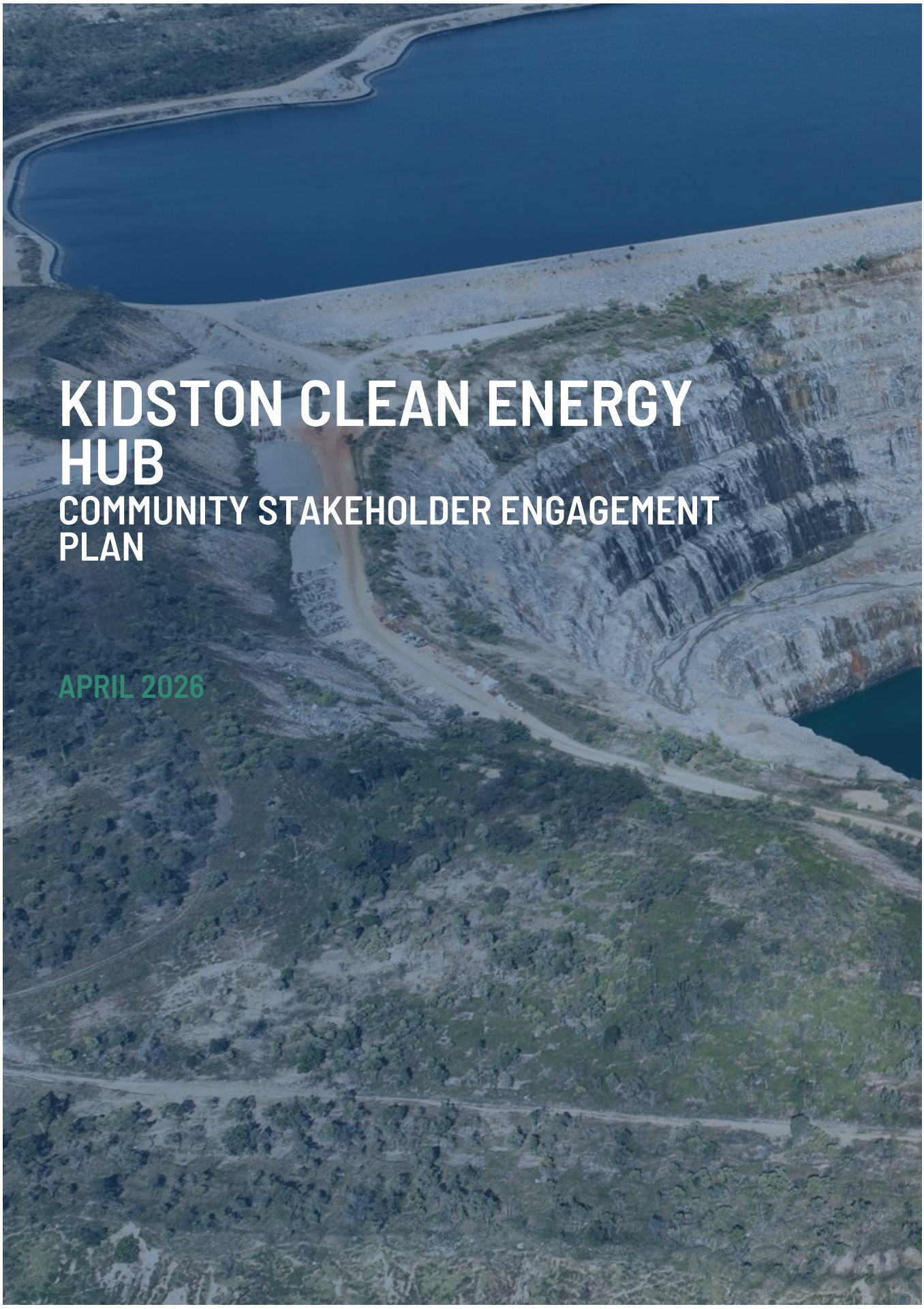
A summary of prior consultation and engagement activities conducted by Genex for the Kidston Clean Energy Hub provided the following perspectives, feedback, and opportunities for the SIA team to consider.

Opportunities identified:

- Local employment and procurement potential, highlighted at multiple events, including Careers for Net Zero and local industry forums.
- Cultural heritage collaboration with the Ewamian Aboriginal Corporation, including on-country surveys and input into Project design.
- Strong working relationship with Etheridge Shire Council, supported by ongoing dialogue, site visits, and invitations to participate in regular council-run events.
- Proactive coordination with Transport and Main Roads, leading to conceptual approval of heavy haulage transport routes.
- Enhanced community visibility and awareness through presence at local events such as the Georgetown Bush Races and Etheridge Show.
- Community advocacy for equitable employment practices, including clear interest in prioritising local hiring and transparent processes for recruitment.
- Opportunities to support local social infrastructure, including community interest in enhanced services for an ageing population and potential funding contributions to Etheridge Aged Care.
- Strong community interest in benefit-sharing presents an opportunity to co-design clear, transparent processes for funding local support programs, ensuring outcomes align with regional priorities and expectations.

Key challenges and considerations:

- Road infrastructure expectations, especially from Council regarding assumed upgrades to access roads and broader concerns about road conditions, particularly between Einasleigh and the Oasis.
- Traffic management and scheduling, with concerns raised about delivery impacts during peak cattle transport periods on the Charters Towers route.
- Workforce expectations vs. project realities, including limited local skilled labour availability and reliance on FIFO, requiring clear communication to avoid misunderstandings.
- Water security concerns, particularly regarding the reliability of Copperfield Dam and past delays to supplementary releases affecting local supply.
- Ongoing community trust issues, stemming from past experiences of limited engagement and unmet expectations from earlier Project phases.



KIDSTON CLEAN ENERGY HUB

COMMUNITY STAKEHOLDER ENGAGEMENT PLAN

APRIL 2026

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1. BACKGROUND

1.1 Genex

Genex Power Proprietary Limited (**Genex**) is an Australian-based company established in 2014, focused on developing a diverse portfolio of renewable energy generation and storage projects in Australia. Our operations span Queensland and New South Wales, encompassing large-scale batteries, pumped storage hydro and solar energy solutions. Genex is a wholly owned subsidiary of Electric Power Development Co., Ltd (**J-POWER**) which is an electricity generation and distribution utility listed on the Tokyo Stock Exchange.

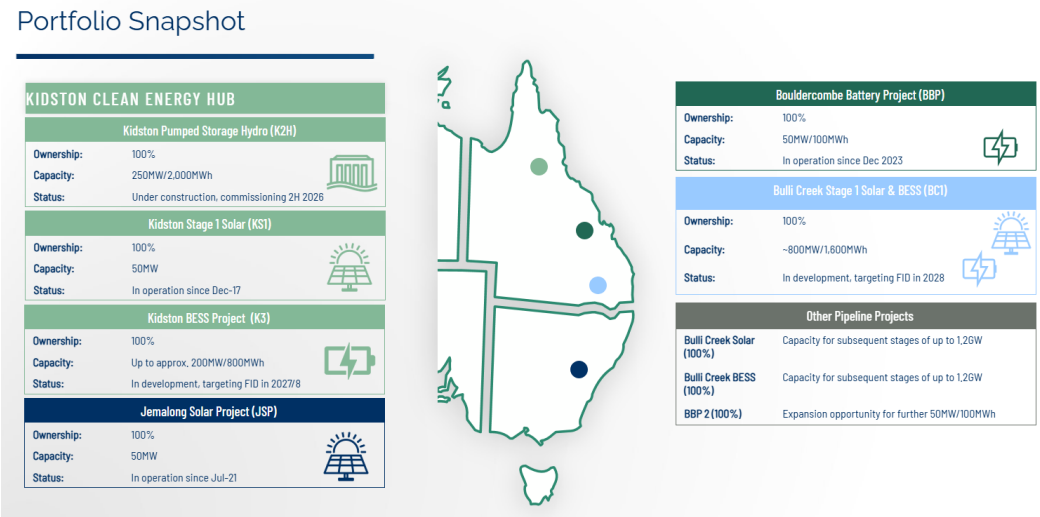


Image 1 Genex Portfolio

2. KIDSTON CLEAN ENERGY HUB

The Kidston Clean Energy Hub is located on the site of the disused Kidston Gold Mine in Far North Queensland, near Einasleigh. It integrates three renewable power generation projects spanning large-scale solar, pumped storage hydro and a proposed Battery Energy Storage System (BESS).

Genex has been developing the Kidston Clean Energy Hub since acquiring the Kidston Gold Mine in 2014. A dedicated 275 kilovolt (kV) transmission line extending over 186 kilometres (km) from the Guybal Munjan substation near Mount Fox has been established by Powerlink to connect the Kidston projects to the National Energy Market (NEM). The combination of renewable energy generation, energy storage and the synchronous operation of the Pumped Hydro will add much needed system strength to the north Queensland grid.

2.1 Kidson Solar Project

The Kidston Solar Project (KS1) is a 50MW solar farm which has been generating energy for Queensland homes since 2017 when it was first connected to Ergon's existing 132kV network. KS1 is located on one of the waste rock storage sites from the Kidston Gold Mine.



2.2 Kidston Pumped Storage Hydro Project

The Kidston Pumped Storage Hydro Project is one of Australia's most ambitious energy infrastructure projects in remote North Queensland and is Genex's flagship project. It is the nation's first new pumped storage hydro scheme in more than 40 years and the first in the world to transform a decommissioned gold mine into a fully contained, closed-loop energy storage system. Construction is anticipated to finished in 2026 followed by a commissioning period before it becomes operational.



Image 2: Kidston Pumped Hydro Project aerial



Image 3: Underground works for Kidston Hydro Project

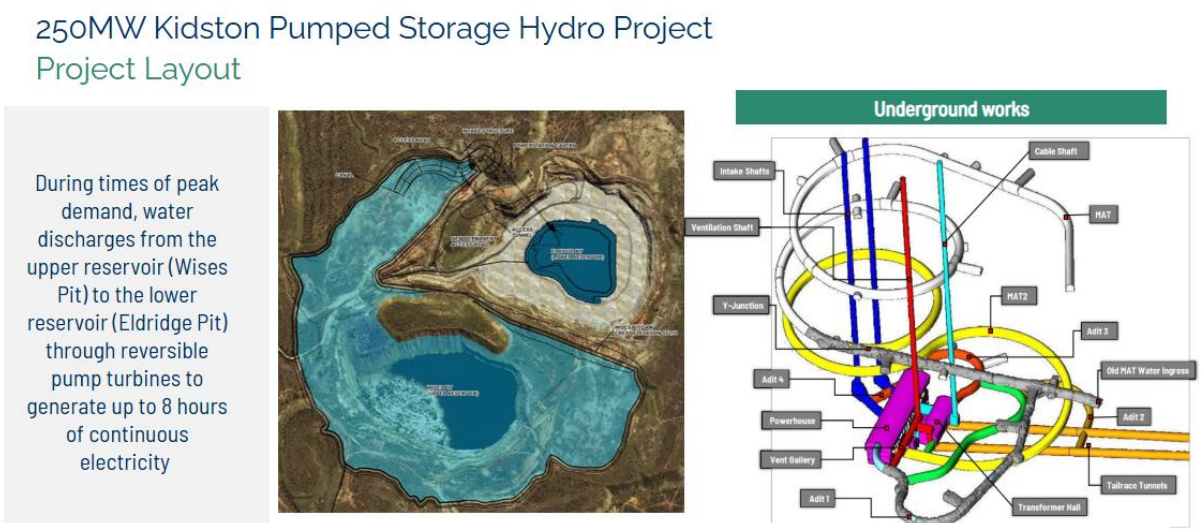


Image 4: Project Layout and underground tunnelling and infrastructure works

2.3 Kidston Stage 3 BESS

The Kidston BESS is a standalone renewable energy storage project proposed to be located within the Kidston Clean Energy Hub. It will provide utility-scale energy storage to support the NEM and enhance regional grid stability. The BESS will have a capacity of up to 250 MW / 1,250 MWh and will connect to the existing Aurumfield Substation constructed for the Kidston Clean Energy Hub.

The Kidston BESS development site is located centrally on the historic Kidston Gold Mine site, using land that was previously occupied by part of the mine's processing facility. The area has been extensively disturbed by former mining and renewable energy construction activities and contains established infrastructure, including access roads, cleared benches and is immediately adjacent to the existing Aurumfield Substation.

Access to the Project site will be provided via an existing internal access track extending from Gilberton Road. The existing access route currently services the Pumped Hydro facilities within the Kidston Clean Energy Hub, as well as the Ergon and Aurumfield Substations. These existing roads will be utilised for the Kidston BESS and, where necessary, upgraded to a minimum 6 m width to accommodate construction and maintenance vehicles.

The Kidston BESS would employ an average of approximately 60 staff throughout the construction program, with a peak of up to 120 people. The Project is expected to have an operational life of 25 years and employ 2-3 full time staff during the operational period.

3. COMMUNITY STAKEHOLDER ENGAGEMENT PLAN

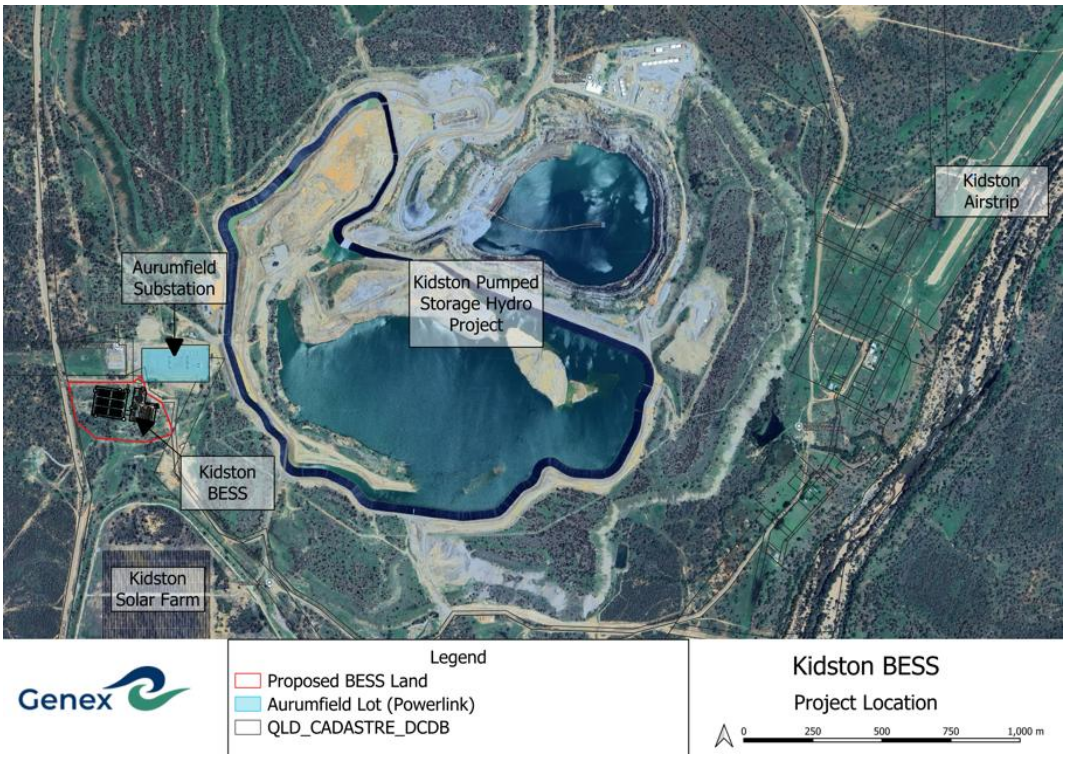
3.1 Scope and Objectives

This Community Stakeholder Engagement Plan (CSEP) will outline how Genex will engage with communities, landholders, Traditional Owners of the land, local councils, business groups and other stakeholders over the life-cycle of the Kidston Clean Energy Hub and any associated projects.

The objectives of our engagement are to:

- Prioritise building long-term relationships with all stakeholders.
- Identify and respond to the community's needs and aspirations to demonstrate Genex's long-term commitment to our surrounding communities
- Ensure stakeholders and the community are well informed and kept up to date on the Kidston Clean Energy Hub Project status, development and opportunities.
- Continue to seek meaningful and ongoing input from stakeholders and the community on the Project including opportunities and our mitigation measures.
- Work towards delivering mutually beneficial outcomes with impacted stakeholders.

Image 3: Location of the BESS Project in relation to the Kidston Clean Energy Hub



- Continue to execute and identify options to demonstrate Genex's long-term commitment to the region.

3.2 Guiding Principles

Genex's community engagement principles are based on Genex's core values of:

- **Integrity** in how we engage,
- **Excellence** in everything we do, and
- **Care** for our people.

They have also been informed by:

- the Clean Energy Council's Best Practice Charter for Renewable Energy Projects, and Leading Practice Principles: First Nations and Renewable Energy Project, and
- the International Association for Public Participation's (IAP2) Public Participation Spectrum.

The following principles will guide our engagement approach and are embedded into our systems and processes.

1. We engage early and throughout the lifecycle of our Projects
   This builds strong, mutually beneficial relationships.
2. We listen and respond to community feedback
   By having regular and open dialogue with our stakeholders we will understand and respond to their expectations, concerns, and interests.
3. We ensure that everyone has the opportunity to be included in consultations
   By being inclusive, our engagement approach will be able to identify, prevent or mitigate negative social impacts, enhance opportunities and develop enduring benefits.
4. We respectfully engage with First Nations people and protect their cultural heritage
   This will foster relationships based on transparency and trust and support the development of controls to mitigate cultural heritage risks.
5. We reflect, record and capture learnings
   This will foster and embed a culture of continuous improvement.

4. ETHERIDGE SHIRE COUNCIL

Etheridge Shire Council (ESC) is located in Queensland's Gulf Savannah Region, covers over 39,000 square km's and includes the communities of Georgetown, Mt Surprise, Einasleigh, and Forsayth, along with the smaller localities of Kidston and Oak Park (Corporate Plan, 2025). Positioned around 1,300 km northwest of Brisbane and 250 km southwest of Cairns, ESC is geographically remote and bordered by several other rural local government areas.

ESC has a rich pastoral and mining heritage, with exploration and settlement beginning in the mid-1800s. Gold discoveries in the 1870s gave rise to settlements such as Georgetown, and fossicking for gold and gemstones continues to be a cultural and recreational activity today (Georgetown History)

Agriculture, forestry, and fishing remain ESC's most significant employment sectors, reflecting the rural character of the region and its economic reliance on primary industries (REMPLAN, n.d.). Between 1996 and 2011, employment in mining decreased by 89.9%, from 169 to 17 individuals, while agricultural employment declined by 41.5%, from 212 to 124 individuals. These reductions underscore the Shire's vulnerability due to its dependence on these industries.

While the area retains strong historical and natural appeal, Etheridge faces demographic challenges, including population decline, ageing, and the limited return of young residents after leaving for education (Corporate Plan, 2025). These trends may influence the Shire's capacity for future growth and service sustainability

The Etheridge Shire has experienced a steady decline in population over the last five years, leaving an estimated population of 726 people as of 30 June 2023. The decline in population inversely reflects the increase in local unemployment and has caused considerable changes to the local demographics. Positively, the population median age, which was 47.0 years in 2018, had reduced to 44.4 years in 2023. The proportion of residents aged 45+ now make up 41.3% of the Shire, while those below 25 make up 31.2%.

ESC Corporate Plan outlines the following priorities:

- A sustainable transport network that meets community needs
- A sustainable environment of natural assets, water, wastewater and waste management
- A diversified economic development ensures a prosperous shire
- A quality social infrastructure makes the shire a desirable place to live
- Best practice corporate governance and organisational excellence

Genex has long-term standing relationships with the ESC since it acquired Kidston Gold Mine in 2014. The following engagements have occurred, usually annually, during this time: site visits, provision of project updates, sponsoring local events and providing support and sharing of information during seasonal wet weather events.

4.1 Einasleigh

Einasleigh is a small township located approximately 48 km north of the Kidston Clean Energy Hub, positioned on the eastern edge of the Newcastle Range along the Copperfield River. Today, the town maintains a strong community identity, hosting popular events such as the Easter Races and Rodeo and the September Horse Sports, which attract visitors from

across the region. Einasleigh is also a stop on the Savannahlander tourist train, one of the few in Queensland that will stop outside the local pub on request, adding to its rural charm and cultural appeal (Etheridge Shire Council, 2024).

Originally established in 1900 under the name "Copperfield," the town quickly developed following the discovery of copper and the arrival of the Einasleigh Company's mining operations. Its brief boom period occurred during the construction of the Etheridge Railway (1907–1910), which enabled viable transport of ore and positioned Einasleigh as the most populated centre in the Shire. The copper deposit had first been discovered by geologist Richard Daintree in 1866, but it wasn't until the railway's completion that large-scale mining became feasible. Despite initial success, the mine closed permanently in 1922 due to falling copper prices and depleted reserves, triggering a long economic decline. The town's survival was largely due to its continued connection to the railway (Einasleigh Copper Mine and Smelter, 2024).

Since the closure of mining operations, the local economy has primarily relied on agriculture, particularly cattle grazing. However, the region faces climatic challenges such as drought, which has historically reduced productivity and placed pressure on local livelihoods. To support resilience, programs like the Gulf Savannah NRM Community Resilience Grants have been introduced.

Tourism is an emerging sector, although its seasonal nature results in variable income streams for local businesses, highlighting another area of economic vulnerability in the Shire.

A demographic snapshot of Einasleigh from the 2021 Census is below.

POPULATION	MALES	FEMALES	FAMILIES	PRIVATE DWELLINGS	MEDIAN WEEKLY HOUSEHOLD INCOME
87	62.9%	37.1%	18%	76	$1,156

4.2 Traditional Owners

The Ewamian People are the Traditional Owners of the area comprising the Project. Ewamian People country encompasses significant natural landmarks such as Undara Volcanic National Park, Cobbold Gorge, and the Talaroo Hot Springs. The Savannah Way, a well-known travel route, passes through this area. Over 2.9 million hectares of Native Title land has been determined in favour of the Ewamian People and is shown in the map below:

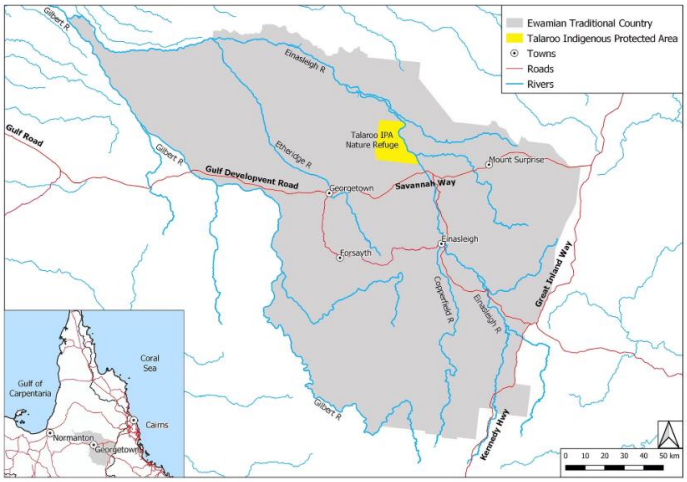


Image 4: Ewamian Peoples Native Title Area

A key engagement Genex has with the Traditional Owners of the area is to undertake Cultural Heritage surveys, this ensures we are appropriately and respectfully minimising our impacts to the land, and that we are working to protect and preserve tangible and intangible heritage. In addition to Traditional Owners, cultural heritage specialists, including but not limited to anthropologists and cultural consultants, are engaged to support the work we do with Traditional Owners.

Genex has been engaged with the Ewamian People Aboriginal Corporation (EPAC) at its Kidston Clean Energy Hub, since 2018 where cultural heritage site visits, assessments and surveys were undertaken for the previously proposed projects including stage 2 solar, the Kidston BESS project, and the former Kidston wind farm. Genex's $530,000 contribution towards the Talaroo Hot Springs in 2024, a Ewamian people-owned tourism venture, remains one our most impactful partnership for Genex.

4.3 Engagement activities undertaken

Genex has had regular formal and informal engagements with neighbouring landowners, Traditional Owners and the ESC since it acquired the Kidston Gold Mine in 2014. Engagements have been associated with the development of the 50MW solar project in 2017 and engagement has been ongoing when construction on the Kidston Pumped Hydro Project commenced in 2021.

Genex had been developing Stage 3 of the Kidston Clean Energy Hub for the past 5+ years, where options for both a wind farm and a wind/BESS hybrid project were investigated until late 2025. During this time, Genex engaged with suppliers, regulators and the community to determine the feasibility of the wind farm and wind/BESS hybrid projects.

In December 2025, based on feedback received from stakeholders and our own detailed feasibility assessments, Genex decided to focus solely on a standalone BESS project.

Genex invited Councillors from Hinchinbrook, Etheridge and Charters Towers to visit Kidston in November 2025.

Genex provides annual funding and often attends a number of local events such as:

- Einasleigh Races
- Einasleigh Rodeo
- Einasleigh Campdraft
- Einasleigh Horse Sports and Motorbike Sports Event
- Oak Park Races
- Georgetown Bush Races
- Georgetown Rodeo
- Georgetown Campdraft

5. ENGAGEMENT STRATEGY

5.1 Engagement and Consultation Tools

A variety of engagement and consultation tools will be used to support engagement activities with stakeholders and the community associated with the Kidston Clean Energy Hub. Where possible, existing communication channels will be used to reduce travel and consultation fatigue by providing updates via:

- Einasleigh Progress Association meetings
- Etheridge Shire Council meetings or forums

The following tools will be used to inform, consult and collaborate with Genex stakeholders

Tool	Details
Inform	
Project website	Provide project overview, maps, current project status, published newsletters, Project email address and phone number, online enquiry/feedback form. Website URL and QR code linking to the website will be included in all newsletters.
Stakeholder database	A dedicated stakeholder and issues database will be used to ensure stakeholder feedback, concerns and enquiries are recorded and responded to.

Newsletters	Available in both print and digital formats. Produced following key project activities and development milestones. Accessible digitally from the Project website. They may also be made available at key community locations. Stakeholders can subscribe via the Project website and will be able to choose to receive them via email or post.
Presentations and information material	Prepared to support engagement activities including briefings, information sessions and meetings. Provide a project overview, project updates, or technical information about project studies and approvals. Information material could include info sheets, maps and photos.
Media releases	Provided to local media outlets to announce project milestones.
Social media	Used to update the community on Project milestones and promote community information sessions and other Project-related community events. Facebook is likely to be used.
Consult / Involve	
Project email address and phone number	Project email address and 1800 number for general enquiries. Project team members will have access to the project mailbox and 1800 number and will be responsible for responding to enquiries in line with the enquiries and complaints management process (refer to **Section** 5.3.
Online enquiry / feedback form	Accessible via the Project website. Provides the opportunity for stakeholders to submit enquiries and provide feedback to the Project team at any time.
Emails and phone calls	Used to correspond with stakeholders about specific matters including responding to enquiries / feedback received online via the website.
Meetings, briefings, and community information sessions	Held to consult with individuals or groups of stakeholders at a time and location convenient to stakeholders. Preferably held in person, option to be held online if capabilities permit. May be topic specific or provide general overview of the project and/or key matters. May be supported by presentations and/or information materials. May be formal (e.g. meeting or workshop) or informal (e.g. community coffee catch up/ meet and greet).
Collaborate	
Workshops	Held to collaborate with stakeholders at a time and location convenient to stakeholders. Preferably held in person, option to be held online if capabilities permit. Topic specific with the intention to work together to identify community benefit/investment opportunities. May be supported by presentations and/or information materials.

Etheridge Shire Council I	Opportunity to identify partnerships to deliver community benefits that supplement the ESC Corporate Plan objectives.

Table 1 Engagement and Consultation Tools

5.2 Stakeholder Methodology

Stakeholders	Frequency		Methods	Issue / Intent of Engagement	Ownership
	Kidston BESS specific	Kidston Clean Energy Hub generally			
Etheridge Shire Council Members	April 2026 Reg meetings anticipated to finalise BESS Project	1 x per annum	Face to face meeting Host site visit Host sun-downer events where possible	BESS - Social Impacts and Community Benefit Agreement KCE Hub key milestone updates Foster positive working rels	Snr Manager SE and Snr Project Directors
	6- month newsletters	6-month newsletter	Contribute to ESC newsletter	Provide Project Update highlight local sponsorships	Kidston PH Proj Director
ESC Departments	As required	As required	Email and Team Meetings	Day-to-day matters assoc with the construction/ operations	Genex site Team
Etheridge Shire Council Mayor and CEO	April 2026	2 x per annum	Face to face	Provide KCE Hub and BESS updates Foster good working relationship	Snr Manager SE and Snr Project Directors
Etheridge Shire Community Organisations and local businesses eg: Rural Fire Brigades Ambulance Committee Race/Show/Race Club Committees Tourist Park and hotel providers	Interviewed for SIA Invite to Community Info session	1 x per annum	Face to face meetings Community Info Sessions Email and phone calls as needed	BESS Updates and impact management Project Updates Sponsorship Ops In-kind support offered by Genex (eg camp accommodation, donation of items)	Snr Manager SE and Snr Project Directors (as needed)
Local State Agencies eg Schools, Hospitals, Police, Remote Health	Invite to Community Info Session	1 x per annum	Face to face meetings Email and phone calls as needed	BESS Updates and impact management Project Updates Sponsorship Ops In-kind support offered by Genex	Snr Manager SE and Snr Project Directors (as needed)
Einasleigh Community	May – June 2026 Follow up anticipated later 2026 – early 2027	Quarterly	Face to face meeting Community Info Sessions	BESS updates Foster relationships with local community	Snr Manager SEand Snr Project

Stakeholders	Frequency		Methods	Issue / Intent of Engagement	Ownership
	Kidston BESS specific	Kidston Clean Energy Hub generally			
				Discuss project milestones and concerns	Directors (as needed)
Einasleigh Progress Association	April 2026	Quarterly	Face to Face meetings Email to EPA with project updates	BESS updates Economic opportunities and Project Updates	Snr Manager SE and Snr Project Directors (as needed)
Neighbouring Landowners near mine site and Gilberton and Gregory Development Road to Einasleigh	April 2026 Reg engagement planned for near neighbours	Annually and as needed for near neighbours (Oak and Carpentaria Downs)	Face to Face meeting	BESS updates and impact management	Snr Manager SE and Snr Project Directors (as needed)
Traditional Owners	April 2026 Reg Engagement	Six monthly	Face to Face meetings Teams meetings Presentations	BESS updates, cultural heritage, economic opportunities Broader Project updates	Snr Manager SEand Snr Project Directors

5.3 Enquiries and Complaints Management Procedure

This procedure applies to all enquiries and complaints received by Genex in relation to the Kidston Clean Energy Hub. Enquiries are requests for further information about a specific matter relating to the hub. A complaint is a notification that something relating to the hub is unsatisfactory or unacceptable.

The channels for receiving an enquiry or a complaint are the same. They are also managed in a similar way, however, if a complainant is unsatisfied with a proposed resolution, the matter will be escalated internally.

The enquiries and complaints management procedure involves three (3) steps:

1. **Receiving** an enquiry/complaint
2. **Responding** to the enquiry/complaint
3. **Recording** the enquiry/complaint and response.

5.4 Receiving enquiries/complaints

Genex employees and subcontractors may receive general and/or environmental queries or complaints from members of the public, external organisations or an environmental regulator. An enquiry or complaint can be made via any means, including:

- Telephone number +612 9048 8850
- Letter, addressed to Genex c/ GPO Box 2180, Sydney NSW 2001
- Email info@genexpower.com.au
- Project website enquiry/feedback form.

- The contact details (for making a complaint or enquiry) will be made available to the public via Genex's website and in distributed communications material e.g. newsletters.
- The employee who receives the enquiry/complaint must seek the enquirer's/complainant's consent for their name, contact details, property location and a short summary about the issue to be recorded in Genex's stakeholder engagement register (Consultation Manager). The person making the enquiry/complaint should be reassured that their details will only be used for the purposes of investigation and will not be shared with any other party.
- Upon receipt, enquiries/complaints must be referred to the Stakeholder Engagement team/Senior Community Engagement Manager to coordinate Genex's

response. Anonymous complaints should also be forwarded to the Stakeholder Engagement team for assessment and investigation.

5.5 Actioning the Enquiry/Complaint

Acknowledgement of enquiry/complaint

Upon receipt of the enquiry/complaint, the relevant Stakeholder Engagement team member will contact the enquirer/complainant to:

- introduce themselves, their role and the role they will play during the investigation
- confirm the information initially provided
- identify any additional or relevant information
- confirm consent has been given in accordance with Genex's Privacy Policy.
- resolve the enquiry/complaint, if possible **OR** advise the timeframes in which the enquirer/complainant can expect a response
- provide the complainant with the reference number for the record of their enquiry/complaint in the stakeholder engagement register.

The Stakeholder Engagement team will ensure the details of the enquirer/complaint are recorded in the stakeholder engagement register. Personal information recorded as part of receiving and investigating an enquiry/complaint must comply with Genex's obligations under the *Privacy Act 1988 (Cth)* (Privacy Act) and Genex's Privacy Policy.

Investigation

If the Stakeholder Engagement team member is unable to resolve the enquiry/complaint and further investigation is required, the team member will assign the enquiry/complaint to an appropriately qualified employee to validate, investigate and respond, as soon as possible.

The appropriately qualified employee is to provide a response within one week from the date of the receipt of the enquiry/complaint.

Response

A response will be developed and sent within 48 hours following completion of the investigation and, where required, corrective action has been initiated. The response should include, where possible, the outcome of the investigation and an explanation of the corrective actions implemented.

The outcome of an investigation into a general enquiry/complaint, should be developed and communicated to the enquirer/complainant within one week from the date of the receipt of the enquiry/complaint.

Appendix B Policy and strategic context

National

Paris Agreement 2016

The Paris Agreement is a legally binding international treaty on climate change adopted by 196 Parties (including Australia) at Conference of Parties 21 in Paris, on 12 December 2015 and entered into force on 4 November 2016 (United Nations Climate Change, 2018). Australia proposed to reduce emissions by 26–28% below 2005 levels by 2030.

The Project assists in this reduction through the generation of electricity from renewables to replace fossil fuel generation.

Climate Change Act 2022 and Nationally Determined Contribution

Australia's long term emissions reduction plan and the Nationally determined contribution to the UN via the Paris Agreement (developed during United Nations Framework Convention on Climate Change (UNFCC) COP21) sets the nations goals towards zero emissions by 2050 and 43% below 2005 levels by 2030 (Department of Industry, Science, Energy and Resources, 2021). This was set to achieve the goal of avoiding a 1.5oC rise (from pre-industrial levels) in temperature by the end of the 21st century.

The Project assists in this reduction through the production of renewable energy via solar, not fossil under the forecasted energy transition. The latest outcomes from COP28 highlighted the need to triple global renewable energy capacity globally to meet the goals of the Paris agreement. The Commonwealth Climate Change Act 2022 enshrines into law an emissions reduction target of 43% from 2005 levels by 2030, and net zero emissions by 2050. In addition, the Act ensures a whole-of government approach to drive towards the target. The government has formally lodged this target as an enhanced Nationally Determined Contribution under the Paris Agreement. The Act supports the Government's Powering Australia Plan, which is focused on creating jobs, cutting power bills and reducing emissions by boosting renewable energy.

The Project contributes to reduction of emissions in the energy sector, which is one of Australia's largest emitting industries, and will assist Australia to meet its reduction target of 43% by 2030.

Decommissioning Security Framework for Renewable Energy Projects

The framework released in October 2025, by the Clean Energy Council, in collaboration with industry partners, establishes a nationally consistent approach to ensure renewable energy projects meet end of life obligations. It requires developers to provide phased financial security through instruments such as bank guarantees or escrow accounts, held by independent custodians. The policy aims to protect communities and landholders from stranded liabilities while maintaining investor confidence and supporting responsible project closure.

The Project's alignment with the framework will allow for concerns regarding decommissioning of the Project to be effectively managed through a national best practice approach.

Clean Energy Council's Best Practice Charter for Renewable Energy Projects

Genex is a signatory to the Charter, which outlines a commitment from signatories to engage respectfully with the communities where they plan and operate projects, to be sensitive to environmental and cultural

values, and to make a positive contribution to the regions in which they operate. As part of this commitment, Genex reports annually on their progress in aligning with the commitments of the Charter.

The Project aligns with the Best Practice Charter through the development of this SIA, the preparation of a Community and Stakeholder Engagement Plan guided by IAP2 principles, and the commitment to a CBA negotiated with the host Council. Genex's annual reporting on Charter commitments provides an additional layer of accountability for the delivery of these commitments over the life of the Project.

State

Energy (Renewable Transformation and Jobs) Act 2024

The Qld Parliament passed the Energy (Renewable Transformation and Jobs) Act 2024 which legislates renewable energy targets of:

- 50% by 2030,
- 70% by 2032,
- 80% by 2035.

The Project contributes to these targets through the generation of renewable electricity, supporting Qld's legislated transition pathway.

Qld Energy Roadmap 2025

The Qld Government's Energy Roadmap released on 10 October 2025 is a strategic plan to improve Queensland's energy assets to provide "affordable, reliable and sustainable energy for all Queenslanders" (p.6). Stating that renewable energy supply is expected to grow up to 6.8GW of additional wind and solar operational by 2030, with a further 4.4GW by 2035. Acknowledging that private industry will have a major role in delivering new infrastructure needed until 2030 to support the growing energy demand. The roadmap, also acknowledges that transitioning the energy sector will facilitate employment security for Qld' coal and gas workforce by providing opportunities for new employment in construction and operations of renewables, storage, transmission and distribution.

The Project aligns with the objectives of the Qld Energy Roadmap 2025 by increasing the supply of renewable energy and provide new employment opportunities.

Renewables Growth & Investment Strategy 2025

The Queensland Renewable Energy Council released the Renewables Growth & Investment Strategy in August 2025. The strategy, states that Qld has 8GW of committed generation and storage projects, valued at over $10.7 billion, with a broader pipeline exceeding 140GW, which is the largest in Australia and indicates strong investor interest. The document provide guidance on how Qld can amplify its position as a competitive and diversified energy leader, attract private capital and increase renewables, Stating that renewable energy projects are essential to "ensure long-term energy security, economic competitiveness and regional development" (Queensland Renewable Energy Council, 2025, p. 8).

The Project contributes to delivering more renewable energy and investment by supporting regional development, energy security and economic competitiveness.

Regional and Local

Far North Queensland Infrastructure Plan, Qld Government

The 2024 Far North Qld Infrastructure Plan (FNQIP) is a Qld Government Planning document which supports the region's growth as it adapts to new opportunities in a changing economic environment. It was developed in partnership with industry groups, community groups, Aboriginal and Torres Strait Islander peoples and 19 local governments, and one town authority across the region.

The Plan expects that the growing renewable energy industry will drive job creation and new industry development across the region, attracting skilled workers and their families who are drawn to the area's lifestyle advantages. The FNQIP highlights that a strong green economy through decarbonising supply chains in key industries will support sustainable growth and long-term resilience. In pursuing this transition, the FNQIP outlines a strong commitment to partnering with First Nations communities to ensure they share in the benefits and opportunities presented by the renewables sector.

Etheridge Shire Council Corporate Plan 2025-2029

The Corporate Plan sets out the Council's strategic direction and priorities for the next five years. It provides a framework to guide decision-making, service delivery and investment, informed by community engagement and key issues identified through the planning process.

The Corporate Plan details the Council's top strategic aims for the 5 year period (Etheridge Shire Council, n.d.-a, p. 3):

- A sustainable transport network that meets community needs.
- A sustainable environment of natural assets, water, wastewater and waste management.
- A diversified economic development ensures a prosperous Shire.
- Quality social infrastructure makes the Shire a desirable place to live.
- Best practice corporate governance and organisational excellence.

The Plan provides strategies and performance measures that will be utilised to achieve the aims of the Council. In the aim of achieving a diversified economic council the plans sets out that "companies of large-scale projects operate with a suitable social licence to our community" and "large-scale projects provide long term benefits to our community" (Etheridge Shire Council, n.d.-a, p. 10). The Plan outlines growth in economic development, tourism numbers of rural products, mining, and renewable energy as a performance measure for achieving a diversified economic base.

Ewamian Limited Strategic Plan 2022–2027

The Ewamian Strategic Plan 2022-2027 sets the Ewamian People Aboriginal Corporation's direction for the five-year period. It builds on the achievements of the 2016 plan and outlines the new priorities that will guide future action (Ewamian People Aboriginal Corporation, 2022).

It highlights some of the key priorities for the organisation:

- Expansion of Talaroo Hot Springs including the delivery of Stage 3 of Ewamian's tourism aspirations including accommodation, a festival ground and Talaroo becoming a holistic cultural and wellness centre.
- Infrastructure upgrades to Ewamian assets, such as Memorial Park and Georgetown Reserve.

- Tallaroo Infrastructure Upgrades
- Expansion of the Ewamian Limited currently employs five full-time rangers including a Ranger Coordinator, Senior Ranger and three rangers.
- Aspirations to get more Ewamian People back on Country and engaged with culture. Providing places to share and experience Ewamian culture through the Georgetown Reserve, Memorial Park, establishing a Keeping Place, and through broader engagement with the Ewamian community will contribute to the preservation of Ewamian culture.

Etheridge Shire Planning Scheme

The Etheridge Shire Planning Scheme, which commenced on 1 December 2025, provides the statutory framework to guide development across the Shire to 2040. The scheme seeks to enhance liveability and prosperity while maintaining the Shire's rural character and managing environmental and natural hazard constraints.

The planning scheme supports economic growth and diversification across agriculture, tourism, mining and renewable energy, while ensuring development is appropriately located and serviced. Renewable energy and alternative energy infrastructure are supported in rural areas, subject to environmental, cultural heritage and infrastructure considerations.

The scheme also emphasises protection of Aboriginal cultural heritage, particularly the rights and aspirations of the Ewamian People and other Traditional Owners, and supports development that delivers long term community and regional benefits.

Appendix C Social baseline

Table C-1 presents demographic data to understand the profile of economy and workforce supporting identification of social and economic impacts in the geographical area of influence.

Economy and workforce profile

Table C-1 Economy and workforce – Etheridge Shire Council

Indicator	Key trends and statistics
Gross Regional Product (GRP)	Etheridge Shire had a GRP of $114 Million in the year to June 2025.
Economic output	Economic output of $229.1 Million in 2024.
Industries of employment	The top five industry subdivisions of employment for Etheridge LGA were: 1. Agriculture (39.7%) 2. Public Administration (12.7%) 3. Accommodation (6.5%) 4. Preschool and School Education (4.5%) 5. Agriculture, Forestry and Fishing Support Services (3.4%)
Occupation	The top five occupation sub-major groups of employment for Etheridge LGA were: 1. Farmers and Farm Managers (28.0%) 2. Farm, Forestry and Garden Workers (12.7%) 3. Cleaners and Laundry Workers (4.8%) 4. Carers and Aides (4.5%) 5. Mobile Plant Operators (4.0%)
Median personal income	The median total personal income for Etheridge LGA was $744 per week or $38,688 per year.
Labour force participation rates	As at the Census, the labour force participation rate was 61.5% in the LGA.
Local jobs	There are an estimated 483 local jobs in the LGA.

Indicator	Key trends and statistics
Businesses	As at 30 June 2024, there were 217 registered businesses in the Etheridge Shire LGA. The majority (67.7%) were non-employing, while 24.4% employed between one and four people, and 6.5% employed between five and nineteen people. A small number (1.4%) of businesses employed twenty or more workers. Most local businesses had an annual turnover below five million dollars, with just three businesses (1.4%) reporting turnover above ten million dollars. This indicates a predominantly small business economy with limited large-scale enterprises. 65% of registered businesses were in the agriculture, forestry and fishing industry category.
SEIFA scores	LGA SEIFA IRSAD Decile: 6
Motor vehicle usage	5% of dwellings had no motor vehicles, while 23.8% had three or more vehicles. Most households owned either one (35.8%) or two (26.5%) vehicles.

Source: (Economy.Id, 2025; NEMA, 2026; Qld Statisticians Office, 2025; REMPLAN, 2025)

Housing and accommodation

Table C-2 summarises key housing and accommodation indicators for the RSL, highlighting overall dwelling supply, tenure patterns and the level of housing stress. The data illustrates a predominantly low-density housing stock, constrained long-term rental availability, and affordability pressures that affect both residents and incoming workers. These factors shape the capacity of the local housing marker to absorb additional Project-related demand. All data in Table Table C-2 is drawn from the 2021 ABS Census for the RSL area, unless another data source is stated.

Table C-2 Potential opportunities for local business and procurement on the Project

Indicator	Key trends and statistics
Total Dwellings	260 occupied private dwellings.
Persons per dwelling	Average of 2.2 persons per dwelling.
Household type	The majority of households were couple family with no children, (52.8%), followed by couple families with children (33.5%)
Dwelling types	68.1% separate houses, 1.2% apartments, 18.5% caravans, and 1.5% other dwellings.

Indicator	Key trends and statistics
Housing tenure	47.3% fully owned, 14.2% being purchased, 14.2% rented, 11.5% other arrangements.
Housing cost and prices.	Median mortgage repayment $758 per month (2021). No median rent published due to low rental volume (less than 10 lodgements).
Rental vacancies	The vacancy rate in Postcode 4871 (which includes Einasleigh, Georgetown, Forsayth and Mount Surprise) is at 0% as of September, 2025. It last was recorded above 2% in 2020.
Vacant or underutilised dwellings	260 occupied dwellings from an estimated 400 total private dwellings.
Mortgage repayments	Median monthly mortgage repayment $758 (2021).
Housing stress	13.5% of rent payments higher than 30% of household income. 18.9% of mortgage owners have payment over 30% of household income.
Employee housing and social housing	As of 2021, there were five social housing dwellings in Georgetown. In 2023, there were 23 Council staff properties, including 17 three-bed houses and six two-bed units and five State Government Employee Housing (GEH) houses (Etheridge Shire Council, 2023b)
Aged care	Council does not provide aged pensioner housing in the area. With the aged population increasing there is likely to be a need for additional accommodation. Council estimates needs for a further 6 dwellings (2 bed units).
Homelessness	11 people recorded as homeless, equating to 71.7 persons per 10,000 population (Etheridge Shire Council, 2023b). Overcrowding and 'couch surfing' was raised as an issue in the Etheridge Shire Council Local Housing Action Plan (Etheridge Shire Council, 2023b). It was considered that these situations aggravate social issues that cause other unintended consequences such as family and domestic violence. Also, limited availability of housing may be resulting in persons relocating from the region.

Health and wellbeing

Table C-3 provides an overview of health and wellbeing indicators for the Etheridge Shire Council, outlining local amenity, community cohesion, access to services and broader lifestyle factors that influence quality of life across the region. The data reflects a rural setting with strong community networks, but also highlights

gaps in health service availability, limited access to specialist care, workforce shortages and barriers faced by smaller towns. These trends shape how residents experience health, wellbeing and social connection and indicate varying levels of resilience across communities.

Table C-3 Health and wellbeing in Etheridge Shire Council

Indicator	Key trends and statistics
Amenity and lifestyle	Community life in the PSL and RSL is similar to other 'outback' areas in Qld. Population centres highly spread out similar to other 'outback" areas. The lifestyle is shaped by spread out population centres made up by small population of long-term resident and transient FIFO worker. Most of the amenity and services are available in Georgetown, including a post office, government administration offices, golf club, sport oval, multi-sport complex, heritage park, rodeo grounds motels, shops, including a butcher, fruit and veg shop. Other towns in the LGA, providing services are Einasleigh, Mountain Surprise and Forsayth, including local medical centres, town halls, post offices, community organisations and some other services, including a police station in Einasleigh and library in Forsyth (Etheridge Shire Council, 2023).
Community cohesion and resilience	Etheridge Shire's population centres are quite spread out and isolated, which has supported great self-reliance and resilience within the communities (Etheridge Shire Council, 2023a). There are a number of community organisation that supports social connections, including local Rural Fire Brigades, Rodeo Association and Turf Club in Georgetown, All sports club, and Gun club in Forsyth, Rodeo association and Race Club in Einasleigh, and Parents and Citizens Association and sports and recreation club in Mt Surprise (Etheridge Shire Council, 2021).
Health and wellbeing	Medical centres: 2 Need of assistance with a profound or severe disability: 31 persons (4.3%) One or more long-term health conditions were slightly lower (23.4%) than the Qld average (28.8%), with the LGA's most common long-term health conditions were Arthritis (8.8%), heart disease (including heart attack or angina) (6.0%) and mental health condition (including depression or anxiety) (5.0%). The area has limited health services. especially in remote area, the closest hospitals are Atherton Hospital and Mareeba Hospital, located over 4 hours' drive from the Project site. Provision of health services include Georgetown Primary Health Centre, Forsayth Primary Health Centre and Royal Flying Doctor Service visiting Einasleigh one a month, Forsayth and Mt Surprise fortnightly, and Georgetown once a week (Etheridge Shire Council, n.d.-a). Other visiting health services include:

Indicator	Key trends and statistics
	• Allied health: Cairns & Hinterland Hospital and Health Service and Allied Health Team visit Mt Surprise, Einasleigh, Forsayth and Georgetown every 2-3 months, including Physiotherapist, Occupational Therapist, and Social Worker. • The Oral Health Team from Atherton Hospital visit Forsayth and Georgetown, every 3-4 months. • Remote Clinics Nurse from Queensland Health visits remote townships (Mt Surprise, Einasleigh) every fortnight.
First Nations health and wellbeing (2021)	First Nations healthcare services: 0 One or more long-term health conditions: 15.2% (7 people) Participating in the labour force: 53.3% (16 people) Attending primary and secondary school: 31.3% (15 people) In 2021, First Nations communities had a relatively low rate of long-term health condition (15.2%), but relatively high need of assistance (8.3%). During the same year, First Nations people in the RSL had a lower rate of Certificate III or IV, and lower rate attending tertiary education, and higher unemployment rates, compared with non-indigenous people in the RSL (ABS, 2021) also indicating overall wellbeing: • First Nations peoples' attainment of a Certificate III & IV or higher: 12.5% (6 people), compared with non-Indigenous attainment being 22.3% (110 people). • First Nations people attending tertiary education rate is lower 0% (0 people) than non-Indigenous people 1.9% (13 people) • First Nations people have a higher unemployment rate, 10% of people over of labour force participation age (72 people), than the average non-Indigenous rate 1.6%, (340 people). There are no First Nations healthcare or wellbeing services within the Etheridge Shire Council area. Yet some specific First Nations healthcare and wellbeing services are provided in the broader Northern Queensland primary health network, aro und 4 hours' drive form the Project site, closer to the coast.
Education	Schools: 3 Attainment of a Certificate III & IV or higher: 33.7% (202 people) Attending primary, secondary or tertiary education (2021): 11.5% (84 people) There are limited educational opportunities in the areas due to the disbursed population across a large geographical area. Educational institutions included 2 early childhood education and care services, including Georgetown childcare centre, Georgetown Primary School, Mount Surprise Primary school (Etheridge Shire Council, 2023a).

Indicator	Key trends and statistics
	To enable access to primary education for all children in the LGA, Etheridge Shire Council provides weekly accommodation at Georgetown Student Hostel, for primary-aged students who cannot attend primary school where they live. The hostel is operated by contracted managers and overseen by a committee of management comprising parents, hostel managers, a school representative and a council representative (Etheridge Shire Council, n.d.-b).
Childcare	Little Gems Childcare Centre is a not-for-profit childcare centre, operated by the Etheridge Shire Council. The centre is licensed to cater for 17 children, aged from six weeks to five years old.
Transport and access	Etheridge Shire Council encompasses a transport network highly reliant on roads and vehicle travel; key transport routes include: • Roads: The Savannah Way, (3,700km route) a crucial link from east to west coasts of Australia, used by local and tourists, goes though the council area creating jobs and tourist spending opportunities.' • Bus services: 'Mt Surprise and Georgetown are serviced by three return trips a week by Trans North Bus service, connecting the area to Cairns on the East Coast to Karumba in the Gulf of Carpentaria The Shire also encompasses sealed airstrips in Georgetown, Mt Surprise, and Forsayth, and a gravel strip in Einasleigh approximately 8km form the Project site. However, there are no public services provided from these, however private plans can utilise theses airstrips if permission have been granted by Etheridge Shire Council. Additionally, the Savannahlander railway runs between Forsayth and Carins, also stopping in Mt Surprise, providing a "outback rail experience tour". Etheridge Shire Council low standard transport infrastructure has hampered economic opportunities, including development of natural resources industries. Improvements to the transport system is critical to expand community production, including widening, surfacing enhancement and drainage (Etheridge Shire Council and RDA Tropical North, 2022).
Digital Connectivity	Etheridge Shire Council's Operational Plan 2019-2020 stated that "*the size and remoteness of Etheridge Shire mean we are reliant on our communication networks whether this is mobile, broadband, fixed, Wi-Fi or satellite"* (p.17). Outlining the necessity of equitable communications networks to overcome geographical challenges and improve on access to health, education, training and employment opportunities for their residents, including socially disadvantaged groups, including people in indigenous communities and people with disabilities (Etheridge Shire Council, 2020b).

Indicator	Key trends and statistics
	The Operational Plan 2025-2026 include an action for Etheridge Shire Council to "advocate for the provision of telecommunication services, telemetry and media", indicating a remaining need to improve digital connectivity in the area (Etheridge Shire Council, 2025b).
Crime and Safety	Etheridge Shire recorded 71 offences in 2023–24, or 9,699 per 100,000 persons. • 15 offences against the person, or 2,049 per 100,000 persons • 29 offences against property, or 3,962 per 100,000 persons
Emergency services	Police stations: 3 Ambulance stations: 2 Fire stations: 0 Etheridge Shire Council has a network of emergency services in the LGA, including police stations, ambulance stations and rural fire brigade and fire and emergency services. Additionally, the Etheridge Local Disaster Management Group (LDMG) consisting of local and state agencies responsible for the planning stages of disaster management, as well as making important decisions during a disaster event, to assist the community. The group includes members from Etheridge Shire Council Georgetown SES, Qld Fire and Emergency services, Rural Fire Brigade, State Emergency Services, local police and health organisations.

Source (ABS, 2021; Etheridge Shire Council, n.d.-a, 2023a; Qld Statisticians Office, 2025)

Natural environment

Table C-4 provides an overview of the key characteristics of the natural environment within the Etheridge Shire LGA, including its location, landscape features, hydrology, protected areas, climate, natural hazards, and key infrastructure.

Table C-4 Natural environment in Etheridge Shire Council

Indicator	Key trends and statistics
Location	Etheridge Shire is situated in Far North Queensland at the southern base of the Cape York Peninsula, positioned between Cairns on the east coast and Karumba in the Gulf of Carpentaria. Covering an area of about 40,000 km2., the Shire shares boundaries with Tablelands Regional Council to the northeast, Charters Towers Regional Council to the southeast, Croydon Shire Council to the west, and Flinders and Richmond Shire Councils to the southwest.

Indicator	Key trends and statistics
Landscapes	Etheridge Shire features a diverse landscape that includes freehold and leasehold land, as well as National Parks and protected areas. The central and southern parts of the Shire are characterised by rugged, hilly terrain with cliffs and escarpments covered in scrub. In contrast, the western and southeastern areas consist mostly of flat plains and gently undulating land, featuring scattered scrub and natural waterholes.
River systems	Etheridge Shire lies mainly within the Gilbert River catchment, which includes three major river systems: the Einasleigh River in the east, the Etheridge River through the centre, and the Gilbert River in the west. These rivers generally flow from south to north, eventually reaching the Gulf of Carpentaria. The southern portion of the Shire also contributes to the Flinders River catchment.
Protected areas	The total protected areas (parks, forests and reserves) within Etheridge LGA as at 2024 was 3,690.5 $km^{2.}$ There are 27 State and Territory Reserves (7 national parks, 14 nature refuges and 6 resource reserves).
Climate	The Shire has a tropical climate with distinct wet and dry seasons. In Georgetown, the average annual rainfall is 823.5 millimetres, typically occurring over about 46 days between December and March. The mean maximum temperature is 32.7°C, while the mean minimum temperature is 18.4°C.
Natural hazards	The Etheridge Shire Local Disaster Management Group's - Local Disaster Management Plan (2023) sets out the response to managing risks around hazards. Flooding caused by coastal cyclones or monsoonal weather is a recurring risk across the Shire. While such events are rarely life threatening, they often result in the closure of key roads, leading to significant economic impacts for the region. Bushfire is also a recurring hazard, particularly during the dry season when high temperatures, low humidity, and dry vegetation increase fire risk. Bushfires can affect grazing land, biodiversity values, and rural infrastructure, and may pose risks to isolated properties and small townships. Other hazards identified in the region include severe storms, heatwaves, and drought conditions. These hazards can contribute to cumulative pressures on agricultural productivity, water availability, and community wellbeing, particularly given the remote and dispersed nature of the population.
Electrical supply	Electricity across the Shire is provided through a 132 kV transmission line that originates from a substation in Townsville. The line operates at 132 kV between Townsville and Georgetown, before stepping down to 66 kV from Georgetown to Normanton. A network

Indicator	Key trends and statistics
	of 22 kV feeder lines services the Gilbert River, Ironhurst, Oak Park, and North Head areas, as well as the townships of Forsayth, Mount Surprise, and Einasleigh. Kidston receives power from the 132 kV substation located within the township. According to Ergon Energy, in the event of a supply interruption from Townsville, the main communities could be supported by an alternative connection from Mount Garnet.

Source: (Etheridge Shire Council, 2023, p. 7-8)

Appendix D Social Impact Management Plan Framework

This section presents the indicative SIMP framework for the Kidston BSF, setting out how the identified social impacts will be managed, tracked, and reported across the Project lifecycle. The framework translates the findings of this SIA into practical commitments and provides the foundation for a full SIMP to be developed by Genex ahead of construction commencement.

The Proponent has committed to preparing a SIMP that covers the Clean Energy Hub as a whole to provide consistency across Project stages and reduce the risk of fragmented or conflicting obligations. The framework presented in Table A-1, is specific to the Kidston BSF and will be incorporated into the wider Clean Energy Hub SIMP.

The SIMP framework addresses the following five key matters set out in the Qld SIA Guideline, and which are aligned with the SIA:

- Community and Stakeholder Engagement
- Workforce Management
- Workforce Housing and Accommodation
- Local business and Industry Procurement
- Health and Wellbeing

For each key matter, the framework sets out:

- **Focus area** - the social issue or theme that the measure is designed to address.
- **Objective** - the social outcome that the measure is intended to support.
- **Management measure** - the specific action that will be undertaken through the Project to address the identified impact or opportunity.
- **Responsibility** - who is accountable for the outcome.
- **Timing** - the Project lifecycle stage(s) during which the measure applies: Establishment (E), Construction (C), Operation (O), or Decommissioning (D).
- **Performance indicator** - the measurable indicator to be used ongoing to assess whether the measure is achieving its intended outcome.
- **Monitoring activity** - how the indicator will be tracked, including data sources and methods. Genex to confirm specific approach prior to construction commencement.
- **Monitoring frequency** - how often monitoring will occur and results reported.

The Project is currently in the planning phase and detailed parameters will evolve as the Project progresses. The measures presented here are therefore indicative. A full SIMP will be prepared closer to construction commencement to allow Genex to draw on more current baseline conditions, a clearer picture of cumulative

regional demands, and direct input from the contractor. Performance indicators will be agreed with Etheridge Shire Council prior to construction commencement.

Once approved, the measures in this framework should be revisited against the conditions of approval and refined during the detailed design phase, alongside any associated management plans.

The timeframes set out in this framework are indicative. Where conditions of approval or other technical assessments specify different monitoring or reporting obligations for particular measures, those requirements take precedence. The SIMP should be treated as a living document, subject to review when project parameters change materially or when monitoring data suggests that current measures are not achieving their intended outcomes.

D-1 SIMP Framework

Key Matter: Community and stakeholder engagement							
Focus area	**Objective**	**Management measure**	**Responsibility**	**Timing for implementation[24]**	**Performance indicator**	**Monitoring activity**	**Monitoring frequency**
Community trust and engagement	Engage the local community and fulfil the requirements of the CSEP	• Develop and implement a CSEP guided by IAP2 principles • Establish a regular communication schedule through multiple channels including information sessions, newsletters, council distribution networks and direct communication with near neighbours • Incorporate educational content on BSF technology and energy distribution into engagement materials	Proponent	E, C, O, D	• Number of stakeholder engagement activities • Ratio of stakeholders engaged	Log stakeholder engagement activities, including community information sessions, near neighbour communications, council meetings, and progress association interactions, and outcomes in alignment with the CSEP objectives.	Ongoing

[24] Refers to the Project stage where the measures will apply: Establishment (E),Construction (C), Operation (O), Decommissioning (D).

Key Matter: Community and stakeholder engagement							
Focus area	**Objective**	**Management measure**	**Responsibility**	**Timing for implementation[24]**	**Performance indicator**	**Monitoring activity**	**Monitoring frequency**
Complaints and feedback management	Provide effective and timely resolution of community concerns aligned with the CSEP	• Establish a feedback mechanism accessible through multiple channels (email, phone, in person or online) • Respond to all enquiries and complaints • Maintain a feedback register reviewed regularly to identify emerging issues • Monitor media and social media to track community sentiment	• Genex • BOP Contractor • O&M Contractor	E, C, O, D	• Number of complaints • Complaint resolution rate within three business days	• Maintain a complaints and enquiries register capturing all feedback received through formal and informal channels, including phone, email, in-person meetings, and community sessions. Record date received, nature of issue, response provided, and resolution outcome. • Record response times and resolution outcomes aligned with the CSEP	Ongoing
Engagement with Traditional Owners	Support Free Prior and Informed Consent principles through co-designed engagement	• Align engagement with the development of a CHMP and/or co-designed Benefit Sharing Agreements with the Ewamian People	• Genex • Ewamian People	E, C, O, D	• Number of engagements with the Ewamian People • Progress on CHMP and Benefit Sharing Agreement milestones	Log all engagement activities with the Ewamian People, including meetings, correspondence, and outcomes, noting alignment with Cultural Heritage Management	Six-monthly

Key Matter: Community and stakeholder engagement							
Focus area	**Objective**	**Management measure**	**Responsibility**	**Timing for implementation[24]**	**Performance indicator**	**Monitoring activity**	**Monitoring frequency**
	with the Ewamian People	• Providing the Ewamian People of any changes to project design that will impact areas not yet subject to cultural heritage surveys • Providing the Ewamian People with copies of environmental reports and approvals information, and notifying them of any environmental incidents during construction and operation, including notifiable acts under the Environmental Protection Act 1994 (Qld).				Plan and Benefit Sharing Agreement processes	

Key Matter: Workforce management							
Focus area	**Objective**	**Management measure**	**Responsibility**	**Timing for implementation**	**Performance indicator**	**Monitoring activity**	**Monitoring frequency**
Local and regional employment	Contribute to local and regional employment	• Partner with Council, state government, registered training providers and First Nations businesses on recruitment and workforce development • Provide onboarding for all workers covering the local area, events, businesses and available services • Targeted outreach and advertising through multiple channels including industry events, local labour hire and First Nations businesses	• Genex • BOP Contractor	E, C, O	• Percentage of people from the region employed by the Project (including contractors) • Number of workforce development events Genex / BOP participated in • Percentage of Genex and BOP employment opportunities promoted on local social media platforms • Number of training programs offered • Number of apprenticeships offered	• Track workforce composition by place of residence • Record employee retention rates across the construction and operational workforce at agreed intervals. Note any trends or patterns in turnover	Quarterly during construction, then as required
First Nations employment	Contribute to First Nations employment and employment opportunities	• Collaborate with the Ewamian People on economic opportunities associated with the Project	• Genex • BOP Contractor	E, C, O	• Percentage of First Nations peoples employed by the Project (including contractors)	Track First Nations workforce participation numbers and retention rates, including employees sourced through engagement	Quarterly during construction, then as required

Key Matter: Workforce management							
		• Targeted employment outreach through First Nations businesses and networks, including Australian Training Works.			• Number of meetings and events held with First Nation groups and businesses on Project opportunities	with the Ewamian People and other First Nations businesses.	
Training and skills development	Provide direct and indirect training pathways with continuity beyond the construction period	• Identify entry level roles suitable for local recruitment • Provide early notification to training providers on prerequisite certifications and project timelines • Work with DSDIP, Council, Australian Training Works and registered training providers to assess traineeship opportunities during construction and into operations	• Genex • BOP Contractor	E, C, O	• Number of training programs offered • Number of apprenticeships and traineeships offered • Number of meetings held with key stakeholders to develop Project training and skills pathways	Record the number of training programs, apprenticeships, and traineeships supported by the Project, including any undertaken in partnership with Australian Training Works, registered training organisations, or government programs.	Quarterly during construction
Workforce conduct and inductions	Maintain positive relationships between workforce and	• Integrate a behavioural code of conduct in employment contracts	BOP Contractor	E, C, O	• Induction completion rate • Number of code of conduct non-compliances	• Workforce induction completion rate	Monthly during initial construction period,

Key Matter: Workforce management							
	local community	• Provide Project inductions including information about the local area				• Record number of code of conduct breaches	transitioning to quarterly
Workforce upskilling and training opportunities	Support workforce development in the region	• Develop relationships with established local workforce management organisations to provide workforce readiness and training	• Genex • BOP Contractor	E, C, O	• Workforce development engagement activities delivered	• Log engagement activities with training providers, DSDIP, and Etheridge Shire Council regarding workforce development opportunities, including lead times provided to training providers ahead of construction commencement.	Quarterly

Key Matter: Local business and industry procurement							
Focus area	**Objective**	**Management measure**	**Responsibility**	**Timing for implementation**	**Performance indicator**	**Monitoring activity**	**Monitoring frequency**
Local and regional procurement	Prioritise local and regional procurement outcomes	• Use weighted tender criteria prioritising local businesses including First Nations businesses • Advertise tenders early and widely through multiple channels including Council websites, ICN, Supply Queensland, Supply Nation and local print	• Genex • BOP Contractor	E, C, O	• Percentage of procurement spend with local and regional businesses	• Track total procurement spend by supplier location (Etheridge Shire, broader Gulf Savannah region, Queensland, national) at regular intervals during construction and operations. Require BOP • Contractor to report on local procurement outcomes using an agreed template.	Quarterly during construction, then as required
First Nations business procurement	Achieve First Nations procurement and economic participation	• For contracts greater than $500k, include evaluation criteria for Ewamian involvement • For contracts less than $1M, provide separate notice to Ewamian, favouring Ewamian on otherwise equal terms	• Genex • BOP Contractor	E, C, O	• Percentage of procurement spend with Ewamian and First Nations businesses	Track procurement spend with Ewamian and other First Nations businesses separately, including contracts above and below the $500k and $1M thresholds identified in the procurement strategy.	Quarterly during construction, then as required

Key Matter: Local business and industry procurement							
Local business access to supply opportunities	Ensure local businesses have full, fair and reasonable opportunity to bid on Project contracts	• Develop a public EOI register for local businesses • Work with local industry groups to identify businesses well placed to tender • Attend meet the buyer events in key townships • Partner with ICN, Supply Queensland and Supply Nation to create a Project profile on their registers	Genex	E, C, O	• Record of engagement relating to procurement opportunities • Number of industry events attended	• Record engagement relating to procurement opportunities • Record number of industry events attended • Record the number of industry supplier events attended, including 'meet the buyer' sessions, and note attendance and registrations received.	Monthly during construction, then as required
Job readiness assistance	Equip local businesses to access supply chain opportunities	• Support Council and other organisations with capacity building initiatives including mentoring, training and support for local businesses to meet procurement requirements • Establish prequalification system that supports local businesses to	• Genex • BOP Contractor	E, C, O	• Number of engagements about procurement opportunities	• Require BOP Contractor to report on local procurement • Record engagement activities with stakeholders about procurement opportunities • Record the use of accessible platforms such as Industry Capability Network, Supply Queensland, Supply Nation, and	Monthly during construction, then as required

Key Matter: Local business and industry procurement							
		engage with the project				council distribution networks.	

Key Matter: Housing and accommodation							
Focus area	**Objective**	**Management measure**	**Responsibility**	**Timing for implementation**	**Performance indicator**	**Monitoring activity**	**Monitoring frequency**
Local housing availability	No significant impact on local housing and accommodation availability as a result of the Project	• Accommodate construction workforce at Oaks Rush Accommodation Camp • Accommodate operational workforce at the proposed expanded facility at Old Kidston Township	Genex	C, O	• 100% of non-local construction workforce accommodated at Oaks Rush Accommodation Camp • 100% of non-local operational workforce accommodated at Kidston Township facility	• Record accommodation arrangements for construction and operational workforce	Monthly during construction
Workforce accommodation standards	Maintain accommodation standards that support workforce wellbeing	• Monitor accommodation facilities including access to recreation, telecommunications and amenities	• Genex • BOP Contractor	C, O	• Accommodation audit compliance rate • Workforce accommodation feedback activities completed	• Track accommodation facility audit outcomes • Log workforce feedback on accommodation quality	Ongoing

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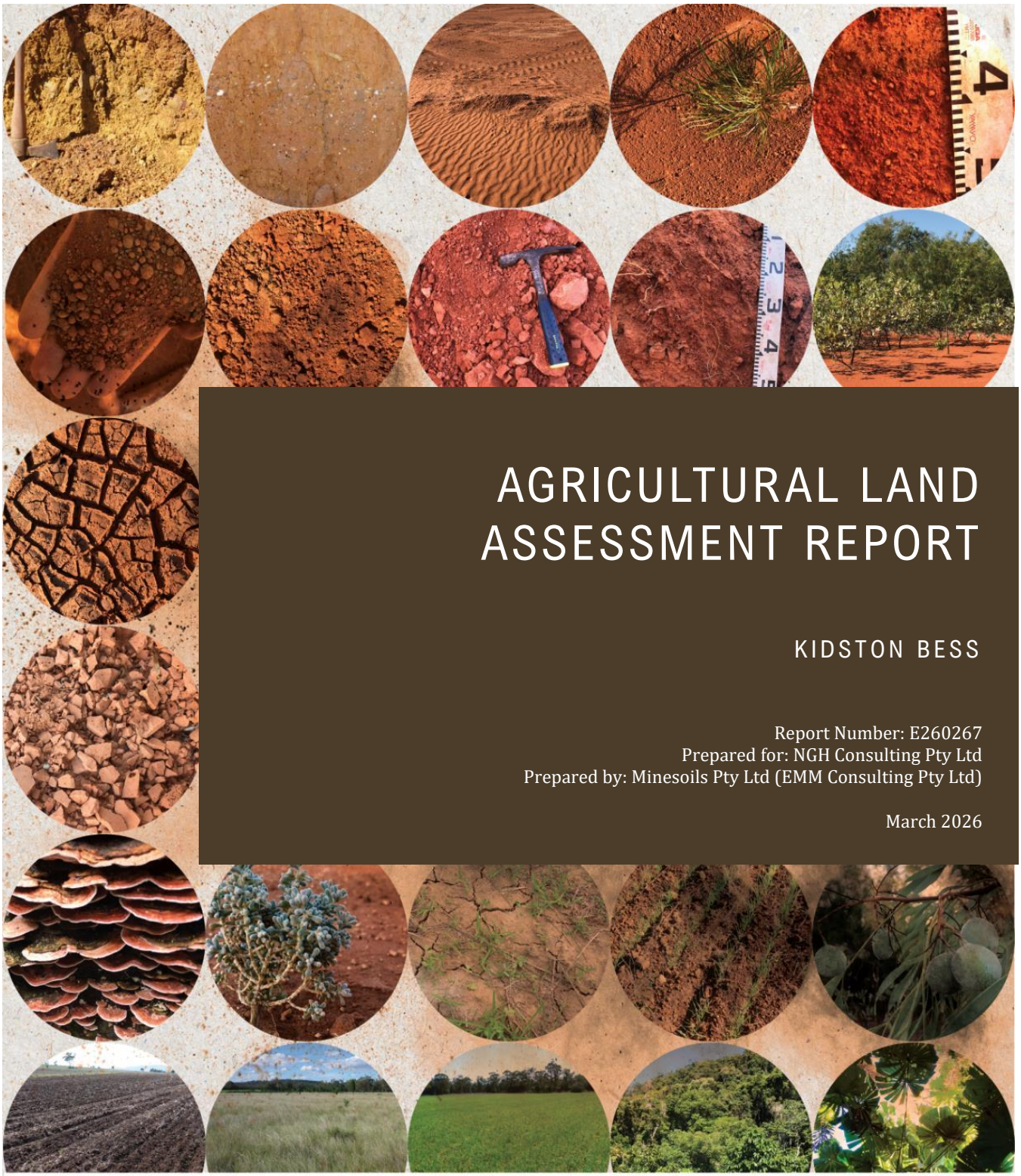
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Appendix I Agricultural Land Assessment



AGRICULTURAL LAND ASSESSMENT REPORT

KIDSTON BESS

Report Number: E260267
Prepared for: NGH Consulting Pty Ltd
Prepared by: Minesoils Pty Ltd (EMM Consulting Pty Ltd)

March 2026

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This report has been prepared by Minesoils Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with the Client. Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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DOCUMENT CONTROL

Reference	Date	Prepared by	Approved
E260267_ Draft	9 February 2025	Matt Hemingway	Matt Hemingway
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1 OVERVIEW

1.1 INTRODUCTION

Minesoils Pty Ltd (Minesoils) was engaged by NGH Consulting Pty Ltd (NGH), on behalf of Genex Power Pty Ltd, to prepare an Agricultural Land Assessment Report for the Kidston BESS project (the Project), located in the Far North region of Queensland.

The purpose of this assessment is to support the lodgement of a development application.

1.2 THE PROJECT

The Project consists of a standalone Grid Forming BESS of up to approximately 250 Megawatt (MW)/1,000 Megawatt Hour (MWh), near the town of Kidston, near Einasleigh. It is proposed to be constructed in the northern section of the Kidston Solar Farm lot, directly adjacent to the Aurumfield Substation and will connect from a private project substation into the Aurumfield Substation at 275 kilovolts (kV).

The Project is part of the Kidston Clean Energy Hub (Clean Energy Hub) which currently comprises the 50 MW Kidston Solar Project, operating since 2017, and the 250 MW / 2,000 MWh Kidston Pumped Storage Hydro Project (K2-Hydro), currently under construction. The Project will provide utility-scale energy storage to support the National Electricity Market (NEM) and enhance regional grid stability.

1.3 THE DISTURBANCE FOOTPRINT

The development is located on Lot 2 on Plan SP289310, within the northern section of the Kidston Solar Farm lot. The Project site consists of previously disturbed and cleared land associated with the historical Kidston gold mine and is co-located with existing and proposed renewable energy developments as mentioned above. Specifically, the BESS will be located on the decommissioned South Pond area of the Processing Facility that was part of the Kidston Gold Mine.

The development footprint covers an area of 3 ha as shown on **Figure 1**.

The development footprint has not recently been utilised for agricultural practices and is not considered agricultural land.

1.4 SCOPE OF WORKS

Minesoils' scope of works is to assess the Project against the following Queensland State Code 27 performance outcomes in accordance with the State Code 27: Battery storage facility development planning guideline (the Guideline).

PO9 Development is located and designed to ensure there is no unacceptable loss of high-quality agricultural land.

P10 Development does not fragment high-quality agricultural land in a way that restricts connectivity of agricultural land necessary to ensure its ongoing productivity and operation.

P11 Development is constructed to maintain the fertility and soil attributes of high-quality agricultural land and to enable decommissioning at the end of operations to return the land to pre-construction agricultural land productive value.

P12 Development on or adjacent to the stock route network maintains its operational efficiency and ongoing integrity and function.

1.5 ASSESSMENT APPROACH

In accordance with the supporting actions to address P09 -P12 outlined in the Guideline, the Minesoils assessment approach consists of the preparation an Agricultural Land Assessment (ALA) report based on a desktop review of available information that demonstrates the proposal does not result in a significant loss of high-quality agricultural land.

'No unacceptable loss' is contextualised in the Guideline as from the perspective of the degree of impact on the agricultural productivity and prosperity of the local government area and surrounding region.

If the amount of hectares of impacted high-quality agricultural land is believed to constitute 'no unacceptable loss,' a short ALA report is prepared supporting this conclusion as evidence of compliance with PO9 – P12.

High quality agricultural land means strategic cropping land (SCL), and priority agricultural areas, or Agricultural Land Classification (ALC) Class A and Class B land identified on the State Planning Policy SPP interactive mapping system, Development assessment mapping system (DAMs) or local planning instruments.

As described in Section 2, there is no high quality agricultural land within the development footprint or its surrounds. As a result, this ALA report confirms the following, as per the requirements of the Guideline:

- The site does not contain high-quality agricultural land values (as defined in State code 27 of SDAP) and therefore:
  - there is no unacceptable loss of high-quality agricultural land
  - the Project does not fragment high-quality agricultural land in a way that restricts connectivity of agricultural land necessary to ensure its ongoing productivity and operation
  - there is no requirement for the Project to be constructed in a way that maintains the fertility and soil attributes of high-quality agricultural land and to enable decommissioning at the end of operations to return the land to pre-construction agricultural land productive value.
- There are no impacts to the operational efficiency and ongoing integrity and function of the stock route network.


-436800
-436600
-436400
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N
66SP304951
Gilberton Road
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Vantor, © State of Queensland (Department of Resources) 2024, Esri, Geoscience Australia, NASA, NGA, USGS
Legend
Disturbance Footprint
Lot Boundary
Natural Watercourse
GDA2020 MGA Zone 55
0 50 100 200 300
Meters
Scale: 1:10,000 @ A4
MINESOILS
LAND & REHABILITATION SPECIALISTS
Disturbance Footprint
FIGURE 1
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2 SITE CHARACTERISTICS

2.1 LANDSCAPE

The Project is situated within the Einasleigh Uplands Bioregion, which consists of a series of rugged hills and ranges, dissected plateaus and alluvial and sand plains (DCCEEW, 2009). The landscape surrounding the Project is characterised by open woodland vegetation, gently undulating terrain and low regional population density.

The development footprint location was selected to optimise use of existing cleared industrial land, minimise agricultural, environmental and social impacts, and leverage existing transmission and road infrastructure associated with the Hub.

2.2 LAND USE

The development site occupies the northern section of Lot 12 on Plan SP345756, within the broader Kidston Clean Energy Hub on the historic Kidston Gold Mine site. The development footprint occupies vacant land that has been extensively disturbed by former mining and renewable energy construction activities and contains established infrastructure, including access roads, cleared benches and the existing Aurumfield Substation.

Based on satellite imagery (Geoscience Australia, 2025), it is determined that no agricultural activity has occurred within the last 40 years. Cattle grazing has been avoided to prevent conflict with the operations of the site.

No sensitive agricultural activities such as intensive plant or livestock agriculture have been identified within the immediate surrounds or broader locality.

2.3 AGRICULTURAL LAND CLASS MAPPING

Agricultural Land Classification (ALC) is a hierarchical scheme based on interpreted land evaluation information. It is used to assess the location and extent of agricultural land that can be used sustainably for a wide range of land uses, with minimal land degradation.

There are four classes (A, B, C and D). The classes imply a decreasing range of land use choice and an increase in the severity of land use limitations and/or land degradation hazard. Class A land has the greatest potential for producing the widest array of crops, while Class D land is unsuitable for any agricultural land use.

Class A land is suitable for a wide range of current and potential crops with nil to moderate limitations to production.

Class B land is suitable for a narrow range of crops. The land is suitable for sown pastures and may be suitable for a wider range of crops with changes to knowledge, economics or technology.

Class C land is suitable only for improved or native pastures due to limitations that preclude continuous cultivation for crop production. Some areas may tolerate a short period of ground disturbance for pasture establishment.

The development footprint and surrounds is dominated by ALC C, with the nearest ALC class A or B land located approximately 17 kilometres (km) to the east, as shown on **Figure 2**.

2.4 STRATEGIC CROPPING LAND TRIGGER MAPPING

Strategic cropping land (SCL) is land that is, or is likely to be, highly suitable for cropping because of a combination of the land's soil, climate and landscape features. Regional level mapping of SCL aims to represent Queensland's best agricultural land, which is protected under state legislation to prevent permanent damage from activities like mining and urban development. This land meets specific mapping and assessment criteria, making it essential for the state's agribusiness and requiring developers to avoid or minimize impacts on it.

There is no trigger mapped SCL over the development footprint, its surrounds or wider locality. The nearest trigger mapped SCL land is located approximately 120 km to the north east, as shown on **Figure 3**.

2.5 PRIORITY AGRICULTURAL AREAS

Priority Agricultural Areas (PAAs) are strategic clusters of the most regionally significant agricultural production areas that contain various priority agricultural land uses. These uses include broadacre cropping, horticulture, intensive animal husbandry, plantation forestry and terrestrial aquaculture. Any non-agricultural use or resource activity seeking to operate in these areas will not be supported unless they can co-exist for mutual benefit and without compromising current or future ability to operate. PAAs are defined terms under the RPI Act. They identify geographic areas with specific values for the purposes of both the RPI Act and the Planning Act to achieve a consistent planning outcome.

There are no PAAs mapped within the Development Area, its immediate surrounds, or the wider locality. The nearest PAA is approximately 180 km to the east, as shown on **Figure 4**.

2.6 HIGH QUALITY AGRICULTURAL LAND

High quality agriculture land is defined in the QLD State Code 27 as SCL, and PAAs, or ALC Class A and Class B land identified on the SPP interactive mapping system, Development Assessment Mapping System (DAMs) or local planning instruments.

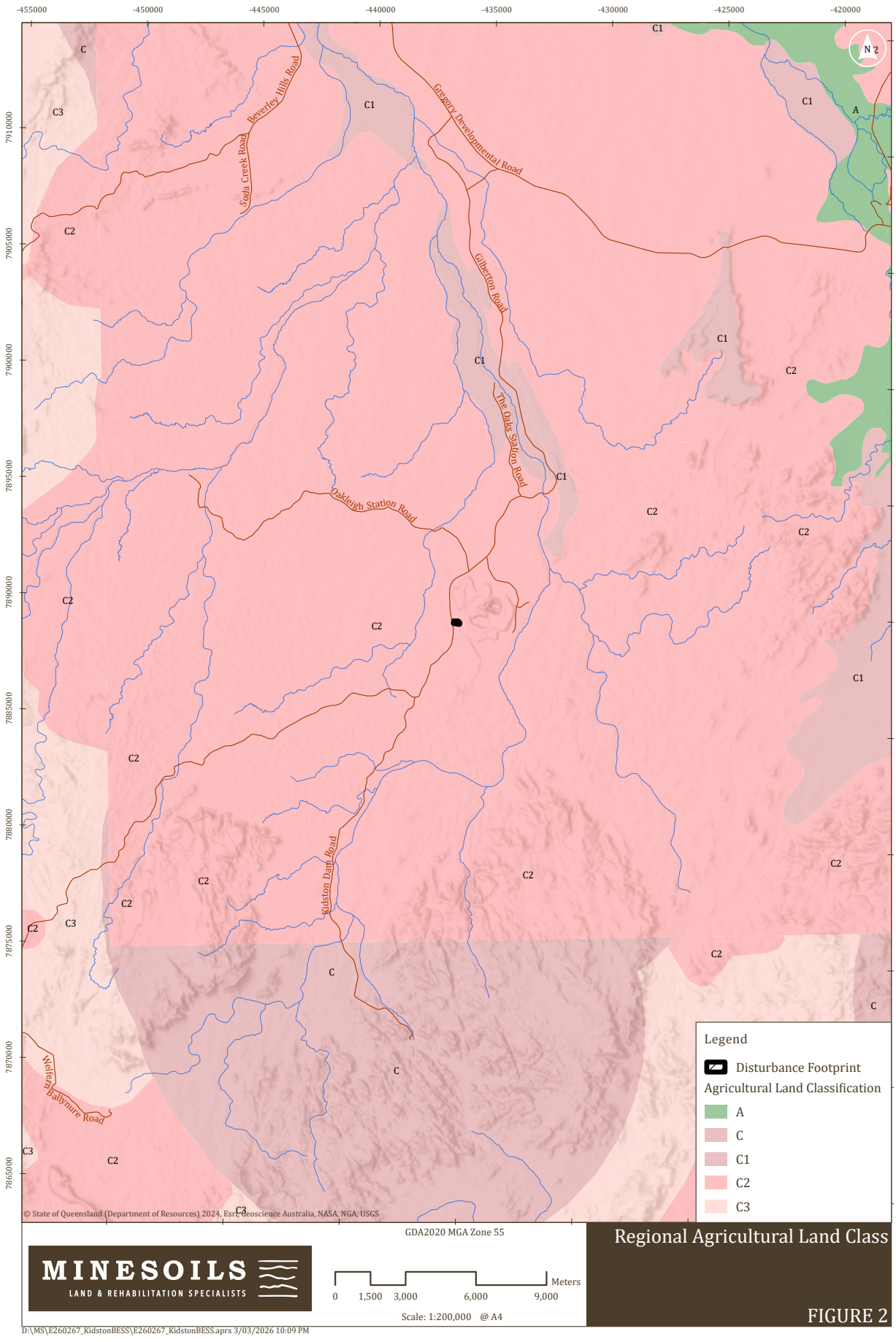
Therefore, based on the absence of regionally mapped ALC class A and B lands, trigger mapped SCL, and PAAs within the development footprint or its surrounds, as described in Sections 2.3 to 2.5, it is determined that there is no high quality agricultural land within the development footprint.

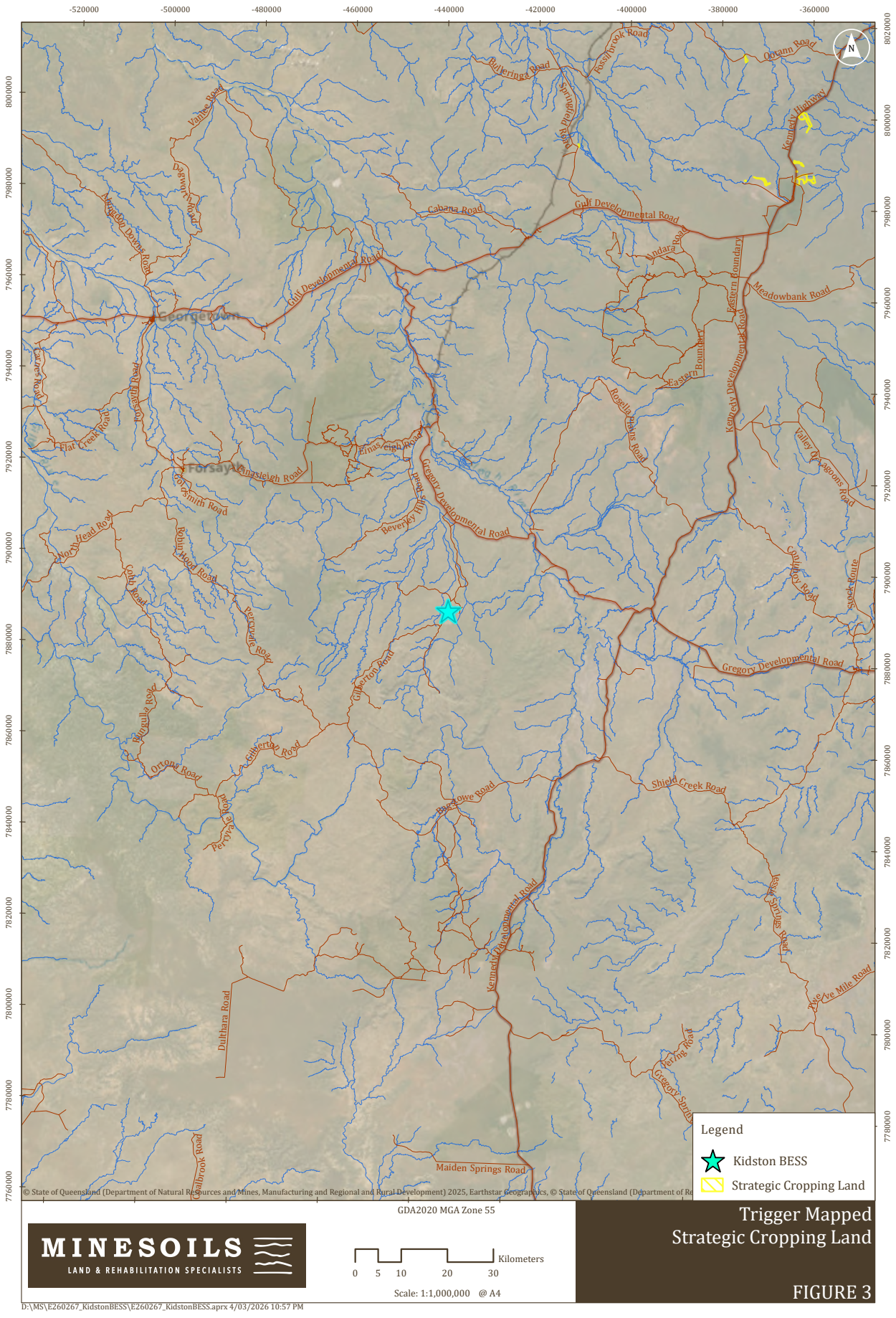
2.7 STOCK ROUTE NETWORK

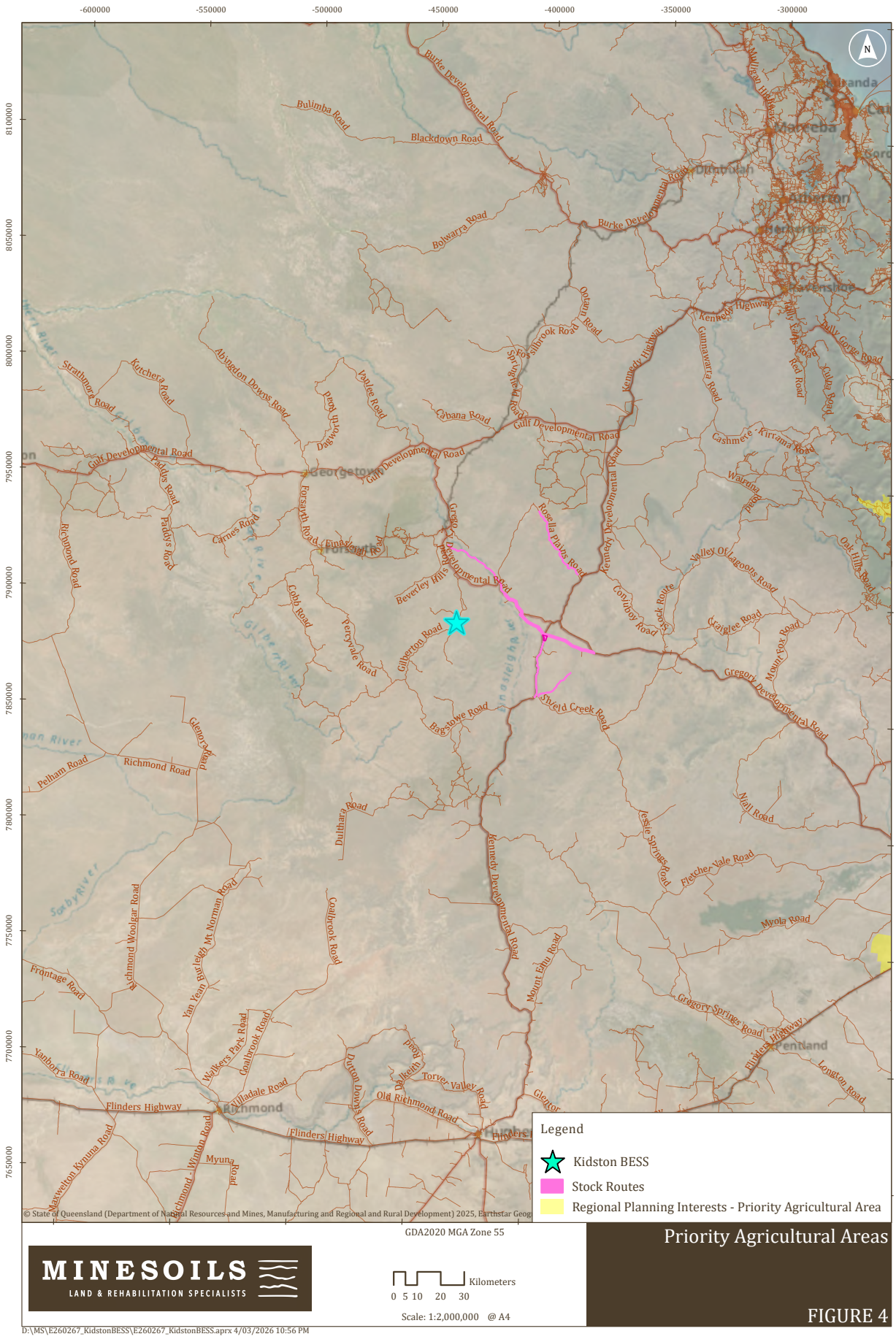
In Queensland, stock routes include 72,000km of roads, reserves, and corridors on pastoral leases and unallocated state land. Together with dedicated reserves for travelling stock, they make up the 2.6 million hectare Queensland stock route network.

The Queensland stock route network is vital infrastructure for the pastoral industry, supporting the movement of stock and providing pasture for emergency agistment.

The nearest stock route to Project is approximately 20 km to the east, as shown on **Figure 4**.


-455000
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N
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Soda Creek Road
Gregory Developmental Road
Gilberton Road
The Oaks Station Road
Oakleigh Station Road
Kidston Dam Road
Welford Ballynure Road
C
C1
C2
C3
A
Legend
Disturbance Footprint
Agricultural Land Classification
A
C
C1
C2
C3
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GDA2020 MGA Zone 55
MINESOILS
LAND & REHABILITATION SPECIALISTS
0 1,500 3,000 6,000 9,000
Meters
Scale: 1:200,000 @ A4
Regional Agricultural Land Class
FIGURE 2
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Forsayth
Bullwinga Road
Rossbrook Road
Ottann Road
Kennedy Highway
Vanhee Road
Dalgarno Road
Cabana Road
Gulf Developmental Road
Undara Road
Eastern Boundary
Meadowbank Road
Kennedy Developmental Road
Mungabar Downs Road
Flat Creek Road
Forsayth Road
Kingsleigh Road
Elmas Creek Road
Gregory Developmental Road
Rosella Plains Road
Valley of Lagoons Road
Colsmith Road
North Head Road
Robin Hood Road
Beverley Hills Road
Stock Route
Percyvale Road
Gilberton Road
Ortona Road
Mingulla Road
Shield Creek Road
Baccalowe Road
Jessop Springs Road
Five Mile Road
Dalthara Road
Irving Road
Gregory Springs
Saltbrook Road
Maiden Springs Road
Legend
Kidston BESS
Strategic Cropping Land
© State of Queensland (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development) 2025, Earthstar Geographics, © State of Queensland (Department of Re
GDA2020 MGA Zone 55
0 5 10 20 30
Kilometers
Scale: 1:1,000,000 @ A4
MINESOILS
LAND & REHABILITATION SPECIALISTS
Trigger Mapped
Strategic Cropping Land
FIGURE 3
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N
Burke Developmental Road
Bulimba Road
Blackdown Road
Bolwarra Road
Dimbulah
Mareeba
Atherton
Kennedy Highway
Ootann Road
Fossilbrook Road
Springfield Road
Gunnawarra Road
Cashmere - Kirrama Road
Walrunga Road
Oak Hills Road
Valley Of Lagoons Road
Craiglee Road
Mount Fox Road
Gregory Developmental Road
Rosella Plains Road
Kennedy Developmental Road
Connor Road
Stock Route
Beverley Hills Road
Gilberton Road
Percyvale Road
Cobb Road
Forsyth Road
Carnes Road
Paddys Road
Richmond Road
Strathmore Road
Kitchera Road
Abingdon Downs Road
Dagmar Road
Vadlee Road
Cavana Road
Gulf Developmental Road
Georgetown
Finaughy Road
Shield Creek Road
Ragstowe Road
Glenormiston Road
Pelham Road
Richmond Road
Dulthara Road
Kennedy Developmental Road
Jessie Springs Road
Neill Road
Fletcher Vale Road
Myola Road
Mount Emu Road
Gregory Springs Road
Flinders Highway
Pentland
Longton Road
Coalbrook Road
Richmond Woolgar Road
Van Vean Burleigh Mt Norman Road
Frontage Road
Walkers Park Road
Yanborra Road
Dutton Downs Road
Dalkeith Road
Torver Valley Road
Old Richmond Road
Gleneton
Hughenden
Villadale Road
Richmond
Flinders Highway
Maxwelton Kynuna Road
Richmond - Winton Road
Myuna Road
Legend
Kidston BESS
Stock Routes
Regional Planning Interests - Priority Agricultural Area
© State of Queensland (Department of Natural Resources and Mines, Manufacturing and Regional and Rural Development) 2025, Earthstar Geog
GDA2020 MGA Zone 55
Kilometers
0 5 10 20 30
Scale: 1:2,000,000 @ A4
MINESOILS
LAND & REHABILITATION SPECIALISTS
Priority Agricultural Areas
FIGURE 4
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3 PERFORMANCE OUTCOME ASSESSMENT

The following assessment addresses the agriculture performance outcome codes relevant to the Project.

P09 *Development is located and designed to ensure there is no unacceptable loss of high-quality agricultural land.*

As demonstrated in Section 2.6, the Project does not occur on high quality agricultural land, as defined in the QLD State Code 27 as SCL, and PAAs, or ALC Class A and Class B land identified on the SPP interactive mapping system, DAMs or local planning instruments. Therefore, there will be no loss of high quality agricultural land.

P10 *Development does not fragment high-quality agricultural land to the extent of restricting the vital connectivity of agricultural land necessary to ensure its ongoing productivity and operation.*

The Project does not occur on, adjacent to, or nearby to high quality agricultural land. Therefore, the Project will not fragment high-quality agricultural land to the extent of restricting the vital connectivity of agricultural land necessary to ensure its ongoing productivity and operation.

P11 *Development is constructed to maintain the fertility and soil attributes of high-quality agricultural land and to enable end of operations decommissioning back to pre-construction agricultural land values.*

There will be no impact on high quality agricultural land. In addition, the Project will be constructed on previously disturbed land which has not previously been used for agricultural land uses. Therefore, there is no requirement for the Project to be constructed in a way to maintain the fertility and soil attributes of high-quality agricultural land and enable end of operations decommissioning back to pre-construction agricultural land values.

A decommissioning and rehabilitation plan prepared for the Project will ensure the development footprint is returned to a suitable post-Project land use.

P12 *Development on or adjacent to the stock route network maintains its operational efficiency and ongoing integrity and function*

The Project will not occur on or adjacent to the stock route network, as demonstrated in Section 2.7. Therefore, the Project does not compromise the network's operational efficiency and ongoing integrity and function.

4 CONCLUSION

This Agricultural Land Assessment has determined that the Project meets the performance outcomes of Queensland State Code 27 which relate to agricultural land.

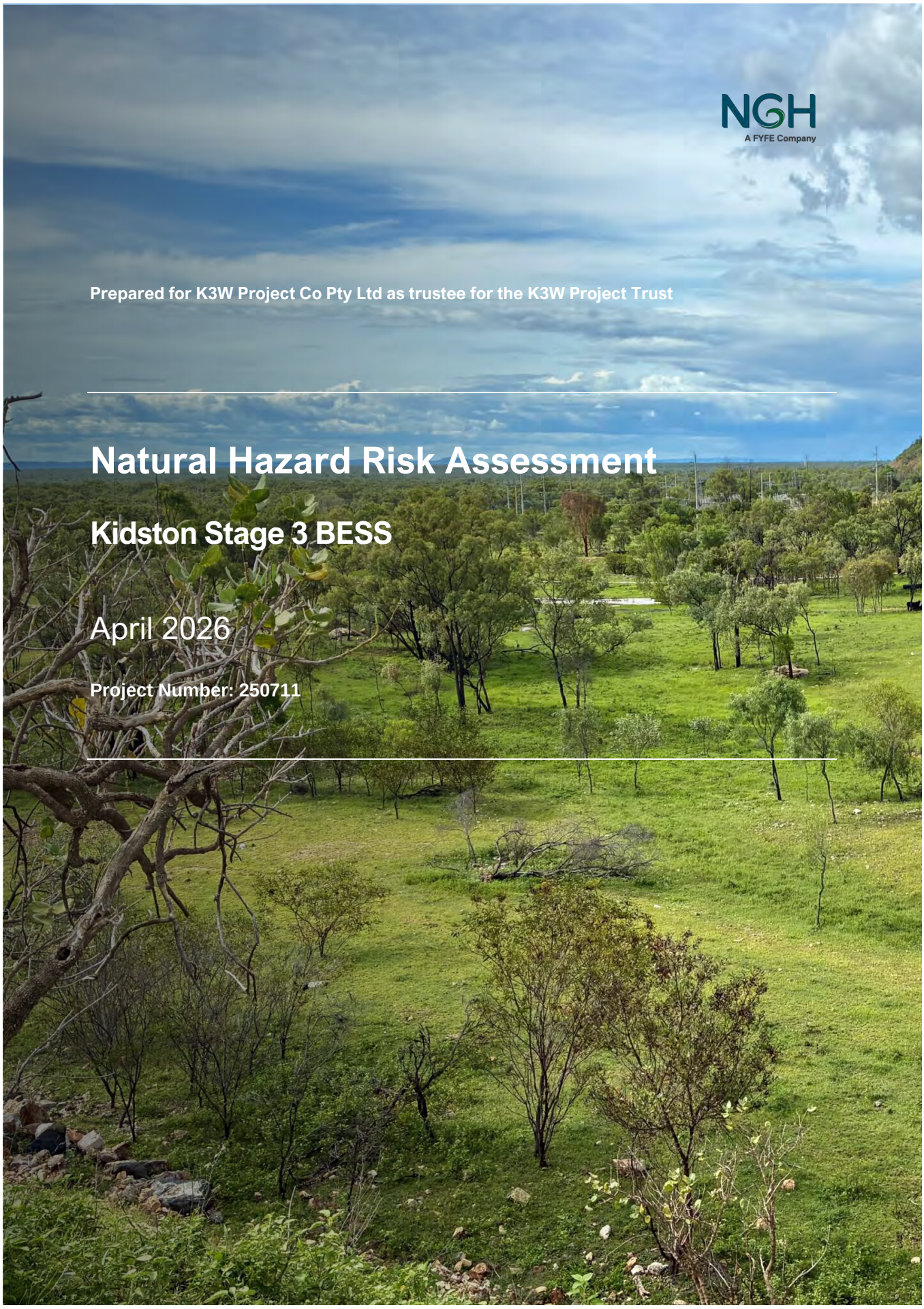
5 REFERENCES

Department of Climate Change, Energy, the Environment and Water (2009) *Einasleigh Uplands bioregion*

Geoscience Australia (2026) Historical Aerial Photography Database. Accessed 03.03.2026: Historical Aerial Photography | Geoscience Australia

Queensland Department of State Development, Infrastructure and Planning (2026) *Planning guideline: State code 27: BESS development*

Appendix J Natural Hazards Risk Assessment (and Bushfire Management Plan)



Prepared for K3W Project Co Pty Ltd as trustee for the K3W Project Trust

Natural Hazard Risk Assessment

Kidston Stage 3 BESS

April 2026

Project Number: 250711

Natural Hazard Risk Assessment

Kidston Stage 3 BESS

Document verification

Project Title:	Kidston Stage 3 BESS
Project Number:	250711
Project File Name:	250711 - Kidston Natural Hazard Risk Assessment - Final V1

Revision	Date	Prepared by	Reviewed and approved by
Draft V1	13/03/2026	Isabelle Andary-Geslin	Dominic Adshead Amylee Quirk
Draft V2	17/04/2026	Isabelle Andary-Geslin	Dominic Adshead
Final V1	30/04/2026	Isabelle Andary-Geslin	Dominic Adshead

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We acknowledge the Traditional Owners of this land and pay our respect to Elders past, present and emerging. We recognise that the First Nations peoples of Australia have traditionally managed the resources of this land in a sustainable way, and that they are the original custodians of the Australian environment.

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Acronyms and abbreviations

Term	Description
APZ	Asset Protection Zone
AS	Australian Standard
BESS	Battery Energy Storage System
EMS	Energy Management System
km	Kilometre
kV	Kilovolt
kW/m^2	Kilowatts per metre squared
LGA	Local Government Area
m	Metres
MCU	Material Change of Use
MW	Megawatt
MWh	Megawatt hour
PO	Performance Outcome
RaL	Reconfiguring a Lot
RMU	Ring Main Unit
SARA	State Assessment and Referral Agency

1. Introduction

1.1. Purpose of the report

This Natural Hazard Risk Assessment has been prepared on behalf of Genex Power Proprietary Limited (Genex, or the Applicant), who is seeking a development approval from State Assessment and Referral Agency (SARA), as the assessment manager under the *Planning Act 2016* (Queensland), for a Material Change of Use (MCU) for a Battery Energy Storage System (BESS) (the Project). A separate Reconfiguring a Lot (RaL) (one lot into two and easement) approval is also required to assist in facilitating the BESS construction and operation, for which the assessment manager is Etheridge Shire Council.

The aim of this Natural Hazard Risk Assessment report is to determine the level of natural hazard risk to the Project and identify potential protection measures. This report is prepared in accordance with the legislative and policy requirements detailed in Section 2.

1.2. Methodology

This Natural Hazard Risk Assessment consists of the following stages:

- A desktop assessment of proposed infrastructure in relation to potential natural hazard risk factors present
- A site assessment to confirm bushfire risk factors present
- Assessing compliance against legislative and policy requirements detailed in Section 2.

In relation to this assessment, please note the desktop and site assessment of risks and impacts was based on best available information at the time of the site visit and the designs provided by the client. It should be noted that the measures contained in this document cannot guarantee that a building or asset will survive a natural hazard event on every occasion. This is substantially due to the unpredictable nature and behaviour of weather conditions, a reliance on ongoing and timely inspections, monitoring and maintenance of assets to be completed, and ongoing implementation of mitigation measures.

1.3. Overview of the proposed Project

The Project consists of a standalone Grid Forming BESS of up to approximately 250 Megawatt (MW) / 1,250 Megawatt Hour (MWh), near the town of Kidston, near Einasleigh, Far North Queensland. It is proposed to be constructed in the northern section of the Kidston Solar Farm lot, directly adjacent to the Aurumfield Substation (refer Figure 1-1) and will connect from a private project substation into the Aurumfield Substation at 275 kilovolts (kV).

The Project is part of the Kidston Clean Energy Hub which currently comprises the 50 MW Kidston Solar Project, operating since 2017, and the 250MW / 2,000MWh Kidston Pumped Storage Hydro Project (K2-Hydro), currently under construction. The infrastructure included in the Project is detailed in Table 1-1 below. All infrastructure will be located within the Project Footprint.

Table 1-1: Project Infrastructure

Infrastructure	Description
Battery units	Containerised units will encompass battery components, with each unit in the same size and dimension of a 20-foot shipping container. These will be manufactured off-site and delivered to the Project Footprint for installation. Up to 200 containerised units will be installed, with dimensions of up to 4.97 metres (m) x 8.55m x 2.66m (H x L x W) each.
Power station (including conversion system or inverter, transformer and ring main unit)	Power conversion systems (inverters and transformers) will convert stored energy (direct current) to network electricity (alternating current). The containerised units will encompass the system components. The Project would include up to 80 inverters and 40 step-up transformers, with are 5 battery skids shared between 2 inverters, all of which are connected into a MV skid that contains one step up transformer and one Ring Main Unit (RMU).
Controller	The BESS will have a supervisory control and data acquisition system and a battery management system. These systems will enable real-time monitoring, fault detection, remote diagnostics, and control of battery operations, ensuring safe and efficient performance.
Heating, cooling and ventilation	Battery Units: Each battery unit will feature an integrated thermal management system, typically utilising liquid cooling and/or heating to maintain optimal operating temperatures. Air cooling may be used for some auxiliary electrical components. Humidity control systems will also be integrated to protect against condensation and moisture ingress. Inverters: Inverters will use a dual air-cooling system - one circuit brings in outside air and vents it out, while the other recirculates air within a sealed section to protect sensitive equipment.
Energy management system (EMS)	A power plant controller integrated with an EMS will coordinate the operation of the BESS for compliance with grid requirements. The EMS will optimise charge/discharge cycles, monitor performance, and enable integration with other energy resources to support network stability.
Cabling	Underground electrical cabling and fibre optic cabling will connect the battery units to the power stations, and site office/distribution centre (monitoring and control equipment). It will be designed in accordance with Australian and International Standards, as well as manufacturer's specifications. The BESS will connect to the Aurumfield Substation via overhead

Infrastructure	Description
	transmission line (to be determined).
Substation	The BESS will be connected to an onsite Project substation, and subsequently Powerlink's existing Aurumfield Substation.
Lighting	Security lighting will be included within the development. All lighting will be directed into the Development Footprint and comply with *Australian Standard (AS) 4282:2019 Control of the obtrusive effects of outdoor lighting* (Standards Australia, 2019), to minimise impacts on sensitive receivers.
Site facilities	Site facilities will be established to accommodate monitoring and control equipment, operation and maintenance amenities, carpark, communications equipment, storage facilities and supplies as needed.

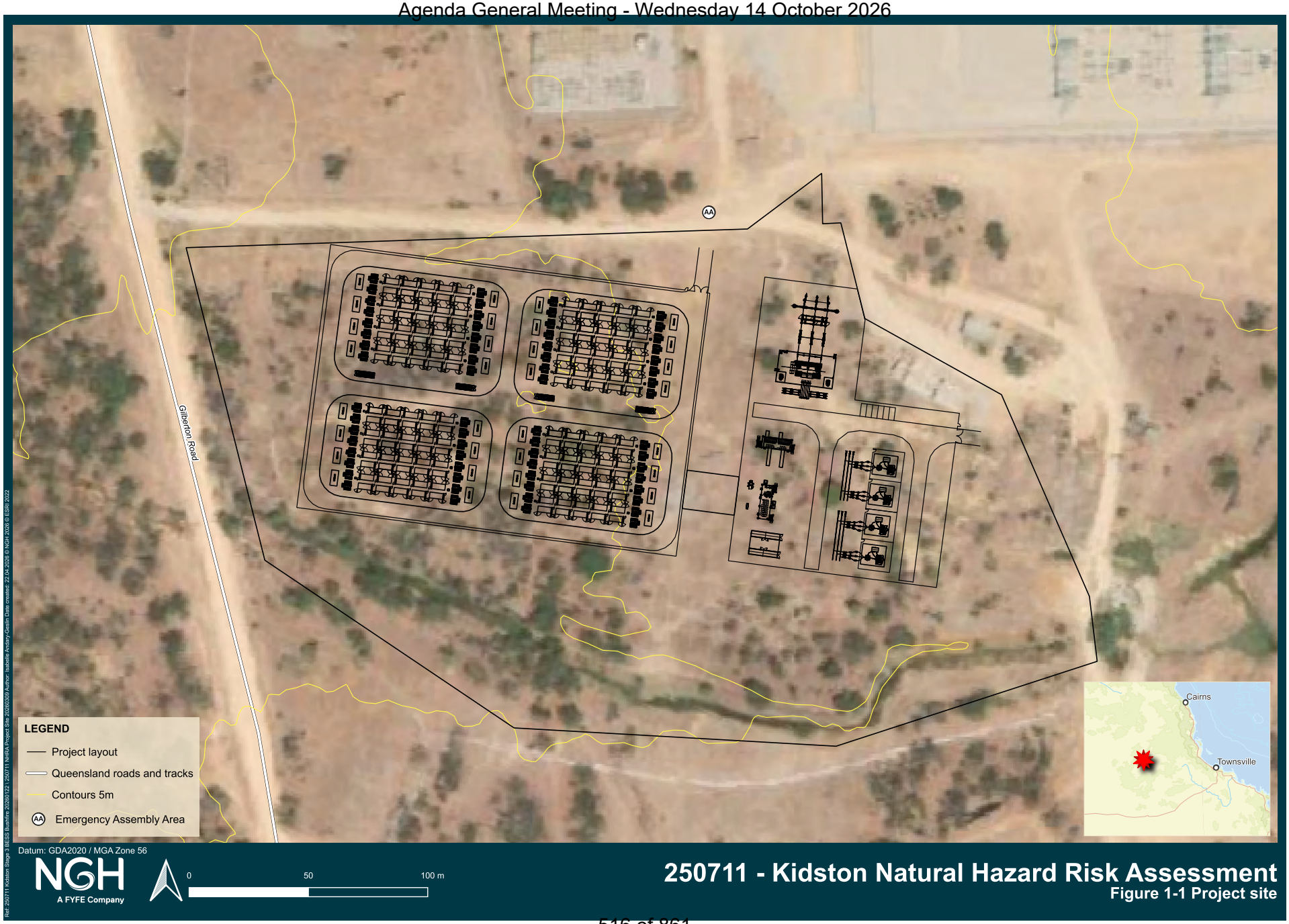
1.4. Site location and context

The Kidston BESS is located within the Etheridge Shire Local Government Area (LGA), approximately 280 kilometres (km) west of Townsville and 40km north-west of Lyndhurst, in north-western Queensland.

The development site occupies the northern section of Lot 12 on Plan SP345756, within the broader Kidston Clean Energy Hub on the historic Kidston Gold Mine site. The area has been extensively disturbed by former mining and renewable energy construction activities and contains established infrastructure, including access roads, cleared benches and the existing Aurumfield Substation.

The Project area is situated within the Einasleigh Uplands Bioregion, characterised by open woodland vegetation, gently undulating terrain and low regional population density. The location was selected to optimise use of existing cleared industrial land, minimise environmental and social impacts, and leverage existing transmission and road infrastructure associated with the Hub.

The BESS site is accessed from Gilberton Road via the existing mine access road and will operate adjacent to other renewable energy facilities including the Kidston Solar Farm and K2-Hydro.


Gilberton Road
AA
LEGEND
Project layout
Queensland roads and tracks
Contours 5m
Emergency Assembly Area
Cairns
Townsville
Datum: GDA2020 / MGA Zone 56
0
50
100 m
NGH
A FYFE Company
250711 - Kidston Natural Hazard Risk Assessment
Figure 1-1 Project site
Ref: 250711 Kidston Stage 3 BESS Bushfire 20260122 | 250711 NHRA Project Site 20260309 Author: Isabelle Anstey-Gaskin Date created: 22.04.2026 © NGH 2026 © ESRI 2022

2. Legislative and Policy Framework and relevant guidelines

2.1. Queensland Planning Act 2016

This application is made under the Queensland Planning Act 2016 and seeks a Development Approval for a MCU for a BESS. SARA is the assessment manager for the MCU application. A separate RaL (one lot into two and easement) approval is also required to facilitate the Project, for which Etheridge Shire Council is the assessment manager.

This Natural Hazard Risk Assessment supports the impact assessment process by identifying and addressing natural hazard risks relevant to the Project. Under the Queensland *Planning Act 2016*, a Natural Hazard Risk Assessment is required as part of the impact assessment process. BESS developments are regulated by *State code 27: BESS storage facility development* (Queensland Government, 2025) and the *Planning Regulation 2017*, which mandate that developers demonstrate how risks from natural hazards will be identified, assessed, and mitigated prior to approval.

2.2. State Code 27: Battery storage facility development

This Natural Hazard Risk Assessment is required for Kidston BESS to contribute to satisfying Performance Outcomes (PO) 13, 14, and 15 of State Code 27 (Queensland Government, 2025) as assessed in Section 4.3 of this report. Specifically:

- *PO13 - Development is located and sited to avoid natural hazard areas including high erosion risk areas and bushfire prone areas.*
- *PO14 - Where development cannot be located and sited to avoid natural hazard areas (e.g. Bushfire prone areas, and high erosion risk areas), demonstrate that:*
    - *There is no suitable alternative location*
    - *Infrastructure can function effectively during and after a natural hazard event*
    - *Mitigation measures are implemented to reduce the risk to people, property and the environment to a tolerable level.*
- *PO15 - Bushfire hazard is identified and risk is mitigated through strategies for vegetation management, landscape management, water supply, provision of appropriate access, identification of safe assembly or evacuation routes and establishing cleared and maintained asset protection zones around infrastructure that is wholly contained on site.*

2.3. State Planning Policy 2017

The State Planning Policy identifies natural hazards, risk and resilience as a state interest. This Natural Hazard Risk Assessment demonstrates consistency with the State Planning Policy by identifying relevant hazards and confirming that appropriate mitigation and resilience measures are incorporated. The natural hazards, risk and resilience assessment benchmarks are detailed in Appendix A.

2.4. Guidelines

Where legislative and policy frameworks and relevant guidelines do not include guidance material of necessary protection or assessment measures, relevant alternatives have been selected. These include:

- Country Fire Authority *Design Guidelines and Model Requirements: Renewable Energy Facilities V4* (CFA, 2023)
- Queensland Government *Climate Change and Natural Hazards Risk Assessment Guideline* (Department of Transport and Main Roads, 2025).

3. Hazard and risk assessment

3.1. Overview

The State of Queensland (2017) identifies several natural hazards that have the greatest potential impact to the state, of which the following are considered to have the potential to impact the Project site:

- Cyclone and storm
- Erosion
- Flood
- Bushfire.

A desktop assessment was completed to confirm bushfire, flood, erosion, and cyclone risk factors and summarised below. A site assessment to assess bushfire risk factors was also completed. For each hazard the following information was used to characterise likelihood and consequence, and determine an overall risk rating. A risk assessment was undertaken for cyclone, storm, erosion, flood, and bushfire for the Project site. The Likelihood Criteria, Consequence Criteria, and Risk Rating Matrix were assessed against the benchmarks detailed in Appendix A of *Climate Change and Natural Hazards Risk Assessment Guideline* (Department of Transport and Main Roads, 2025) (and reproduced in Appendix B).

3.2. Extreme weather event history

The region surrounding the Project site is remote and sparsely populated, with undulating terrain dominated by mostly woodland vegetation, and is susceptible to bushfires, flooding, severe storm events, cyclones, extreme heat and drought (Etheridge Shire Council, 2021, Department of Environment, Science and Innovation, 2025a). The broader northern and inland Queensland region has experienced multiple heavy rainfall and flooding events associated with monsoonal activity topical lows and decaying cyclones, occurring roughly every few years (e.g. 2011, 2019, 2022, 2024) (Queensland Reconstruction Authority, n.d). Increased rain events promote rapid vegetation growth, which can increase fuel loads and elevate bushfire risk during the dry seasons (Department of Environment, Science and Innovation, 2025b). This is demonstrated with fires like the 2024 Mount Tabor and the broader 2023 Southern Queensland bushfires impacting the surrounding area (Queensland Reconstruction Authority, n.d.). The repeated extreme weather events in recent years align with broader findings that these events (heavy rainfall, severe storms, flood risk, and bushfires) are increasing in frequency and/or intensity (Queensland Reconstruction Authority, n.d.).

3.3. Cyclone and storm

The Queensland coastline is susceptible to tropical cyclones with an average of 4.7 tropical cyclones per year affecting the Queensland Tropical Cyclone Warning Centre area of responsibility (Department of Environment and Resource Management, 2011). Kidston and the broader Etheridge Shire region lie well inland of Townsville, however it periodically is affected by ex-tropical systems and severe weather that move westward across North Queensland, producing intense rainfall, severe storms, and rapid-onset flooding that have the potential to impact project infrastructure.

Although Kidston is a considerable distance from Queensland's coastline, historical weather records show it remains an area indirectly influenced by tropical cyclone activity. Australia's eastern coast has a long-term average number of 4 tropical cyclones per year (Queensland averaging 4.7) with an average of one per four systems making landfall (Bureau of Meteorology, 2022). Although the risk of one of these systems having a direct impact on Kidston is low, there is a risk of secondary indirect impacts relevant to local hazard planning, including severe storms, heavy rainfall and flooding (Etheridge Shire Council, 2026).

As Kidston lies within North Queensland, it is particularly influenced by severe storm systems which are the most frequent and costly natural hazard in Queensland (Department of Environment, Science and Innovation, 2025c). Consequently, *The Ethridge Shire Local Disaster Management Group* has outlined severe storm events as a significant hazard that poses risk to the area and is outlined in the Local Disaster Management Plan (Etheridge Shire Council, 2021). The Bureau of Meteorology *Severe Storms Archives* suggest that Queensland as a state experiences frequent episodes of severe storm events, with 1007 severe storm events recorded since 2010 (Bureau of Meteorology, n.d.). These thunderstorms have the potential to generate hazardous conditions including destructive winds, large hail, and dangerous lightning, leading to fatalities from strikes, falling trees, windborne debris, and flash flooding. Overall, The Project site is considered to have medium storm risk, and low cyclone risk (Table 3-1).

3.4. Erosion

The Project site is not exposed to coastal erosion risk (Department of Environment, Science and Innovation, 2026d). This is due to coastal hazard maps defining erosion-prone zones along the coast based on storm, sea level rise and sediment processes, rather than inland locations (Department of Environment, Science and Innovation, 2026d). Inland Queensland landscapes, such as the Project site, can instead be subject to soil erosion from water and wind when soils are exposed (Queensland Government, 2025a, Queensland Government, n.d.). Heavy tropical rainfall events can cause sheet, rill, and gully erosion by moving soil with runoff, especially where vegetation cover is low, and strong winds can detach and transport soil particles in semi-arid areas under drought or overgrazed conditions (Queensland Government, 2025a). Soil erosion depends on rainfall intensity, soil type, slope, and land use, and can lead to loss of topsoil and degraded land productivity if unmanaged (Queensland Government, 2025b).

The Project site is located in a gently undulating area compared to the broader area. The Project may contain cut and fill works which could increase the risk of erosion if not managed effectively. However, as erosion risk increases with slope length and steepness and heavily cultivated landscapes where the topsoil is severely degraded or lacking (Queensland Government, 2025a), it is unlikely that the Project site will be impacted heavily by erosion due to the relatively flat landscape. Therefore, the Project site is considered to have a low risk of soil erosion, given that activities with a high risk of erosion including cut and fill works are managed effectively via mitigation measures.

3.5. Flood

The Project site at Kidston is exposed to flood-related hazards primarily driven by its location in the Gilbert River Catchment area (Department of Resources, n.d). The Ethridge Shire area has a documented history of flooding events at varying magnitudes contributing to impacts on agriculture, private property, and public infrastructure (Etheridge Shire Council, 2025). Accordingly, new developments in the region are advised to recognise the potential to flood exposure and incorporate the appropriate flood-risk considerations

(Etheridge Shire Council, 2025). The Project site lies 2.5km west of Copperfield River, approximately 0.75km west of mapped floodplains on Queensland Floodplain Assessment Overlay, and 1.5km east of Charles Creek (Queensland Government, 2025b).

The Queensland Floodplain Assessment Overlay and Queensland Reconstruction Authority flood hazard layers identify an area to the east of the Project site as subject to inundation in 1-in-50 and 1-in-100 year events associated with Einasleigh/Copperfield River (Queensland Government , 2025b) (Figure 3-1). Although the Project site is located outside the mapped floodplain, there is still potential for project infrastructure to be affected by abovementioned flooding events.

Topography further influences flood behaviour, with steeper slopes accelerating runoff and increasing downstream peaks, while flat terrain promotes ponding and wider flood extents. An increase in flooding risk could occur over time due to climate change factors. These factors should be considered during the design phase. The Project site is situated between a mapped floodplain and two tributaries of the Copperfield River (East Creek and Charles Creek), as well as a small stream running through the southern end of the Project site. Consequently, flooding is considered a medium risk (Table 3-1). Appropriate flood-mitigation measures should be incorporated during the design phase to account for flood exposure.

3.6. Bushfire

Kidston, located within the Etheridge Shire in north-west Queensland, is exposed to bushfire risk due to its rural setting and surrounding grasslands and eucalypt woodlands. These vegetation types, combined with prolonged dry seasons typical of northern Queensland, can create conditions conducive to bushfire ignition and spread (Bureau of Meteorology, 2026). Across Queensland, bushfires most commonly occur during the dry season from July to October, when high temperatures, low humidity and dry fuels increase fire danger (Queensland Fire Department, 2025). Due to this, the Etheridge Shire Council adopts proactive mitigation measures, including maintaining firebreaks around townships and encouraging active fire management across rural lands, national parks, and conservation reserves to reduce fuel loads and limit fire spread (Etheridge Shire Council, 2020).

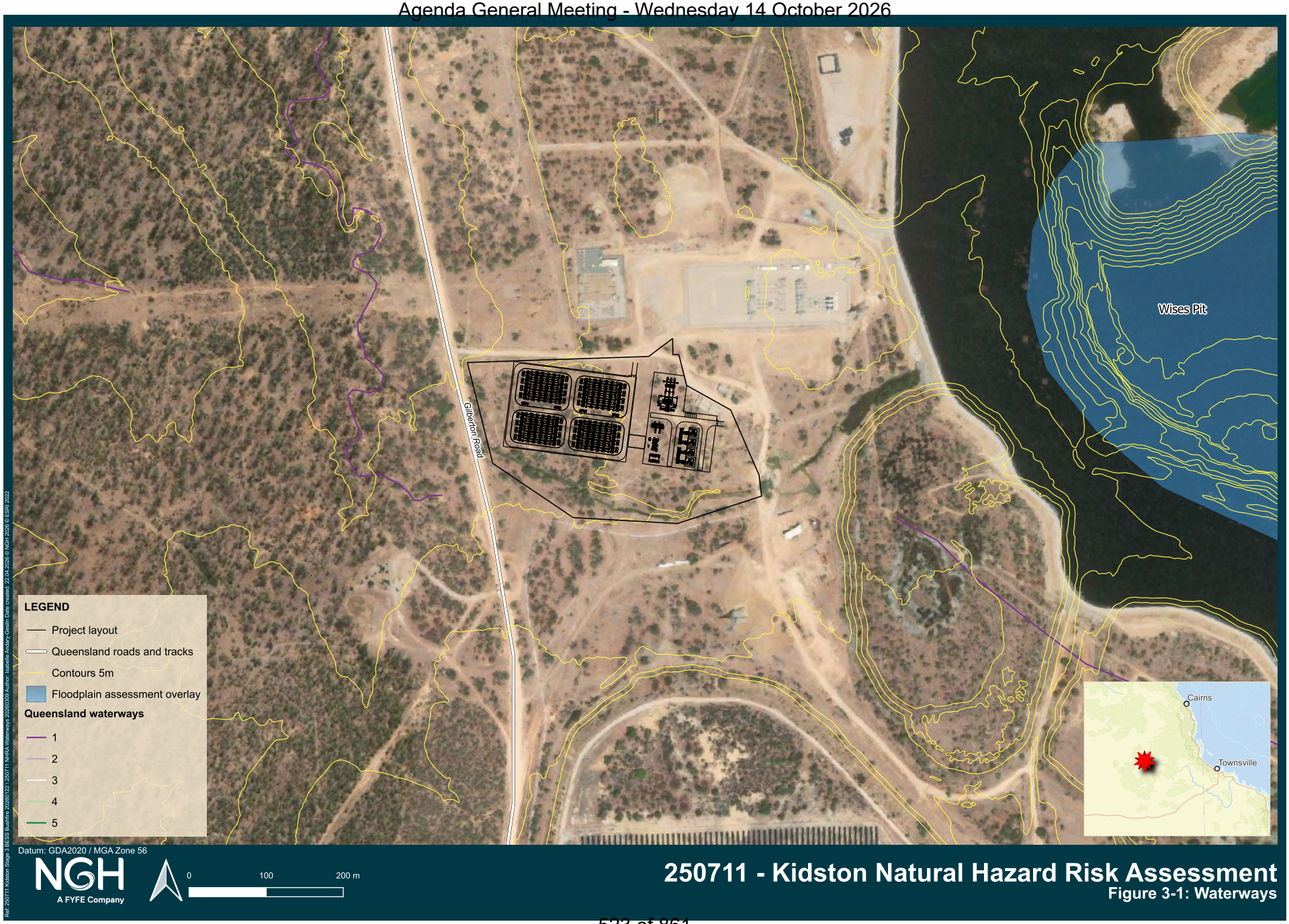
The Project site location is mapped as being within areas of *Potential Impact Buffer* and next to *Medium Potential Bushfire Intensity* (Queensland Fire Department, 2020) (Figure 3-2). This is a result of flammable vegetation and prevailing fire-weather conditions occurring within the Project site. A desktop assessment followed by a site assessment was undertaken to consider areas of the Project site of greatest vulnerability to bushfires. Key bushfire risk factors that are assessed in the Bushfire Management Plan are effective slope and bushfire vegetation hazard. Overall, The Project site is considered to have high bushfire risk (Table 3-1).

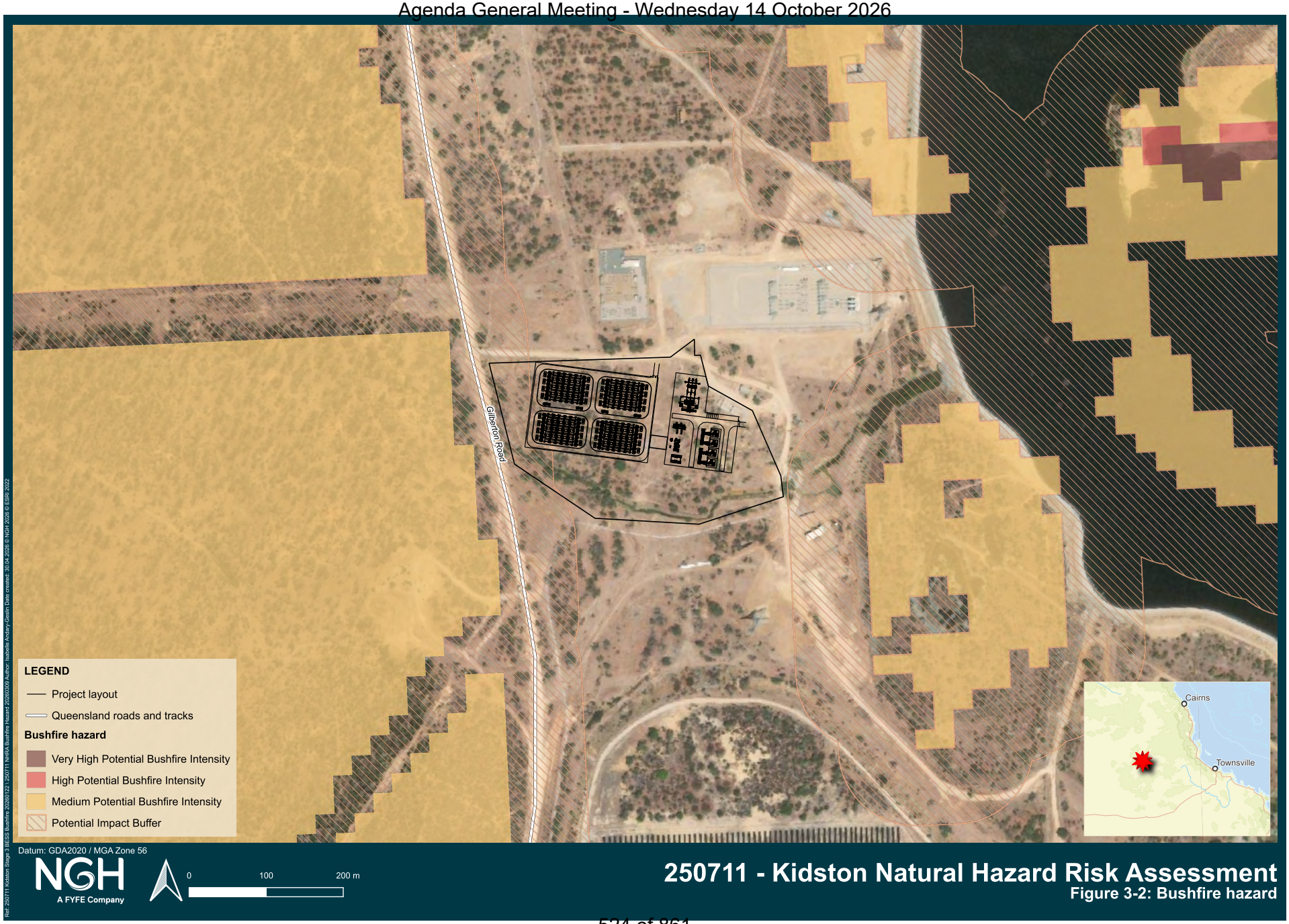
3.7. Risk assessment summary

A risk assessment was undertaken for cyclone, storm, erosion, flood, and bushfire for the Project site. The Likelihood Criteria, Consequence Criteria, and Risk Rating Matrix were assessed against the benchmarks detailed in Appendix A of *Climate Change and Natural Hazards Risk Assessment Guideline* (Department of Transport and Main Roads, 2025), and reproduced in Appendix B of this report. The risk of the aforementioned hazards assessed are specified in Table 3-1 below. Protection measures to assist mitigation of the hazards identified above are detailed in Section 4 of this report.

Table 3-1: Hazard and risk matrix

Hazard	Likelihood	Consequence	Risk
Cyclone	Very unlikely	Minor	Low
Storm	Almost certain	Minor	Medium
Erosion	Moderate	Minor	Low
Flood	Moderate	Moderate	Medium
Bushfire	Likely	Major	High


Wises Pit
Gilberton Road
LEGEND
Project layout
Queensland roads and tracks
Contours 5m
Floodplain assessment overlay
Queensland waterways
1
2
3
4
5
Cairns
Townsville
Datum: GDA2020 / MGA Zone 56
0
100
200 m
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250711 - Kidston Natural Hazard Risk Assessment
Figure 3-1: Waterways
Ref: 250711 Kidston Stage 3 BESS Bushfire 20260122 / 250711 NHRA Waterways 20260309 Author: Isabelle Anstey-Gestin Date created: 22.04.2026 © NGH 2026 © ESRI 2022


Gilberton Road
LEGEND
Project layout
Queensland roads and tracks
Bushfire hazard
Very High Potential Bushfire Intensity
High Potential Bushfire Intensity
Medium Potential Bushfire Intensity
Potential Impact Buffer
Cairns
Townsville
Datum: GDA2020 / MGA Zone 56
NGH
A FYFE Company
0
100
200 m
250711 - Kidston Natural Hazard Risk Assessment
Figure 3-2: Bushfire hazard
Ref: 250711 Kidston Stage 3 BESS Bushfire 20260122 | 250711 NHRA Bushfire Hazard 20260309 Author: Isabelle Ardery-Gesin Date created: 30.04.2026 © NGH 2026 © ESRI 2022

4. Protection measures

4.1. Flood

While the Project site is outside of the Floodplain Assessment Overlay, Copperfield River and Copperfield Dam are subject to recurrent flooding. However, no areas of proposed infrastructure intersect with Copperfield River and Copperfield Dam. Any remaining flood risk will be mitigated during the design phase of the project through appropriate engineering measures. Where practical, natural flow paths should be maintained. The design should ensure that flood behaviour is not adversely affected by the project and off-site impacts are avoided. Road and access infrastructure should be built with flood-resilient designs to maintain emergency access during flood events (Department of Transport and Main Roads, 2025). Following the incorporation of these mitigation measures, residual flood risk is expected to be manageable and is not considered to preclude the proposed development.

4.2. Bushfire

An Asset Protection Zone (APZ) is a managed buffer between bush fire hazards and buildings, designed to reduce fuel loads, radiant heat, flame, smoke, and ember attack. The dimensions and design for APZs in the Bushfire Management Plan are determined in line with *AS 3959:2018 Construction of buildings in bushfire-prone areas* (Standards Australia, 2018) (for BAL-29 separation distance) and are determined by surrounding vegetation type, slope, FFDI, and the type of asset/development. This is to appropriately mitigate the risk of bushfire to the associated people, property, and infrastructure of the Project, built infrastructure by not exposing it to greater than 29 kilowatts per metre squared (kW/m^2) of radiant heat. A cleared and fuel-reduced area is vital in bushfire protection and influences construction requirements necessary to mitigate bushfire impacts. Bushfire mitigation measures in the Bushfire Management Plan also include appropriate Project site access, water supply, and fire protection and suppression equipment as identified in the Bushfire Management Plan.

4.3. State Code 27 assessment

The three relevant POs to this report and the Bushfire Management Plan are assessed in Table 4-1 below.

Table 4-1: State Code 27 assessment

Performance objective	Response
PO13 - Development is located and sited to avoid natural hazard areas including high erosion risk areas and bushfire prone areas.	Complies - The Project is sited to avoid key flooding and erosion areas. The Project is located outside any mapped bushfire risk areas.
PO14 - Where development cannot be located and sited to avoid natural hazard areas (e.g. Bushfire prone areas, and high erosion risk areas),	Complies - The Project is located outside any mapped bushfire or erosion risk areas. Due to identified bushfire risk, the Project site will be subject

Performance objective	Response
demonstrate that: • There is no suitable alternative location • Infrastructure can function effectively during and after a natural hazard event • Mitigation measures are implemented to reduce the risk to people, property and the environment to a tolerable level.	to bushfire mitigation measures to reduce the risk to people, property, and the environment to a tolerable level.
PO15 - Bushfire hazard is identified and risk is mitigated through strategies for vegetation management, landscape management, water supply, provision of appropriate access, identification of safe assembly or evacuation routes and establishing cleared and maintained APZs around infrastructure that is wholly contained on site.	Complies – The Project site will be subject to vegetation management, landscape management, water supply, provision of appropriate access, identification of safe assembly or evacuation routes and establishing cleared and maintained APZs around infrastructure that is wholly contained on site as detailed in the Bushfire Management Plan.

5. Recommendations and conclusion

5.1. Recommendations

The following recommendations detailed in *Climate Change and Natural Hazards Risk Assessment Guideline* (Department of Transport and Main Roads, 2025) and *Design Guidelines and Model Requirements: Renewable Energy Facilities V4* (CFA, 2023) could be implemented to further mitigate against natural hazard risk, dependent on findings of the Stormwater Management Plan and Safety and Emergency Plan, and Bushfire Management Plan:

- Design infrastructure to account for higher temperatures (e.g., increased heat ratings of surfaces/equipment, minimum standards for wire sag as per *AS/NZS 7000:2016 Overhead Line Design Standard* (Standards Australia and Standards New Zealand, 2016)
- Incorporate weather projections and procedures (e.g. Wet Weather Plan and Bushfire Weather Plan) into works scheduling
- Appropriate monitoring for facility infrastructure must be provided, so that any shorts, faults, or equipment failures with the potential to ignite or propagate fire are rapidly identified and controlled
- Inspection, maintenance, and any required repair activities must be conducted for all infrastructure, equipment, and vehicles at the facility. Maintenance must be in line with any relevant Australian Standards and the manufacturer's requirements.
- APZs are to be created and maintained in accordance with the Bushfire Management Plan
- Easement widths are established and maintained, with typical widths reproduced in Section 5.2 as sourced from Appendix CC – Table CC1 of AS/NZS 7000:2016.
- Access and egress routes, water supply, and fire detection and suppression equipment are to occur in accordance with the Bushfire Management Plan
- Buildings should be maintained in accordance with *Bushfire Resilient Building Guidance for Queensland Homes* (Queensland Reconstruction Authority, 2020)
- An Emergency Plan must be developed for the construction, commissioning, operational, and decommissioning phases of the facility.
- A Stormwater Management Plan, Safety and Emergency Plan, and Bushfire Management Plan are recommended for the Project.
- A Flood Management Plan will be required to assess and determine a defined flood level for the development site based on a 1% Annual Exceedance Probability flood event as required by Etheridge Shire Council.
- An Emergency Information Book must be developed and available to emergency responders. Emergency Information Books must be located in Emergency Information Containers, provided at each vehicle entrance to the facility.

5.2. Conclusion

This Natural Hazard Risk Assessment report has considered extreme weather event risks to the Project site and proposed Kidston BESS. Cyclone risk is considered low, storm and flood risk are considered medium, and bushfire risk is considered high. With the appropriate development of detailed plans and mitigation

measures, the Project could be capable of meeting the requirements of all relevant legislation, codes and guidelines.

6. References

Bureau of Meteorology. (2022). *Tropical Cyclone Archive – Event Summary: 10 October 2022.* Accessible from: https://www.bom.gov.au/climate/cyclones/australia/archive/20221010.archive.shtml.

Bureau of Meteorology. (2026). *Fire weather seasons.* Australian Government. Accessible from: https://www.bom.gov.au/resources/learn-and-explore/fire-weather-knowledge-centre/fire-weather-seasons.

Bureau of Meteorology. (n.d.). *Australian Severe Storms Archive.* Accessible from: https://www.bom.gov.au/australia/stormarchive/.

Department of Environment, Science and Innovation. (2026d). *Coastal Hazards Mapping Request Portal.* Accessible from: https://apps.des.qld.gov.au/map-request/coastal-hazards/.

CFA. (2023). *Design Guidelines and Model Requirements: Renewable Energy Facilities V4*. Country Fire Authority. Victoria.

Department of Environment and Resource Management. (2011). *Queensland Coastal Processes and Climate Change.* Accessible from: https://data.longpaddock.qld.gov.au/static/about/publications/pdf/qld-coastal-processes-and-climate-change.pdf.

Department of Environment, Science and Innovation. (2025a). *State of the Environment: Climate Observations.* Accessible from: https://www.stateoftheenvironment.detsi.qld.gov.au/climate/climate-observations.

Department of Environment, Science and Innovation. (2025c). *State of the Environment: Severe Weather Events – Flooding and Cyclones.* Accessible from: https://www.stateoftheenvironment.detsi.qld.gov.au/climate/climate-observations/severe-weather-events-flooding-and-cyclones.

Department of Resources. (n.d.). *Queensland Globe.* Accessible from: https://qldglobe.information.qld.gov.au/.

Department of Transport and Main Roads. (2025). *Climate Change and Natural Hazards Risk Assessment Guideline*. Queensland Government.

Etheridge Shire Council. (2020). *Etheridge Shire Planning Scheme – Adopted Version 11*. Accessible from: adopted-version-11-etheridge-shire-planning-scheme.pdf.

Etheridge Shire Council. (2025). *Etheridge Shire Planning Scheme – Adopted Version 11.* Accessible from: https://www.etheridge.qld.gov.au/files/assets/public/v/1/development/documents/adopted-version-11-etheridge-shire-planning-scheme.pdf.

Etheridge Shire Council. (2026). *Etheridge Shire Disaster Dashboard.* Accessible from: https://dashboard.etheridge.qld.gov.au/.

Queensland Fire Department. (2020). *Bushfire prone area - Queensland series*. Accessible from: https://www.data.qld.gov.au/dataset/bushfire-prone-area-queensland-series.

Queensland Fire Department. (2025). *Know your risks.* Accessible from: https://www.fire.qld.gov.au/prepare/bushfire/know-your-risks.

Queensland Government. (2025). *State code 27: Battery storage facility development (State Development Assessment Provisions v3.5).* Accessible from: https://www.planning.qld.gov.au/__data/assets/pdf_file/0020/110594/sdap-v3.5-state-code-27-battery-storage-facility-development.pdf.

Etheridge Shire Council. (2021). *Etheridge Local Disaster Management Plan (Final Version).* Accessible from: https://www.etheridge.qld.gov.au/files/assets/public/v/1/services/documents/agenda_etheridge_local_disaster_managment_plan_version_final_.pdf.

Queensland Government. (2025a). *Types of Soil Erosion.* Accessible from: https://www.qld.gov.au/environment/land/management/soil/degradation/erosion/types.

Queensland Government. (2025b). *Impacts of Soil Erosion.* Accessible from: https://www.qld.gov.au/environment/land/management/soil/degradation/erosion/impacts.

Queensland Government. (2025b). *Queensland Floodplain Assessment Overlay (QFAO).* Accessible from: https://www.data.qld.gov.au/dataset/queensland-floodplain-assessment-overlay.

Queensland Government. (n.d.). *Wind Erosion – Causes, Impacts and Management.* Accessible from: https://www.qld.gov.au/__data/assets/pdf_file/0021/65217/wind-erosion.pdf.

Queensland Reconstruction Authority. (2020). *Bushfire Resilient Building Guidance for Queensland Homes* (Version 1.0). State of Queensland. Accessible from: 0576_qra_bushfire_guideline_v10_pages_print.pdf.

Queensland Reconstruction Authority. (n.d.). *Reconstruction Monitoring – Previous Operations.* Accessible from: https://www.qra.qld.gov.au/reconstruction-monitoring/previous-operations.

Standards Australia and Standards New Zealand (AS/NZS). (2016). *AS/NZS 7000:2016 Overhead Line Design Standard.*

Standards Australia. (2018). *AS 3959:2018 Construction of buildings in bushfire-prone areas*.

Standards Australia. (2019). *AS 4282:2019 Control of the obtrusive effects of outdoor lighting*.

Appendix A - Natural hazards, risk and resilience assessment benchmarks

Assessment Benchmark		Compliance
Erosion prone areas within a coastal management district:	1) Development does not occur in an erosion prone area within a coastal management district unless the development cannot feasibly be located elsewhere and is: (a) coastal-dependent development; or (b) temporary, readily relocatable or able to be abandoned development; or (c) essential community infrastructure; or (d) minor redevelopment of an existing permanent building or structure that cannot be relocated or abandoned.	N/A (the Project site does not occur in an erosion prone area within a coastal management district).
	(2) Development permitted in (1) above, mitigates the risks to people and property to an acceptable or tolerable level.	N/A (the Project site does not occur in an erosion prone area within a coastal management district).
Bushfire, flood, landslide, storm tide inundation, and erosion prone areas outside the coastal management district:	(3) Development other than that assessed against (1) above, avoids natural hazard areas, or where it is not possible to avoid the natural hazard area, development mitigates the risks to people and property to an acceptable or tolerable level.	Will comply (Section 3 and Section 4).
All natural hazard areas:	(4) Development supports and does not hinder disaster	Will comply (Section 5.1).

Assessment Benchmark		Compliance
	management response or recovery capacity and capabilities.	
	(5) Development directly, indirectly and cumulatively avoids an increase in the severity of the natural hazard and the potential for damage on the site or to other properties.	Will comply (Section 4).
	(6) Risks to public safety and the environment from the location of hazardous materials and the release of these materials as a result of a natural hazard are avoided.	Will comply.
	(7) The natural processes and the protective function of landforms and the vegetation that can mitigate risks associated with the natural hazard are maintained or enhanced.	Will comply.

Appendix B - Reproduced Likelihood and Consequence Tables

Source: Appendix A of Climate Change and Natural Hazards Risk Assessment Guideline (Department of Transport and Main Roads, 2025)

Table A1 – Likelihood Criteria (Source: AS 5334:2013 Climate change adaptation for settlements and infrastructure)

Likelihood	Description	Recurrent or Event Risks	Long Term Risks
Almost Certain	Could occur several times per year	Has happened several times in the past year and in each of the previous 5 years or Could occur several times per year	Has a greater than 90% chance of occurring in the identified time period if the risk is not mitigated
Likely	May arise about once per year	Has happened at least once in the past year and in each of the previous 5 years or May arise about once per year	Has a 60 – 90% chance of occurring in the identified time period if the risk is not mitigated
Moderate	Maybe a couple of times in a generation	Has happened during the past 5 years but not in every year or May arise once in 25 years	Has a 40 – 60% chance of occurring in the identified time period if the risk is not mitigated
Unlikely	Maybe once in a generation	May have occurred once in the last 5 years or May arise once in 25 to 50 years	Has a 10 – 30% chance of occurring in the future if the risk is not mitigated
Very Unlikely (Rare)	Maybe once in a lifetime	Has not occurred in the past 5 years or Unlikely during the next 50 years	May occur in exceptional circumstances, i.e., less than 10% chance of occurring in the identified time period if the risk is not mitigated

Table A2 – Consequence Criteria (Source: AS 5334:2013 Climate change adaptation for settlements and infrastructure)

Consequence	Adaptive Capacity	Infrastructure, Service	Social / Cultural	Governance	Financial	Environmental	Economy
Insignificant	No change.	No infrastructure damage, no change to service.	No adverse human health effects.	No changes to management required.	Little financial loss or increase in operating expenses.	No adverse effects on natural environment.	No effects on the broader economy.
Minor	Minor decrease to the adaptive capacity of the asset. Capacity easily restored.	Localised infrastructure service disruption. No permanent damage. Some minor restoration work required. Early renewal of infrastructure by 10-20%. Need for new/modified ancillary equipment.	Short-term disruption to employees, customers or neighbours. Slight adverse human health effects or general amenity issues.	General concern raised by regulators, requiring response action.	Additional operational costs Financial loss small, <10%.	Minimal effects on the natural environment.	Minor effect on the broader economy due to disruption of service provided by the asset.
Moderate	Some change in adaptive capacity. Renewal or repair may need new design to improve adaptive capacity.	Limited infrastructure damage and loss of service. Damage recoverable by maintenance and minor repair. Early renewal of infrastructure by 20-50%.	Frequent disruptions to employees, customers or neighbours. Adverse human health effects.	Investigation by regulators Changes to management actions required.	Moderate financial loss 10-50%.	Some damage to the environment, including local ecosystems. Some remedial action may be required.	High impact on the local economy, with some effect on the wider economy.

Natural Hazard Risk Assessment

Kidston Stage 3 BESS

Consequence	Adaptive Capacity	Infrastructure, Service	Social / Cultural	Governance	Financial	Environmental	Economy
Major	Major loss in adaptive capacity. Renewal or repair would need new design to improve adaptive capacity.	Extensive infrastructure damage requiring major repair. Major loss of infrastructure service. Early renewal of infrastructure by 50-90%.	Permanent physical injuries and fatalities may occur. Severe disruptions to employees, customers or neighbours.	Notices issued by regulators for corrective actions. Changes required in management. Senior management. Responsibility questionable.	Major financial loss 50-90%.	Significant effect on the environment and local ecosystems. Remedial action likely to be required.	Serious effect on the local economy spreading to the wider economy.
Catastrophic	Capacity destroyed, redesign required when repairing or renewing asset.	Significant permanent damage and/or complete loss of the infrastructure and the infrastructure service. Loss of infrastructure support and translocation of service to other sites. Early renewal of infrastructure by 90%.	Severe adverse human health effects, leading to multiple events of total disability or fatalities. Total disruption to employees, customers or neighbours. Emergency response at a major level.	Major policy shifts. Change to legislative requirements.	Extreme financial loss >90%.	Very significant loss to the environment. May include localised loss of species, habitats or ecosystems. Extensive remedial action essential to prevent further degradation. Restoration likely to be required.	Major effect on the local, regional and state economies.

Table A3 – Risk Rating Matrix (Source: AS 5334:2013 Climate change adaptation for settlements and infrastructure)

Likelihood	Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain	Low	Medium	High	Extreme	Extreme
Likely	Low	Medium	Medium	High	Extreme
Moderate	Low	Low	Medium	High	Extreme
Unlikely	Low	Low	Medium	Medium	High
Very Unlikely (Rare)	Low	Low	Low	Medium	Medium

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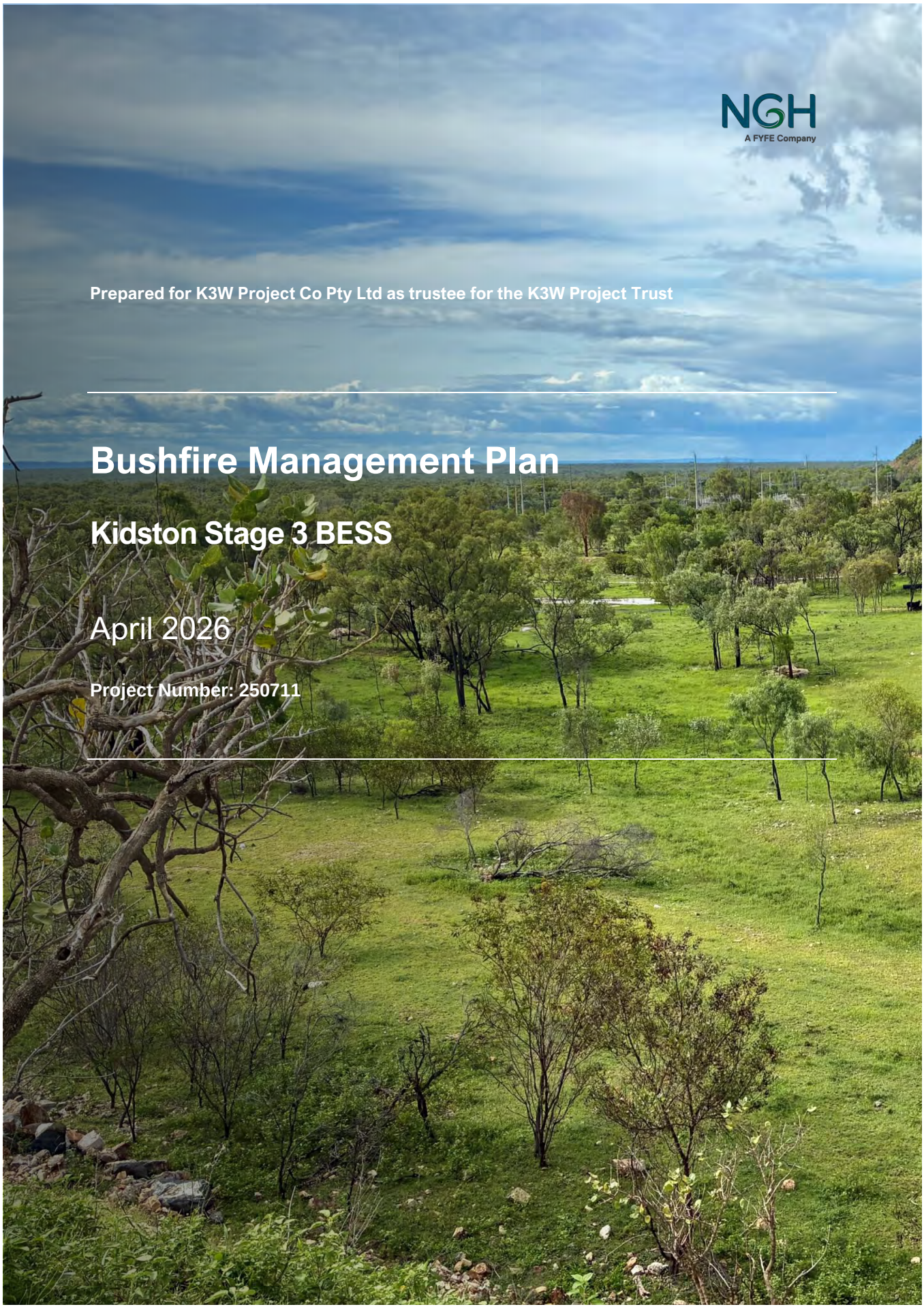
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Bushfire Management Plan

Kidston Stage 3 BESS

April 2026

Project Number: 250711

Document verification

Project Title:	Kidston Stage 3 BESS
Project Number:	250711
Project File Name:	250711 - Kidston Bushfire Management Plan - Final V1

Revision	Date	Prepared by	Reviewed and approved by
Draft V1	13/03/2026	Isabelle Andary-Geslin	Dominic Adshead Amylee Quirk
Draft V2	17/04/2026	Isabelle Andary-Geslin	Dominic Adshead
Final V1	30/04/2026	Isabelle Andary-Geslin	Dominic Adshead

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Acronyms and abbreviations

Term	Description
APZ	Asset Protection Zone
AS	Australian Standard
AS 2304:2019	Australian Standard 2304:2019 *Water storage tanks for fire protection systems*
AS 3959:2018	Australian Standard 3959:2018 *Construction of buildings in bush fire-prone areas*
BAL	Bushfire Attack Level
BAL-FZ	BAL-Flame Zone
BCA	*Building Code of Australia*
BESS	Battery Energy Storage System
EMS	Energy Management System
FFDI	Forest Fire Danger Index
K	Kelvin
km	Kilometre
kV	Kilovolt
kW/m^2	Kilowatts per metre squared
L	Litre
LGA	Local Government Area
m	Metres
MCU	Material Change of Use
mm	Millimetre
MW	Megawatt
MWh	Megawatt hour
NASH	*National Association of Steel Framed Housing* (2014)

Term	Description
NCC	*National Construction Code*
PO	Performance Outcome
RaL	Reconfiguring a Lot
RE	Regional Ecosystem
RMU	Ring Main Unit
SARA	State Assessment and Referral Agency

1. Introduction

1.1. Purpose of the report

This Bushfire Management Plan has been prepared on behalf of Genex Power Proprietary Limited (Genex, or the Applicant), who is seeking a development approval from the State Assessment and Referral Agency (SARA), as the assessment manager under the *Planning Act 2016* (Queensland), for a Material Change of Use (MCU) for a Battery Energy Storage System (BESS) (the Project). A separate Reconfiguring a Lot (RaL) (one lot into two and easement) approval is also required to assist in facilitating the BESS construction and operation, for which the assessment manager is Etheridge Shire Council.

The aim of this Bushfire Management Plan is to determine the level of bushfire risk to the Project and identify the protection measures required. This report is prepared in accordance with the legislative and policy requirements detailed in Section 2.

1.2. Methodology

This Bushfire Management Plan consists of the following stages:

- A desktop assessment of proposed infrastructure in relation to potential bushfire risk factors present including vegetation, slope, and access
- A site assessment to confirm bushfire risk factors present
- Assessing compliance against legislative and policy requirements detailed in Section 2.

In relation to this assessment, please note the field work to assess potential fire risks and impacts was based on best available information at the time of the site visit and the designs provided by the client. It should be noted that the measures contained in this document cannot guarantee that a building or asset will survive a fire event on every occasion. This is substantially due to the unpredictable nature and behaviour of fire, a reliance on ongoing and timely inspections, monitoring and maintenance of assets to be completed, ongoing implementation of mitigation measures, and extreme weather conditions.

1.3. Overview of the proposed Project

The Project consists of a standalone Grid Forming BESS of up to approximately 250 Megawatt (MW) / 1,250 Megawatt Hour (MWh), near the town of Kidston, near Einasleigh, Far North Queensland. It is proposed to be constructed in the northern section of the Kidston Solar Farm lot, directly adjacent to the Aurumfield Substation (refer Figure 1-1) and will connect from a private project substation into the Aurumfield Substation at 275 kilovolts (kV). The Project is part of the Kidston Clean Energy Hub which currently comprises the 50 MW Kidston Solar Project, operating since 2017, and the 250MW / 2,000MWh Kidston Pumped Storage Hydro Project (K2-Hydro), currently under construction. The infrastructure included in the Project is detailed in Table 1-1. All infrastructure will be located within the Project Footprint.

Table 1-1: Project infrastructure

Infrastructure	Description
Battery units	Containerised units will encompass battery components, with each unit in the same size and dimension of a 20-foot shipping container. These will be manufactured off-site and delivered to the Project Footprint for installation. Up to 200 containerised units will be installed, with dimensions up to 4.97 metres (m) x 8.55m x 2.66m (H x L x W) each.
Power station (including conversion system or inverter, transformer and ring main unit)	Power conversion systems (inverters and transformers) will convert stored energy (direct current) to network electricity (alternating current). The containerised units will encompass the system components. The Project would include up to 80 inverters and 40 step-up transformers, with are 5 battery skids shared between 2 inverters, all of which are connected into a MV skid that contains one step up transformer and one Ring Main Unit (RMU).
Controller	The BESS will have a supervisory control and data acquisition system and a battery management system. These systems will enable real-time monitoring, fault detection, remote diagnostics, and control of battery operations, ensuring safe and efficient performance.
Heating, cooling and ventilation	Battery Units: Each battery unit will feature an integrated thermal management system, typically utilising liquid cooling and/or heating to maintain optimal operating temperatures. Air cooling may be used for some auxiliary electrical components. Humidity control systems will also be integrated to protect against condensation and moisture ingress. Inverters: Inverters will use a dual air-cooling system - one circuit brings in outside air and vents it out, while the other recirculates air within a sealed section to protect sensitive equipment.
Energy management system (EMS)	A power plant controller integrated with an EMS will coordinate the operation of the BESS for compliance with grid requirements. The EMS will optimise charge/discharge cycles, monitor performance, and enable integration with other energy resources to support network stability.
Cabling	Underground electrical cabling and fibre optic cabling will connect the battery units to the power stations, and site office/distribution centre (monitoring and control equipment). It will be designed in accordance with Australian and International Standards, as well as manufacturer's specifications. The BESS will connect to the Aurumfield Substation via overhead

Infrastructure	Description
	transmission line (to be determined).
Substation	The BESS will be connected to an onsite Project substation, and subsequently to Powerlink's existing Aurumfield Substation.
Lighting	Security lighting will be included within the development. All lighting will be directed into the Development Footprint and comply with *Australian Standard (AS) 4282:2019 Control of the obtrusive effects of outdoor lighting* (Standards Australia, 2019b), to minimise impacts on sensitive receivers.
Site facilities	Site facilities will be established to accommodate monitoring and control equipment, operation and maintenance amenities, carpark, communications equipment, storage facilities and supplies as needed.

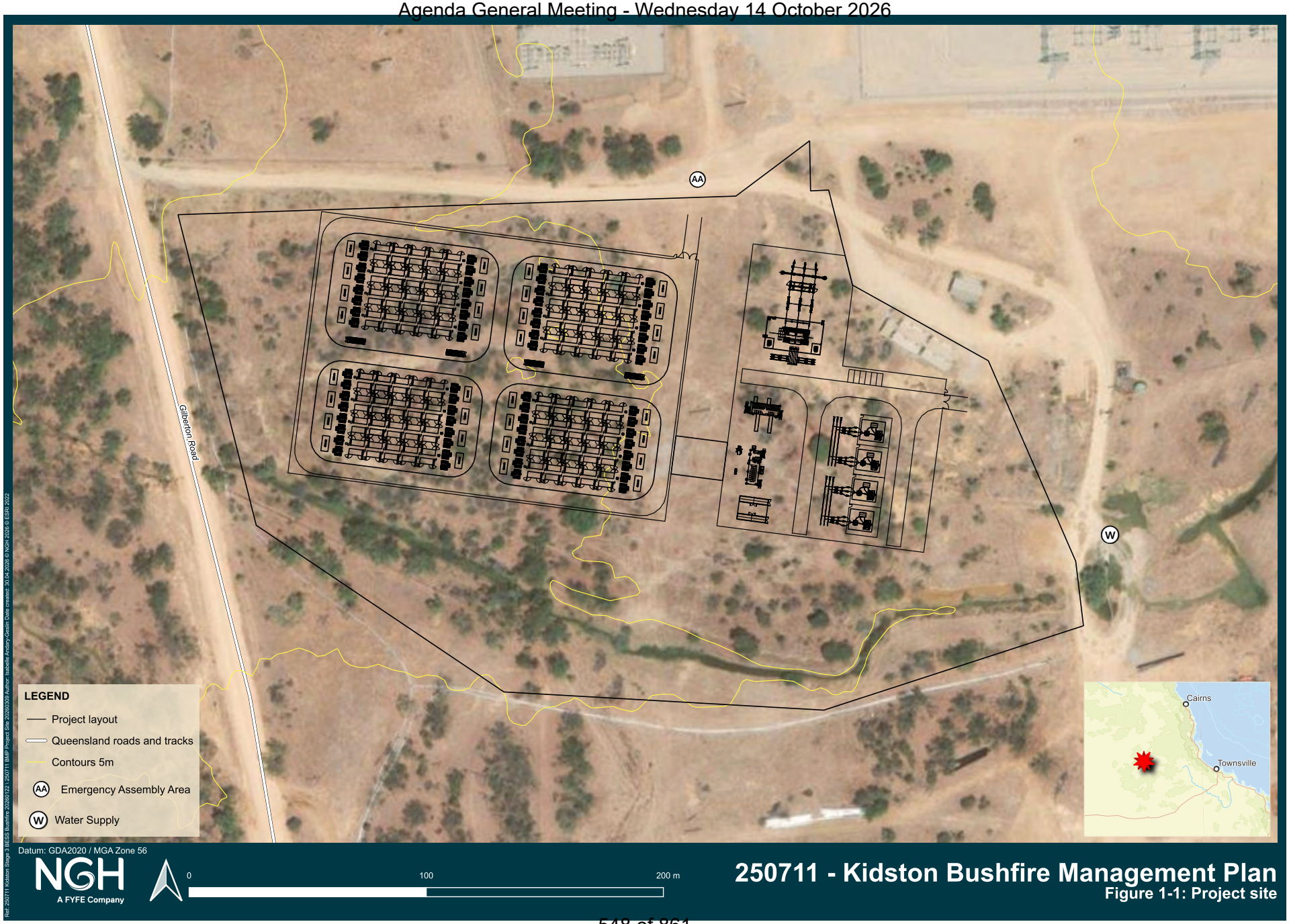
1.4. Site location and context

The Kidston BESS is located within the Etheridge Shire Local Government Area (LGA), approximately 280 kilometres (km) west of Townsville and 40km north-west of Lyndhurst, in north-western Queensland.

The development site occupies the northern section of Lot 12 on Plan SP345756, within the broader Kidston Clean Energy Hub on the historic Kidston Gold Mine site. The area has been extensively disturbed by former mining and renewable energy construction activities and contains established infrastructure, including access roads, cleared benches and the existing Aurumfield Substation.

The Project area is situated within the Einasleigh Uplands Bioregion, characterised by open woodland vegetation, gently undulating terrain and low regional population density. The location was selected to optimise use of existing cleared industrial land, minimise environmental and social impacts, and leverage existing transmission and road infrastructure associated with the Hub.

The BESS site is accessed from Gilberton Road via the existing mine access road and will operate adjacent to other renewable energy facilities including the Kidston Solar Farm and K2-Hydro.


Gilberton Road
AA
W
LEGEND
Project layout
Queensland roads and tracks
Contours 5m
Emergency Assembly Area
Water Supply
Cairns
Townsville
Datum: GDA2020 / MGA Zone 56
NGH
A FYFE Company
0
100
200 m
250711 - Kidston Bushfire Management Plan
Figure 1-1: Project site
Ref: 250711 Kidston Stage 3 BESS Bushfire 20260122 \ 250711 BMP Project Site 20260309 Author: Isabelle Anstey-Gestin Date created: 30.04.2026 © NGH 2026 © ESRI 2022

2. Legislative and Policy Framework and relevant guidelines

2.1. Queensland Planning Act 2016

This application is made under the Queensland Planning Act 2016 and seeks a Development Approval for a MCU for the BESS. SARA are the assessment manager for the MCU application. A separate RaL approval is also required to facilitate the Project, for which Etheridge Shire Council is the assessment manager. This Bushfire Management Plan supports the impact assessment process by identifying and addressing bushfire risks relevant to the Project.

2.2. State Code 27: Battery storage facility development

This Bushfire Management Plan is required for Kidston BESS to contribute to satisfying the Performance Outcomes (PO) 13, 14, and 15 of State Code 27 (Queensland Government, 2025) (assessment provided in the Natural Hazard Risk Assessment). Specifically:

- *PO13 - Development is located and sited to avoid natural hazard areas including high erosion risk areas and bushfire prone areas.*
- *PO14 - Where development cannot be located and sited to avoid natural hazard areas (e.g. Bushfire prone areas, and high erosion risk areas), demonstrate that:*
    - *There is no suitable alternative location*
    - *Infrastructure can function effectively during and after a natural hazard event*
    - *Mitigation measures are implemented to reduce the risk to people, property and the environment to a tolerable level.*
- *PO15 - Bushfire hazard is identified and risk is mitigated through strategies for vegetation management, landscape management, water supply, provision of appropriate access, identification of safe assembly or evacuation routes and establishing cleared and maintained asset protection zones around infrastructure that is wholly contained on site.*

2.3. State Planning Policy 2017

The State Planning Policy identifies natural hazards, risk and resilience as a state interest. This Bushfire Management Plan demonstrates consistency with the State Planning Policy by identifying relevant bushfire hazards and recommending appropriate risk mitigation measures to be incorporated. Relevant assessment benchmarks set by the Etheridge Shire Council are addressed in Appendix A.

2.4. National Construction Code 2022

The *National Construction Code* (NCC) (ABCB, 2022) contains all requirements for construction comprising the *Building Code of Australia* (BCA) as *Volumes 1 and 2, and the Plumbing Code of Australia as Volume 3*. The NCC (ABCB, 2022) is Australia's primary set of technical design and construction provisions for

buildings, and sets the minimum required level for the safety, health, amenity, accessibility and sustainability of certain buildings (ABCB, 2022) including consideration of buildings in bushfire prone areas.

2.4.1. AS 3959:2018 Construction of buildings in bushfire-prone areas

For buildings in bushfire prone areas, the NCC refers to *AS 3959:2018 Construction of buildings in bushfire-prone areas* (AS 3959:2018) (Standards Australia, 2018). AS 3959:2018 focuses on the ability of buildings in designated bushfire prone areas to better withstand attack from bushfire, thus giving a measure of protection to the building occupants as well as to the building itself (Standards Australia, 2018).

2.5. Guidelines

Where legislative and policy frameworks and relevant guidelines do not include guidance material of necessary protection or assessment measures, relevant alternatives have been selected. These include:

- Country Fire Authority *Design Guidelines and Model Requirements: Renewable Energy Facilities V4* (CFA, 2023)
- New South Wales Rural Fire Service *Planning for Bush Fire Protection* (NSW RFS, 2019)
- Queensland Government *Climate Change and Natural Hazards Risk Assessment Guideline* (Department of Transport and Main Roads, 2025).

3. Bushfire risk assessment

3.1. Desktop and site assessment

A desktop assessment was completed to confirm bushfire risk factors, which was then confirmed by a site assessment undertaken by experienced NGH bushfire consultants on 3 February 2026. This site visit was to assess and ground truth effective slope and bushfire vegetation hazard identified by the desktop assessment within 150m of the Project site. The perimeter of the Project site was traversed by foot, whereby the NGH bushfire consultants assessed the slope of the land under any vegetation (refer to Section 3.6), and qualified the vegetation (refer to Section 3.5).

3.2. Fire intensity mapping

The Project site location is mapped as being within areas of *Potential Impact Buffer* and next to *Medium Potential Bushfire Intensity* (Queensland Fire Department, 2020) (Figure 3-1).

3.3. Forest Fire Danger Index

The Forest Fire Danger Index (FFDI) is a measure of fire danger in areas of native vegetation. This is based on vegetation dryness, air temperature, wind speed and humidity, and considers the chance of starting a fire, and potential spread, intensity, and difficulty of suppression. The FFDI can range from 50 in some Alpine areas, to 100 in forested areas where the higher FFDI indicates a higher degree of fire danger in the area (NSW RFS, 2019). The FFDI within the Project site is 61 (State of Queensland, 2026.). The FFDI is considered in developing mitigation measures including the width of Asset Protection Zones (APZ) and the corresponding construction requirements under AS 3959:2018.

3.4. Bushfire history

Fire scar mapping (Queensland Government, 2026) indicates that there have been no fires within the Project site since 1987. However, this mapping is inaccurate for the area surrounding the Project site which is prone to almost annual bushfires.

3.5. Vegetation hazard

Vegetation is an important characteristic that influences fire behaviour and can elevate fire risk. Attributes of vegetation fuel vary across vegetation groups (type, amount, arrangement, moisture content), and these attributes affect bushfire characteristics, including ignition, spread, and intensity. Forest and woodland vegetation communities can support the highest intensity bushfires, with shrublands and heathlands supporting medium intensity fires, and grasslands supporting relatively lower intensity but fast-moving grassfires. According to *Bushfire Resilient Communities* (Queensland Fire and Emergency Services, 2019), vegetation must be assessed within 150m of the Project site's boundary.

Vegetation within the Project site consists of forest and woodland. This vegetation is mostly comprised of non-remnant vegetation, with small patches characteristic of Regional Ecosystem (RE) 9.11.15a (woodland to

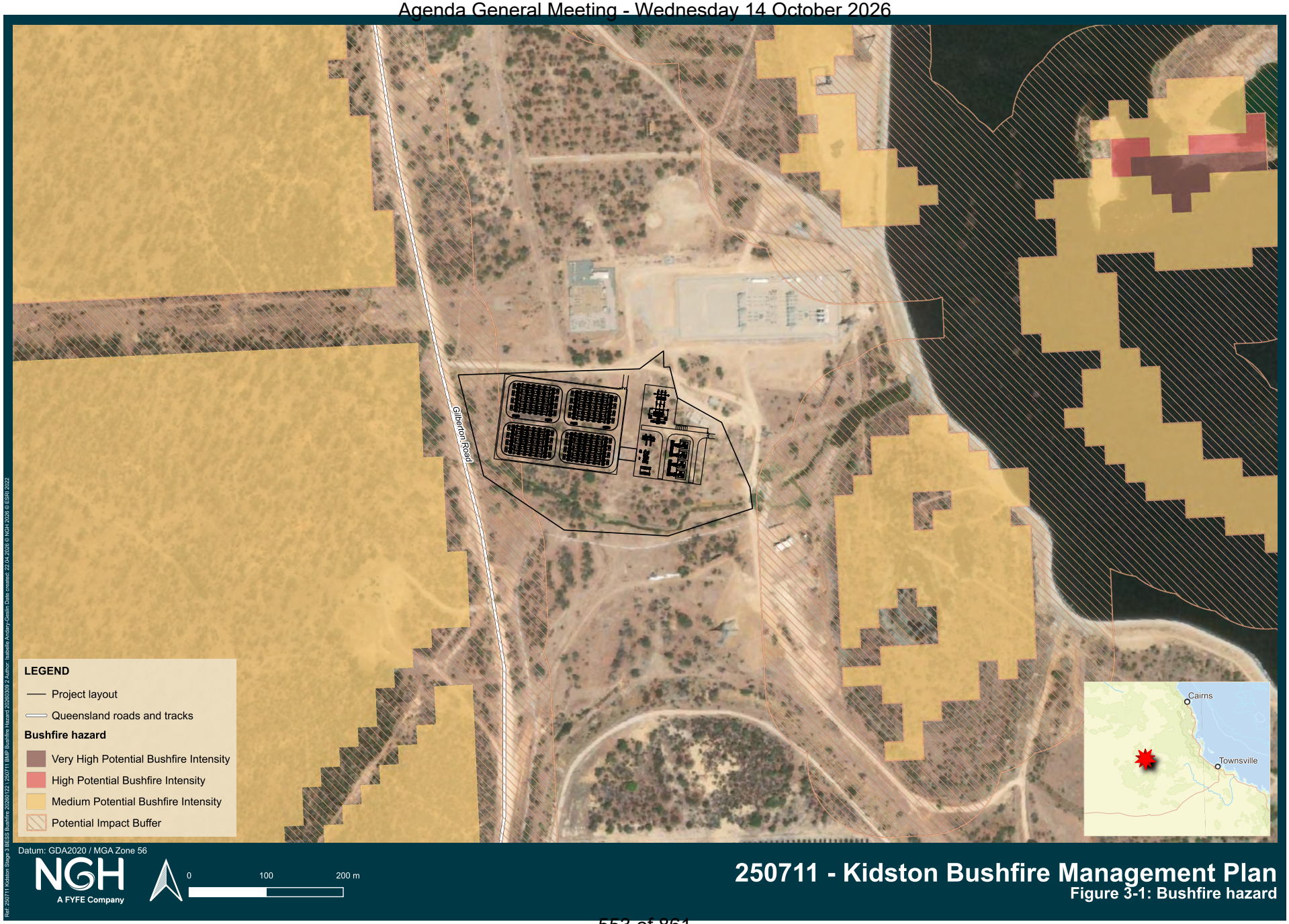
low open woodland of *Eucalyptus crebra*) in the southern portion of the Project site. All vegetation and slope data collected during the site assessment is presented in Table 4-1.

3.6. Slope

Slope and topography are key factors influencing bushfire behaviour, with fires tending to move more rapidly and with greater intensity uphill compared to flat or downhill terrain. The effective slope refers specifically to the gradient of the land beneath vegetation hazards and is considered in areas where the slope is less than 20°. Effective slope informs APZ requirements and Bushfire Attack Level (BAL) construction standards. An APZ is a bushfire protection measure, providing a buffer around assets, established from the earliest stages of construction, and maintained in perpetuity. According to *Bushfire Resilient Communities* (Queensland Fire and Emergency Services, 2019), effective slope must be assessed within 150m of the site's boundary, and categorised into one or more of the following classes:

- All upslope and flat land (considered 0°)
- Downslope 0° to 5°
- Downslope 5° to 10°
- Downslope 10° to 15°
- Downslope 15° to 20°.

Vegetation within the Project site includes forest and woodland. Slope within the Project site ranges from all upslope and flat land to Downslope 0° to 5°. All vegetation and slope data collected during the site assessment is presented in Table 4-1.


Gilberton Road
LEGEND
Project layout
Queensland roads and tracks
Bushfire hazard
Very High Potential Bushfire Intensity
High Potential Bushfire Intensity
Medium Potential Bushfire Intensity
Potential Impact Buffer
Cairns
Townsville
Datum: GDA2020 / MGA Zone 56
NGH
A FYFE Company
0
100
200 m
250711 - Kidston Bushfire Management Plan
Figure 3-1: Bushfire hazard
Ref: 250711 Kidston Stage 3 BESS Bushfire 20260122 / 250711 BMP Bushfire Hazard 20260009 2 Author: Isabelle Anstey-Geslin Date created: 22.04.2026 © NGH 2026 © ESRI 2022

4. Bushfire protection measures

4.1. Construction requirements

The NCC (ABCB, 2022) contains all requirements for construction comprising the BCA as Volumes 1 and 2, and the Plumbing Code of Australia as Volume 3. The Building Act 1975 mandates that building work must comply with the BCA.

The Operation and Maintenance amenity building is identified as a Class 8 building under the NCC. Buildings identified as Class 5 to Class 8 under the NCC, as well as BESS units are not directly covered by the NCC, however, they are considered in the context of an overall development. For bushfire protection, all buildings in Bush Fire Prone Land areas are to comply with AS 3959:2018 and the National Association of Steel-framed Housing (NASH) (NASH, 2014).

Where otherwise applicable, assets should be constructed to withstand at least 29 kilowatts per metre squared (kW/m^2) calculated at 1090 Kelvin (K), corresponding to a BAL-29 or less separation distance. Project approval conditions generally do not permit construction in BAL-40 or BAL-Flame Zone (FZ).

4.2. Asset Protection Zone

An APZ is a managed buffer between bush fire hazards and buildings, designed to reduce fuel loads, radiant heat, flame, smoke, and ember attack. The dimensions and design for APZs are determined in line with AS 3959:2018 and are determined by surrounding vegetation type, slope, FFDI, and the type of asset/development. A cleared and fuel-reduced area is vital in bushfire protection and influences construction requirements necessary to mitigate bushfire impacts. To appropriately mitigate the risk of bushfire to the associated people, property, and infrastructure of the Project, built infrastructure should not be exposed to greater than $29kW/m^2$ of radiant heat.

For the Project site APZ distances have been calculated based on a BAL-29 separation distance using the Flamesol Minimum Distance Calculator (Fire Protection Association Australia, 2026). These are detailed in Table 4-1 and Figure 4-1 below.

The initial 10m of APZ around the BESS is recommended to be non-vegetated (CFA, 2023), while the remainder of the APZ is to be managed as per requirements detailed in Section 4.2.1. This is consistent with a 10m cleared vegetation zone around assets recommended in *Bushfire Resilient Communities* (Queensland Fire and Emergency Services, 2019) and a 10m cleared fire line width identified in the *Accepted development vegetation clearing code* (Department of Natural Resources, 2023).

Table 4-1: Vegetation, slope, and APZ distances (FFDI 61)

Direction	Vegetation formation (AS 3959:2018)	Slope class	APZ* for BAL-29 (AS 3959:2018)
North	Forest	Downslope > 0° to 5°	22m
North east	Woodland	All upslope and flat land (0°)	12m
East	Woodland	All upslope and flat land (0°)	12m
South east	Woodland	Downslope > 0° to 5°	14m
South	Forest	All upslope and flat land (0°)	18m
South west	Forest	All upslope and flat land (0°)	18m
West	Forest	Downslope > 0° to 5°	22m
North west	Forest	Downslope > 0° to 5°	22m
(*) Based on Flamesol Minimum Distance Calculator (Fire Protection Association Australia, 2026)			

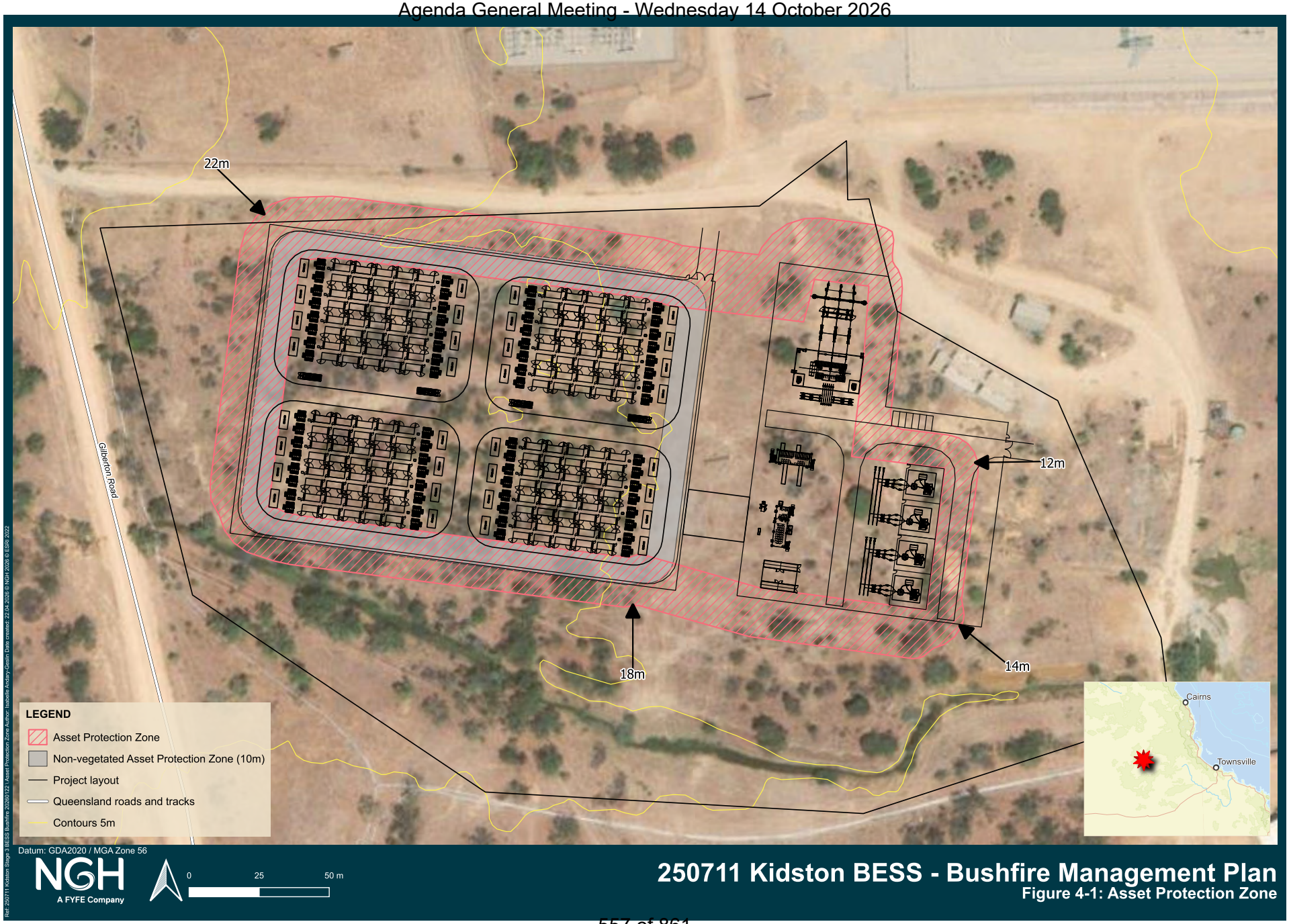
4.2.1. Asset Protection Zone management

All landscaping and vegetation within the established APZ are recommended to comply with requirements detailed in *Bushfire Resilient Building Guidance for Queensland Homes* (Queensland Reconstruction Authority, 2020) and *Bushfire Resilient Communities* (Queensland Fire and Emergency Services, 2019). This includes but is not limited to the following management actions where vegetation fuel hazard is present:

- Maintain a clear understorey around trees and shrubs. This will restrict the opportunities for a surface fire to ignite the lower branches
- Routine maintenance should be carried out to remove dead leaves, branches and loose bark from trees. Also remove dead twigs, leaves and needles from shrubs and other smaller plants.
- Prune excess foliage (especially dead or dry foliage) from trees, shrubs and other woody plants
- Remove the lower branches of trees. This reduces the opportunities for a surface fire to burn up into the canopy. It is usually recommended to remove branches up to 1.5m above the ground, however, specific heights will depend on the age of the tree and its species.
- Keep all lawn and grasses short to reduce fuel load and minimise the chances of surface fire
- Retain the moisture content of plants by watering them regularly
- Be mindful of the influence of seasonal weather patterns and how the vegetation will perform in summer when bushfires are most prevalent. In general, the maintenance requirements (in terms of bushfire) will be greatest in summer, and especially during periods of high temperature and low rainfall or periods of water restrictions.

- Trees and other vegetation in the vicinity of powerlines must be managed
- Woodpiles and other combustible materials should be stored downslope (if possible) and well away from buildings.

The area of RE in the southern area of the Project site will not need to be disturbed to successfully achieve a compliant APZ. This is due to the vegetation within the RE not being very dense, and that the rest of the APZ is to be reduced to groundcover vegetation only.


22m
12m
18m
14m
Gilberton Road
LEGEND
Asset Protection Zone
Non-vegetated Asset Protection Zone (10m)
Project layout
Queensland roads and tracks
Contours 5m
Cairns
Townsville
Datum: GDA2020 / MGA Zone 56
0
25
50 m
NGH
A FYFE Company
250711 Kidston BESS - Bushfire Management Plan
Figure 4-1: Asset Protection Zone
Ref: 250711 Kidston Stage 3 BESS Bushfire 20260122 | Asset Protection Zone Author: Isabelle Ardery-Gestin Date created: 22.04.2026 © NGH 2026 © ESRI 2022

4.3. Access and egress routes

Access to the Project site will be provided via an existing internal access track extending from Gilberton Road. The existing access route currently services the K2-Hydro facilities within the Clean Energy Hub, and the Ergon and Aurumfield Substations. It will be utilised and, where necessary, upgraded to a minimum 6m width to accommodate construction and maintenance vehicles for the BESS.

Access and egress route requirements are not specified in AS 3959:2018 and consequently should comply with the requirements of *Design Guidelines and Model Requirements: Renewable Energy Facilities V4* (CFA, 2023) (Table 4-2) and requirements of the relevant planning schemes (Appendix A). In an extreme weather event, appropriate vehicle routes allow for efficient access of emergency services to the Project site and efficient egress of all persons from the Project site.

Table 4-2: Emergency vehicle access requirements

Model requirement (CFA, 2023)		Proposed development compliance
All facilities:	Roads must be of all-weather construction and capable of accommodating a vehicle of 15 tonnes (e.g. no compacted earth). Constructed roads should be a minimum of 4m in trafficable width with a minimum 4m vertical clearance for the width of the formed road surface. Any fencing along access routes must allow for width of fire vehicles.	Primary and secondary access tracks to the Project site will comply.
	The average grade should be no more than 1 in 7 (14.4% or 8.1°) with a maximum of no more than 1 in 5 (20% or 11.3°) for no more than 50m.	Will comply
	Dips in the road should have no more than a 1 in 8 (12.5% or 7.1°) entry and exit angle.	Will comply
	Roads must incorporate passing bays at least every 600m, which must be at least 20m long and have a minimum trafficable width of 6m. At least one passing bay must be incorporated where roads are less than 600m long.	Will comply
	Road networks must enable responding emergency services to access all areas of the facility, including fire service infrastructure, buildings, BESSs and related infrastructure, substations and grid connection areas.	Will comply
BESS specific	At least two access points are to be provided into each	Will comply with access points at the western and

Model requirement (CFA, 2023)		Proposed development compliance
requirement:	section where BESSs are located.	eastern end of the Project site.

4.4. Water supply

An appropriate reticulated water supply in the form of an overhead standpipe with a Storz outlet fitting is available adjacent to the BESS site to support effective emergency services response (Figure 1-1). This is to be maintained for the commencement of construction and for the duration of the operational life (including decommissioning) of the BESS.

The overhead standpipe is to be provided within 10m of each building (other than a Class 10 building), which:

- Is of non-flammable construction
- Is protected from bushfire attack where required
- Allows medium rigid vehicle (15 tonne fire appliance) clear access within 6m of the overhead standpipe
- If serviced by a rural fire brigade, is provided with rural fire brigade tank fittings of a 50 millimetre (mm) ball valve and male camlock Storz coupling
- Is clearly identified by directional signage at the street frontage (Queensland Fire and Emergency Services, 2019).

4.5. Fire detection and suppression equipment

Fire detection and suppression equipment requirements are not specified in AS 3959:2018 or relevant Queensland documentation (*Bushfire Resilient Building Guidance for Queensland Homes* (Queensland Reconstruction Authority, 2020) and *Bushfire Resilient Communities* (Queensland Fire and Emergency Services, 2019)), and consequently should comply with the requirements of *Design Guidelines and Model Requirements: Renewable Energy Facilities V4* (CFA, 2023) (Table 4-3) and requirements of the relevant planning schemes.

Table 4-3: Fire detection and suppression equipment requirements

Model requirement (CFA, 2023)		Proposed development compliance
Suitable fire detection and suppression equipment must be provided:	For on-site buildings and structures, according to the requirements of the NCC.	Will comply
	For storages of dangerous goods, according to the requirements of any Australian Standards for storing and handling of dangerous goods.	Will comply

Model requirement (CFA, 2023)		Proposed development compliance
	For electrical installations, a minimum of 2 suitable fire extinguishers must be provided within 3-20m of each power conversion unit.	Will comply
	In all vehicles and heavy equipment, each vehicle must carry at least a 9L water stored-pressure fire extinguisher with a minimum rating of 3A, or other firefighting equipment as a minimum when on-site during the Fire Danger Period.	Will comply

4.6. Assembly location and evacuation procedures

The assembly area for the Project site is located at the northern driveway, as shown in Figure 1-1. The assembly area serves as the initial coordination point for personnel prior to mobilisation from the works area to a different assembly area or an offsite area.

All vehicle access routes traverse areas near areas of unmanaged vegetation which can support higher intensity bushfires. Attempting to evacuate at the last moment through these areas during a bushfire may be extremely dangerous, with fatal consequences.

All evacuations must be managed in accordance with the instructions of the Site Manager, Incident Controller, fire warden, or their delegate. Personnel may be directed to a works assembly area to await instructions to evacuate to an offsite area, or to seek refuge until a bushfire passes.

4.7. Emergency response procedures

Should a formal emergency alert be issued by fire authorities for the Project site the actions in Table 4-4 must be applied. It is noted that emergency alerts may be issued by text or through the media directly from fire authorities to persons within the alert areas.

Table 4-4: Emergency alert response

Alert Level and Description	Project response action
Advice A fire has started. There is no immediate danger. Stay up to date in case the situation changes.	• Business as usual • Site manager or delegate to monitor ABC local radio (ABC Townsville - 630 AM) and Queensland Fire Department website to confirm the local bushfire situation • All work units and contractors are to follow the directions of the Site Manager or delegate and remain within communication contact and near a means of transport.

Alert Level and Description	Project response action
Watch and Act There is a heightened level of threat. Conditions are changing and you need to start taking action now to protect you and your colleagues	• In addition to the steps above, seek further instructions for your supervisor or the Site Manager (or delegate) • If safe move to the nearest Project assembly area or at the Oaks Rush Camp • Determine any individuals that are non-essential and initiate go-early actions if safe and approved by the Site Manager or delegate.
Emergency Warning An Emergency Warning is the highest level of Bush Fire Alert. You may be in danger and need to take action immediately. Any delay now puts your life at risk.	• All personnel to listen to ABC local radio (ABC Townsville - 630 AM) to Emergency Warning evacuation location issued by emergency services • Proceed early to evacuation location if safe and route is clear and approved by Site Manager or delegate • If offsite evacuation is not possible shelter in place within a Project site building, the Oaks Rush Camp, or if safe within a vehicle in an area cleared of vegetation • Personnel must not self-evacuate if an Emergency Warning is issued • **Fleeing, panic responses, and last minute evacuations into uncertain fire situations can be deadly**.

5. Conclusion and limitations

5.1. Conclusion

This Bushfire Management Plan has assessed the proposed Kidston BESS in accordance with the legislative and policy frameworks detailed in Section 2.

The bushfire risk assessment identified that bushfire risk can be appropriately managed provided that all buildings and associated infrastructure (where applicable) are to be designed and constructed to a minimum 29kW/m^2 (calculated at 1090K) corresponding to BAL-29. Development within areas subject to BAL-40 or BAL-FZ is not supported. APZs ranging from approximately 12m to 22m are required to be maintained around all identified built infrastructure.

Provided the recommended bushfire protection measures detailed in Section 4 are implemented and future design development remains consistent with the assumptions of this assessment, the Kidston BESS can achieve an acceptable level of bushfire risk and is capable of complying with relevant bushfire planning, design, and operational requirements. Any material changes to the development layout or design may require further bushfire assessment to confirm ongoing compliance.

5.2. Limitations

In relation to this assessment, please note the field work to assess potential bushfire risks and impacts was based on best available information at the time of the site visit and the designs provided by the client. This report does not include or consider additions to the Aurumfield Substation, nor the grid connection from the BESS to the Aurumfield Substation. Once these designs are provided, these aspects of the Project should be assessed for bushfire compliance.

It should also be noted that the measures contained in this document cannot guarantee that a building or asset will survive a fire event on every occasion. This is substantially due to:

- The unpredictable nature and behaviour of fire
- A reliance on ongoing and timely inspections
- Monitoring and maintenance of assets to be completed
- Ongoing implementation of mitigation measures
- Extreme weather conditions.

6. References

ABCB. (2022). *National Construction Code.* Australian Building Codes Board.

CFA. (2023). *Design Guidelines and Model Requirements: Renewable Energy Facilities V4*. Country Fire Authority. Victoria.

Department of Natural Resources. (2023). *Accepted development vegetation clearing code - Clearing for infrastructure* Effective 22 November 2023. Department of Natural Resources, State of Queensland.

Department of Transport and Main Roads. (2025). *Climate Change and Natural Hazards Risk Assessment Guideline*. Queensland Government.

Fire Protection Association Australia. (2026). *Flamesol: Minimum distance calculator.* Accessible from: https://www.fpaa.com.au/Web/Flamesol/Tools/Flamesol_mdc.aspx.

NASH. (2014). *NASH Standard – Steel Framed Construction in Bushfire Areas.* National Association of Steel-Framed Housing Ltd.

NSW RFS. (2019). *Planning for Bush Fire Protection.* NSW Rural Fire Servies. Accessible from: https://www.rfs.nsw.gov.au/__data/assets/pdf_file/0005/174272/Planning-for-Bush-Fire-Protection-2019.pdf.

Queensland Fire and Emergency Services. (2019). *Bushfire Resilient Communities - Technical Reference Guide for the State Planning Policy State Interest "Natural Hazards, Risk and Resilience - Bushfire"*. Queensland Government. Accessible from: https://www.fire.qld.gov.au/sites/default/files/2021-05/Bushfire-Resilient-Communities.pdf.

Queensland Fire Department. (2020). *Bushfire prone area - Queensland series*. Accessible from: https://www.data.qld.gov.au/dataset/bushfire-prone-area-queensland-series.

Queensland Government. (2025). *State code 27: Battery storage facility development (State Development Assessment Provisions v3.5).* Accessible from: https://www.planning.qld.gov.au/__data/assets/pdf_file/0020/110594/sdap-v3.5-state-code-27-battery-storage-facility-development.pdf.

Queensland Government. (2026.). *Queensland Globe*. Accessible from: https://qldglobe.information.qld.gov.au/.

Queensland Reconstruction Authority. (2020). *Bushfire Resilient Building Guidance for Queensland Homes* (Version 1.0). State of Queensland. Accessible from: 0576_qra_bushfire_guideline_v10_pages_print.pdf.

Standards Australia. (2018). *AS 3959:2018 Construction of buildings in bushfire-prone areas*.

Standards Australia. (2019a). *AS 2304:2019 Water storage tanks for fire protection systems.*

Standards Australia. (2019b). *AS 4282:2019 Control of the obtrusive effects of outdoor lighting*.

State of Queensland. (2026). *Bushfire Resilient Communities MapViewer - Queensland*. ArcGIS. Accessible from: https://experience.arcgis.com/experience/61bf89d8f50e4ce3b8f52c8afb4cbeb4/.

Appendix A – Natural hazards, risk and resilience assessment benchmarks (bushfire)

Assessment Benchmark		Compliance
PO9: Non-rural development design responds to the potential threat of bushfire and establishes clear evacuation routes which demonstrate an acceptable or tolerable risk to people.	**AO9:** The lot layout: a) minimises the length of the development perimeter exposed to, or adjoining hazardous vegetation; b) avoids the creation of potential bottle-neck points in the movement network; c) establishes direct access to a safe assembly /evacuation area in the event of an approaching bushfire; **d)** ensures roads likely to be used in the event of a fire are designed to minimise traffic congestion.	N/A – Project is a rural development.
PO10: Reconfiguring a lot provides a constructed perimeter road or a formed fire trail between the lot or building envelope and the hazardous vegetation and is readily accessible at all times for the type of fire-fighting vehicles servicing the area.	**AO10:** Lot boundaries or building envelopes are separated from hazardous vegetation by a public road or a fire trail which has the following characteristics: a) a reserve or easement width of at least 20m; b) a minimum trafficable (cleared and formed) width of 4m and no less than 4.8m vertical clearance, with 3m each side cleared of all flammable vegetation; c) no cut or fill embankments or retaining walls adjacent to the 4m wide trafficable path; d) can accommodate a 10 tonne vehicle;	Will comply – access is designed to accommodate emergency access and egress (see Section 4.3).

Assessment Benchmark		Compliance
	e) turning areas and vertical clearances for firefighting appliances in accordance with Queensland Fire and Emergency Services' Fire hydrant and vehicle access guidelines for residential, commercial and industrial lots; f) access granted in favour of Council and Queensland Fire and Emergency Services; g) allows and does not impede access for firefighting and maintenance for firefighting purposes.	
PO26: A vulnerable use is not established or materially intensified within a bushfire prone area unless there is an overriding need or other exceptional circumstances.	**AO26:** Vulnerable uses are not established or expanded within a bushfire prone area.	N/A – Project is not for vulnerable use.
PO27: Emergency services and essential community infrastructure are able to function effectively during and immediately after a bushfire event.	**AO27:** Emergency services and essential community infrastructure are not located in a bushfire prone area.	N/A – Project is not for emergency services and essential community infrastructure.
PO28: Development is located and designed to incorporate a bushfire defendable space from hazardous vegetation to facilitate access for firefighting and emergency vehicles, and safe evacuation to reduce risk to people and property.	**AO28.1:** No new development is located within the bushfire prone area; OR Development is separated from hazardous vegetation by a distance that achieves a radiant heat flux level at any point on the building or envelope respectively that does not exceed: h) 10kW/m² where involving a	Will comply – All assets within the Project site will be separated from hazardous vegetation by a distance that achieves a no greater than 29kW/m² of radiant heat as detailed in Section 4.2 of this report.

Assessment Benchmark		Compliance
	vulnerable use; or i) 29kW/m² otherwise. Note: The radiant heat levels and separation distances are to be established in accordance with method 2 set out in AS3959 – 2009 Construction of buildings in bushfire-prone areas. Where a separation distance is proposed to be achieved by utilising existing cleared developed areas external to the site, certainty must be established (through tenure or other means) that the land will remain cleared of hazardous vegetation.	
	AO28.2: Buildings or building envelopes are separated from adjacent buildings or building envelopes by a distance of 8m or as far as practically possible.	Will comply – The buildings for the Project are over 8m away from other buildings.
PO29: Development in a bushfire prone area makes adequate provision of water supply for fire-fighting requirements.	**AO29:** For Class 1 and Class 10a buildings located outside a reticulated water supply area a minimum water supply of 5,000 litres is available: a) from a water tank with 50mm camlock fittings (ball and valve) or from a pool or dam; b) at a pumpable distance for the Rural Fire Brigade from the development; OR For all other buildings located outside a reticulated water supply area no acceptable outcome is provided.	Will comply – The Project consists of a Class 8 building, and assets not covered under the NCC such as the BESS. Static water supply requirements will comply with requirements detailed in Section 4.4 of this report.
PO30: Landscaping areas that are designated for re-vegetation or	**AO30:** Landscaping treatments and areas designated for	Will comply – Landscaping within the APZ will maintain an overall

Assessment Benchmark		Compliance
rehabilitation are designed and managed to ensure they do not have the ability to become a medium, high, or very high potential bushfire intensity area in the future.	revegetation and rehabilitation are designed to achieve and maintain a: a) potential available fuel load which is less than 5 tonnes/hectare in aggregate; b) fuel structure which is discontinuous.	fuel load of less than 5 tonnes per hectare, with vegetation arranged to avoid continuous mid- and canopy-level growth.
PO31: Development is not located on slopes and land forms that expose people or property to an intolerable risk to life or property.	**AO31.1:** Development does not occur along ridgelines, saddles and crests where slopes exceed 14°.	Will comply – The Project does not occur along ridgelines, saddles and crests where slopes exceed 5°.
	AO31.2 Development is located where the effective slope is less than 20° downslope.	Will comply – The Project is located where the effective slope is less than 20° downslope.

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Appendix K Flood Study

KIDSTON BATTERY ENERGY STORAGE SYSTEM
HYDROLOGY REPORT

250711-CIV-REP-0001
Rev 0

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VALUE THROUGH INTEGRATION

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1. SUMMARY

The hydrological and hydraulic review evaluates the overland flow conditions associated with the proposed Kidston Battery Energy Storage System (BESS) development at Lot 12 on Plan SP345756, Kidston. It examines how local surface water runoff interacts with the proposed standalone energy storage facility within the Etheridge Shire Council area, providing supporting information for the Material Change of Use (MCU) application to the State Assessment and Referral Agency (SARA).

A flood analysis was completed to assess site behaviour under both the 0.5% Annual Exceedance Probability (AEP) and 1% AEP design events. While both events were simulated, the 0.5% AEP event was adopted as the governing design case in accordance with Queensland Urban Drainage Manual (QUDM) Table 7.3.2, which requires critical electrical infrastructure to maintain immunity to the 0.5% AEP (1-in-200-year) event. The modelling confirmed that the 180-minute duration, temporal pattern TP08, was the critical storm for the 0.5% AEP scenario, resulting in a peak water level (PWL) of 538.5 m AHD, which forms the basis for the project's Flood Planning Level (FPL) of 539.1m AHD. Results of the 1% AEP assessment, including the critical 360-minute (TP09) maximum depth and velocity overland flow outcomes, are provided in Appendix D and Appendix E for reference.

Model outputs show that the project area lies near the top of a small receiving catchment within the Einasleigh Uplands, with ground levels generally sloping from east to west toward Gilberton Road at approximately 2%. Within the decommissioned South Pond area, flooding is predominantly shallow sheet flow, typically less than 0.1 m deep. No formal table drains or cross-drainage structures exist on the current access tracks to convey upstream runoff; however, the elevated landform prevents exposure to significant riverine flooding from major systems such as the Copperfield River.

The proposed BESS footprint is positioned within a zone of comparatively low flood hazard and outside primary overland flow paths. Provided the detailed design ensures no adverse afflux or concentration of flows at the Lawful Point of Discharge (LPD), the development can proceed while maintaining existing drainage patterns and meeting the requirements of State Code 27 and local flood management provisions.

2. INTRODUCTION

Genex Power Pty Ltd and the K3W Project Co as trustee for the K3W Project Trust are planning to develop bulk earthworks and associated drainage works to support the standalone Kidston BESS project located on Lot 12 on Plan SP345756. The project area is situated within the decommissioned South Pond area of the historical Kidston Gold Mine and falls under the Etheridge Shire Council jurisdiction. Consequently, all design requirements will be in accordance with the Etheridge Shire Planning Scheme (2025), State Code 27: Battery Storage Facility Development, and QUDM. The proposed development layout is shown in Figure 2.1. A flood assessment has been undertaken to evaluate the existing flood risk to the site at 0.5% Annual Exceedance Probability event required for the immunity of critical electrical infrastructure as per QUDM (2017) Table 7.3.2. Upon completion of the quantitative modelling, an engineering assessment was undertaken to determine the 180-minute critical duration and assess impacts on the identified LPD to ensure that existing drainage patterns are maintained and neighbouring properties within the Kidston Clean Energy Hub are not adversely affected. LPD are defined as locations where stormwater may be legally discharged in accordance with QUDM and local authority requirements.

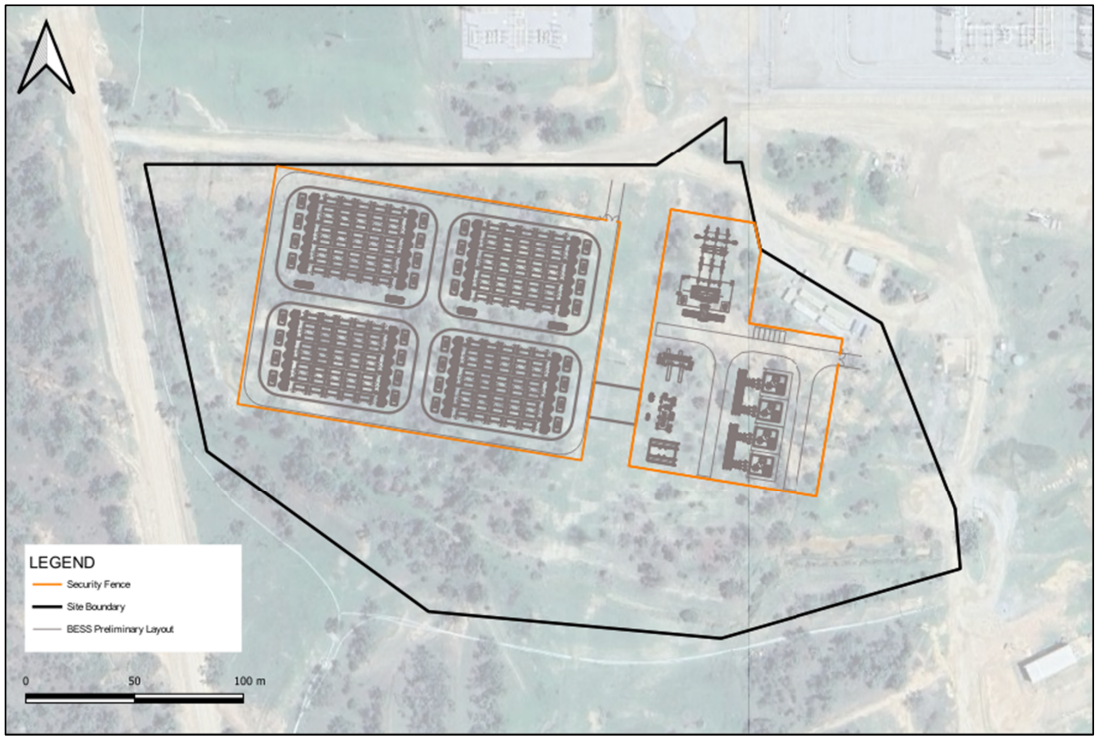


Figure 2.1 Proposed Development Layout

3. SCOPE

This report includes the interaction of surface water runoff and the proposed above-ground Kidston BESS infrastructure. The model assessed to form the basis of this report was completed by reviewing the local catchment runoff for overland flow assessment using a TUFLOW Direct Rainfall (Rain-on-Grid) methodology; however, it does not consider riverine flooding from major regional systems such as the Copperfield River, which is located well outside the project's immediate flood envelope. This exclusion is justified based on review of Department of Resources Queensland FloodCheck mapping and Floodplain Assessment Overlay, which indicate the site is outside mapped riverine flood extents. The Queensland FloodCheck mapping service and the Etheridge Shire Planning Scheme Floodplain Assessment Overlay were used to provide a basis of comparison between the overland flow modelling completed for this assessment and established regional hazard data. This document does not explicitly design erosion and sediment control (ESC) measures and does not consider temporary works, as these will be addressed in a subsequent site-specific ESCP prepared prior to the commencement of operational works.

4. FLOOD ASSESSMENT

4.1 Site Characteristics

The proposed Kidston BESS is located on Lot 12 on Plan SP345756, situated within the decommissioned South Pond area of the historical Kidston Gold Mine at approximate coordinates 18.876° S, 144.143° E (Geographic Coordinate System). The site lies within the Einasleigh Uplands Bioregion, which is characterised by gently undulating terrain and open woodland vegetation. Surface levels across the 6.3-hectare development site generally grade from east to west toward Gilberton Road at a slope of approximately 2%.

A review of regional hydrology indicates that the site is positioned at the top of its local receiving catchment, well removed from major riverine systems such as the Copperfield River (located approximately 11 km away) and the Einasleigh River. Given this elevated position relative to the regional floodplains, the site is not considered to be at risk from riverine flooding. Consequently, this assessment focuses on the management of local overland sheet flow.

4.2 Catchment Geometry

The catchment geometry identifies the contributing areas that generate overland flow across the BESS footprint. This was determined using a combination of high-resolution 0.5m LiDAR survey data captured post construction of Wises Upper Reservoir walls. This data allowed for a precise geometric analysis of the historically disturbed mine terrain, defining the flow paths that report to the western lease boundary. Figure 4.1 shows the catchment geometry. The contributing catchment area is approximately 33 hectares.

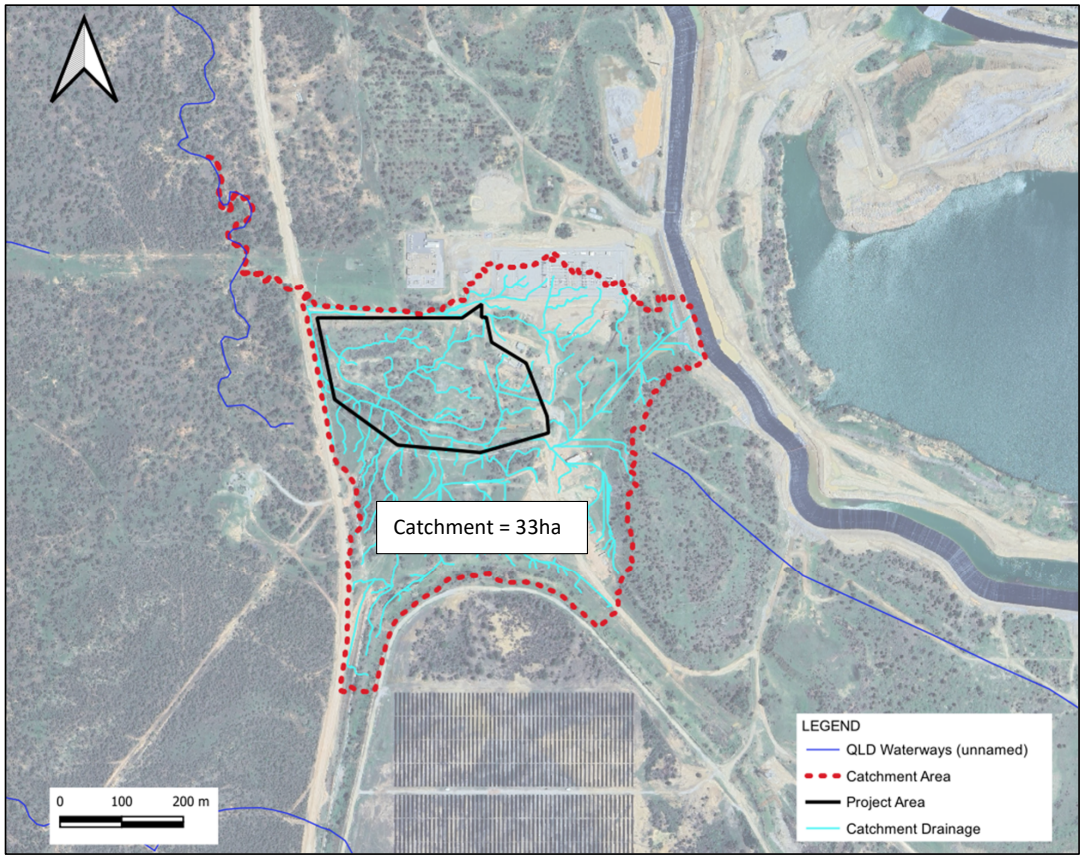


Figure 4.1 Pre-Development Catchment Plan

4.3 Quantitative Modelling

Quantitative hydraulic modelling was performed using TUFLOW, a suite of advanced 1D/2D/3D computer simulation software for flooding, urban drainage, coastal hydraulics, sediment transport, particle tracking and water quality. The model utilises a Direct Rainfall (Rain-on-Grid) methodology, where rainfall hyetographs are applied to every active cell in the numerical grid to simultaneously simulate hydrological processes and hydraulic routing. A HQ (Water Level vs. Flow) downstream boundary condition was applied along the western boundary to represent the natural discharge toward Gilberton Road.

The modelling process followed three primary steps:

1. Identification of model boundaries and selection of the numerical grid.
2. Assembly of Intensity-Frequency-Duration (IFD) rainfall inputs and loss parameters.
3. Post-processing of depth and velocity results for the baseline scenario

4.3.1 Analysis Area

The grid resolution and extent of the TUFLOW model are summarised in Table 4.1.

Table 4.1 TUFLOW Analysis Model

Model ID	Grid Resolution (m)	Model Area (ha)
M01	1	33

4.4 Model Inputs and Parameters

The rainfall and runoff model was developed using the hydrological and hydraulic parameters detailed in the following sections. This includes the definition of meteorological inputs such as the AEP, IFD data, critical durations, and temporal and spatial storm patterns. Additionally, the model incorporates storm losses and climate change adjustments to accurately simulate catchment response.

The simulation also accounts for surface-level characteristics, specifically high-resolution elevation data, roughness coefficients, and infiltration rates. These factors are integrated within a defined simulation method and duration to capture the peak hydrological response. The following sections outline these components and the technical limitations inherent in the modelling approach.

4.4.1 Rainfall Characteristics

4.4.1.1 Probability of Event

In accordance with State Code 27 and QUDM Table 7.3.2, electrical utility facilities must maintain flood immunity from a reference flood with a 0.5% AEP, or a 1 in 200-year event. While the Etheridge Shire Planning Scheme (2025) identifies the 1% AEP event as the Defined Flood Event (DFE) for the region, the quantitative hydraulic modelling for the Kidston BESS focused on the more severe 0.5% AEP scenario.

Because the 0.5% AEP event represents a larger and more conservative hydrological impact than the 1% AEP DFE, demonstrating safe operation at this higher standard inherently satisfies the immunity requirements of the local authority. This approach ensures that all critical infrastructure is located above the peak water levels required for high-resilience electrical facilities, providing a robust baseline for the site's FPL. AEP adopted limits are outlined in Table 4.2. This conservative approach exceeds the 1% AEP DFE in the Etheridge Shire Planning Scheme 2025 and aligns with the resilience intent of State Code 27.

Table 4.2 AEP Limits

Defined Flood Event	Flood Planning level
0.5% AEP	Defined Flood Event + 600mm

4.4.1.2 Temporal Patterns

The majority of hydrograph estimation methods used for the Kidston BESS flood assessment require a temporal pattern to describe the distribution of rainfall over time as a design input. To account for the inherent variability of storm events in the Kidston region, an ensemble event approach was adopted in accordance with Australian Rainfall and Runoff (ARR) 2019. Samples of 10 temporal patterns were utilised for each design duration as an appropriate compromise between capturing natural pattern variability and ensuring regional data availability.

Consistent with contemporary design practice, it is not recommended that a single temporal pattern representing the worst or best case be used in isolation for the design of critical electrical infrastructure. Testing has demonstrated that for most catchments, a large number of events within these ensembles are clustered around the mean and median response. By simulating the full ensemble, the assessment ensures a probability-neutral transformation of design rainfall into peak flow rates, providing a robust baseline for the pre-development conditions of the South Pond area.

4.4.1.3 Intensity-Frequency-Duration

The rainfall IFD sourced from the Bureau of Meteorology (BoM) - Figure 4.2.

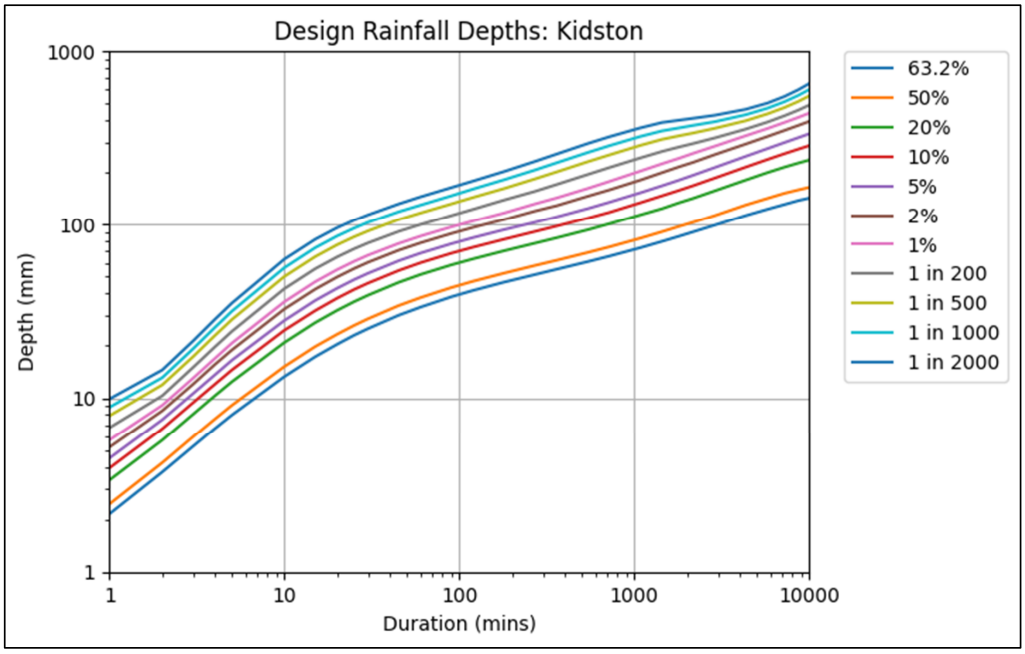


Figure 4.2 BoM Intensity-Frequency-Duration for Kidston BESS Site

4.4.1.4 Storm Losses

The storm loss for the model area, sourced from the ARR Data Hub are shown below in Table 4.3.

Table 4.3 ARR Storm Losses

Model	Location	Initial Losses (IL)	Continuing Losses (CL)
M01	18.876° *S* 144.143° *E*	63.0 mm	6.1 mm/hr

4.4.1.5 Climate Change

ARR guidelines, updated in 2024, require that historical rainfall observations be adjusted to reflect the impacts of rising global temperatures. Because global temperatures have risen since the midpoint of the data used for the 2016 IFDs, design rainfall estimates for the Kidston BESS require factoring to account for this non-stationarity. For this assessment, the 2060 medium-term horizon using the SSP3-7.0 (High Emissions) pathway was adopted, which projects a 1.8°C global mean surface temperature increases relative to the 1961–1990 baseline. Design rainfall intensities were factored at a rate proportional to this increase to ensure the long-term resilience of the facility's drainage design.

4.4.1.6 Critical Duration

The critical duration was rigorously assessed by simulating an ensemble of 10 temporal patterns for storm durations ranging from 60, 180, 360, 720, and 1440 minutes. For the Kidston BESS site, simulation results identified 180 minutes as the critical duration causing the peak water levels at the infrastructure footprint. Consequently, this 180-minute duration and its corresponding median temporal pattern (TP08) have been adopted to establish the baseline flood risk and peak flow rates for the site.

4.4.2 Surface Characteristics

4.4.2.1 Elevation

The terrain profile for the hydraulic model was defined using a high-fidelity Digital Elevation Model (DEM) with a 1-metre resolution, derived from a 0.5m LiDAR survey captured specifically for the Kidston mine site pumped hydro conversion. The TUFLOW numerical grid was also set to a 1-metre resolution to ensure a precise digital representation of the decommissioned South Pond area and its 2% general westward fall toward Gilberton Road. This high resolution allows for the explicit representation of minor flow paths and terrain features that influence shallow overland sheet flow.

4.4.2.2 Surface Roughness

Manning's roughness coefficient 'n' is utilised to estimate the resistance to flow across every grid cell in the TUFLOW model. Coefficients were assigned based on site imagery and historical mining land use at the South Pond area to reflect varying surface coverage and vegetation density. The adopted coefficients for the pre-development model are outlined in Table 4.4.

Table 4.4 Manning's Roughness Coefficient

Area Category	Surface Type	Adopted Manning's 'n'
Open space	Pervious areas with Minimal Vegetation (grassed)	0.04
Open Space	Pervious areas with Moderate Vegetation (shrubs)	0.05
Road	Unsealed Roads	0.022
Hardstand	Hardstand (gravel)	0.025

4.4.3 Hydraulic Structures

No drainage structures (such as culverts, bridges or constructed drains) were modelled as part of the overland flow simulation. This simulation is to assess the existing conditions of the project area. The model is considered appropriate for planning-level assessment of overland flow, subject to the limitations outlined in Section 4.4.4.3. Localised flooding impact of roads are however reviewed separately outside of this report.

4.4.4 Model/Simulation Characteristics

4.4.4.1 Simulation Duration

The TUFLOW solver simulated the free surface flow as a series of timesteps. The time step and end time of the model area is summarised in Table 4.5.

Table 4.5 Model Characteristics

Model ID	Timestep (sec)	End Time (hr)
M01	0.25	69

4.4.4.2 Simulation Method

Fyfe have utilised a combination of QGIS and Global Mapper to generate the inputs for TUFLOW to process.

4.4.4.3 Limitations

The TUFLOW hydraulic model used for the Kidston BESS overland flow assessment is consistent with traditional drainage design used to establish flood immunity for critical electrical infrastructure. While providing a high-resolution (1m grid) representation of the South Pond area, this study focuses on local surface runoff and excludes several in-depth requirements typically found in regional flood studies. These exclusions include:

- Calibration to stream gauging: Model results were not calibrated to historical stream gauging records, as regional gauges (such as the Burdekin River at Blue Range) are situated significantly downstream of the project area.
- Monte Carlo or stochastic analysis: Hydrological inputs were based on peak median temporal patterns from the ARR DataHub ensemble, rather than a full stochastic simulation of joint probabilities.
- Empirical Comparison: A critical comparison between the TUFLOW Direct Rainfall (Rain-on-Grid) results and empirical runoff-routing formulae (e.g., XP-RAFTS) was not performed for this specific footprint.
- Sensitivity Analysis: While a mass balance check was completed to ensure model stability, a dedicated sensitivity analysis of Manning's 'n' roughness parameters was not conducted for the pre-development scenario.
- Given these exclusions, the overland flow assessment is intended to inform the establishment of the FPL of 539.1m AHD and to assess the relative impact of the BESS pads for the defined rainfall events. The results provide an indicative baseline suitable for planning-level design.
- Government terrain data was sourced from ELVIS, supplemented by a site-specific 0.5m LiDAR survey to provide high-fidelity contour information. Regional context was gauged against the Queensland Floodcheck mapping service and the Floodplain Assessment Overlay to ensure consistency with mapped flood hazards.

5. RESULTS

The TUFLOW hydraulic model results provide a comprehensive understanding of the maximum flood depth, water level, and velocity across the project area. These results establish the baseline flood risk for the 0.5% AEP event, ensuring that the Kidston BESS infrastructure is designed with appropriate immunity. Detailed hydraulic maps of the critical duration are provided in Appendix A- Appendix E. No post-development modelling results are presented in this report.

5.1 Key Observations

A critical duration assessment was conducted across five design storm durations (60, 180, 360, 720, and 1440 minutes) to identify the critical storm event for the catchment. Based on the peak water levels and discharge rates recorded, the 180-minute (3-hour) storm was identified as the Critical Duration for the site.

The site's existing topography and legacy mining features within the decommissioned South Pond area dictate the local hydraulic response, directing surface runoff generally from east to west at an average slope of 2%. Under the critical 0.5% AEP design storm, overland flow is predominantly concentrated within defined topographic depressions that function as natural drainage paths.

To evaluate the hydraulic conditions at the interface of the proposed BESS infrastructure, specific monitoring locations were established at Point P2 (near the project boundary) and Line L2 (across the primary flow path), as illustrated in Figure 5.1. The modelling confirms that while these areas track the maximum flood depth for the site, the primary overland flow remains well-contained within these identified channels and does not significantly encroach upon the proposed BESS platform areas.

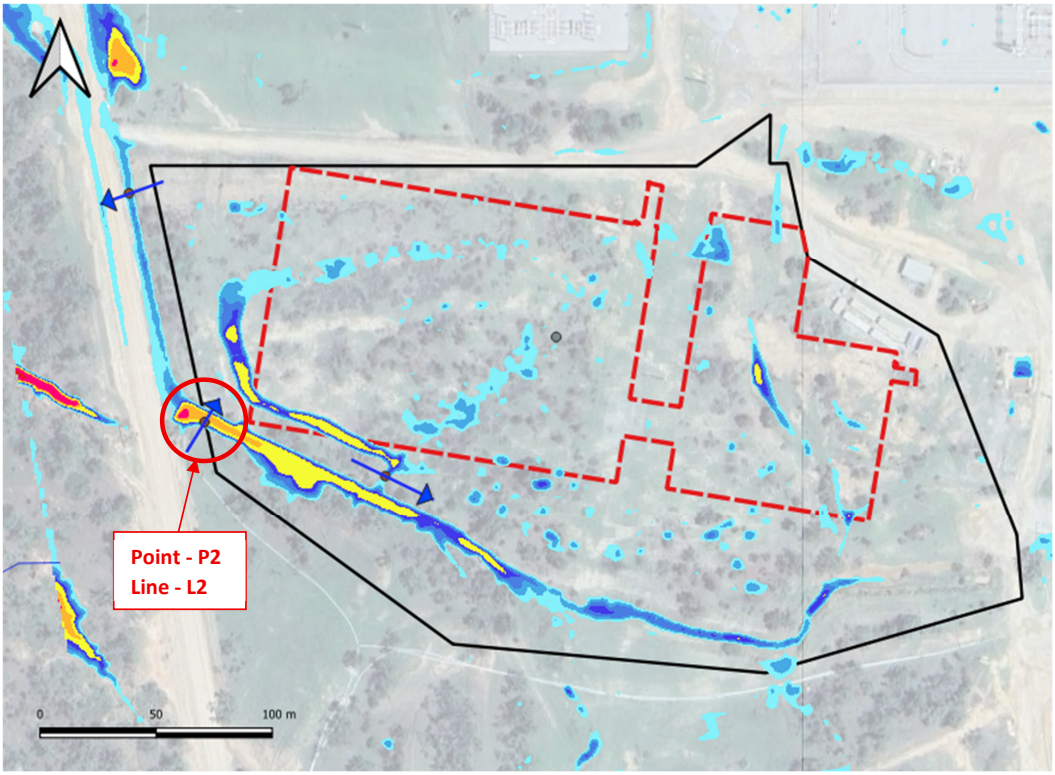


Figure 5.1 Peak Monitoring Locations

The modelling confirms that the catchment responds relatively quickly, with peak impacts occurring during the 180-minute event before receding during longer-duration volume events (720 and 1440 minutes).

The peak hydraulic parameters for the 0.5% AEP, 180-minute (Critical Duration) event are summarised in Table 5.1.

Table 5.1 Hydraulic Modelling Results – 0.5% AEP 180-minute (Critical Duration)

Parameter	Location	Result
Peak Water Level (PWL)	Point P2	538.5 m AHD
Peak Velocity (V_{max})	Point P2	0.63 m/s
Peak Discharge (Q_{max})	Line L2	2.92 m^3/s
Peak Flood Depth (D_{max})	Line L2	0.34 m

5.2 Hydraulic Implications

The project site is located outside the Floodplain Assessment Overlay under the Etheridge Shire Planning Scheme and is therefore not subject to riverine flooding. Site hydrology is instead dominated by localised overland flow, which forms the basis of the flood assessment and informs the establishment of the FPL.

Hydraulic modelling indicates a peak flow velocity of approximately 0.63 m/s for the adopted design event. This velocity is considered low to moderate and presents a minimal risk of significant bed or bank erosion. Flow conditions are subcritical and stable and can be effectively managed using standard surface treatments such as vegetation cover or localised rock armouring at drainage interfaces where required.

During the 0.5% AEP design event, the maximum modelled flood depth across the site is approximately 0.34m and occurs in the south-western portion of the site, which is hydraulically downstream of the proposed BESS infrastructure, the modelled PWL at this location of RL 538.5 m AHD has been adopted as the design flood level for the purposes of setting hardstand levels. To ensure adequate flood immunity and operational resilience, a minimum freeboard allowance of 600 mm has been applied above the adopted PWL in accordance with standard industry practice. This results in the FPL for the BESS hardstand areas of RL 539.1 m AHD.

This approach is consistent with the QUDM Table 7.3.2 requirements for critical infrastructure, as well as the 1% AEP design flood event plus freeboard provisions outlined in the Etheridge Shire Planning Scheme (2025). Final levels are to be confirmed during detailed design, in conjunction with refinement of the proposed hardstand and associated earthworks design.

6. CONCLUSION

This assessment investigated the existing overland flow risk associated with the proposed standalone Kidston BESS facility on Lot 12 on Plan SP345756, situated within the Etheridge Shire Council local government area.

The assessment found that:

- The project area is located in a low-hazard hydrologic environment, well-removed from the riverine flood envelopes of the Copperfield and Einasleigh Rivers. Surface water behaviour is governed by local overland flow that is predominantly concentrated within defined topographic depressions within the decommissioned South Pond area.
- During the 0.5% AEP critical storm duration (180 minutes), the Flood Planning Level was identified as 539.1m AHD for BESS Infrastructure hardstand.
- Overland flow outside of primary drainage depressions is characterised by shallow sheet flow, typically less than 0.1 m in depth, which does not materially impact the proposed 3-hectare BESS footprint.
- The proposed BESS infrastructure has been positioned within an area of comparatively low flood hazard, with peak velocities recorded at a stable 0.63 m/s, posing minimal risk of soil scour or erosion.
- Based on the numerical modelling, the development is not expected to result in adverse hydraulic impacts, subject to confirmation through post-development modelling demonstrating no afflux and no worsening of downstream conditions.
- The broader catchment drains westward, and the proposed works can be designed to preserve the protective function of existing landforms in accordance with the Etheridge Shire Planning Scheme and State Code 27.

Overall, the proposed BESS development is considered suitable from an overland flow perspective. To ensure long-term resilience, the final FPL should incorporate an appropriate freeboard (600mm) above the 0.5% AEP peak water level to satisfy the immunity requirements for critical electrical infrastructure. This exceeds the minimum 1% AEP DFE + freeboard required by the Etheridge Shire Planning Scheme 2025 and is consistent with QUDM guidance.

7. REFERENCES

BALL J, BABISTER M, NATHAN R, WEEKS W, WEINMANN E, RETALLICK M, AND TESTONI I (eds), 2019, Australian Rainfall and Runoff: A Guide to Flood Estimation, Version 4.2, Commonwealth of Australia (Geoscience Australia), Barton, ACT.

BUREAU OF METEOROLOGY (BoM). Intensity-Frequency-Duration Data for Kidston. Australian Government, Canberra.

DEPARTMENT OF RESOURCES. Queensland Floodcheck Mapping Service. Queensland Government.

DEPARTMENT OF STATE DEVELOPMENT, INFRASTRUCTURE AND PLANNING, 2025, Planning guideline - State code 27: Battery storage facility development, Queensland Government, Brisbane, QLD.

ETHERIDGE SHIRE COUNCIL, 2025, Etheridge Shire Planning Scheme, Etheridge Shire Council, Georgetown, QLD.

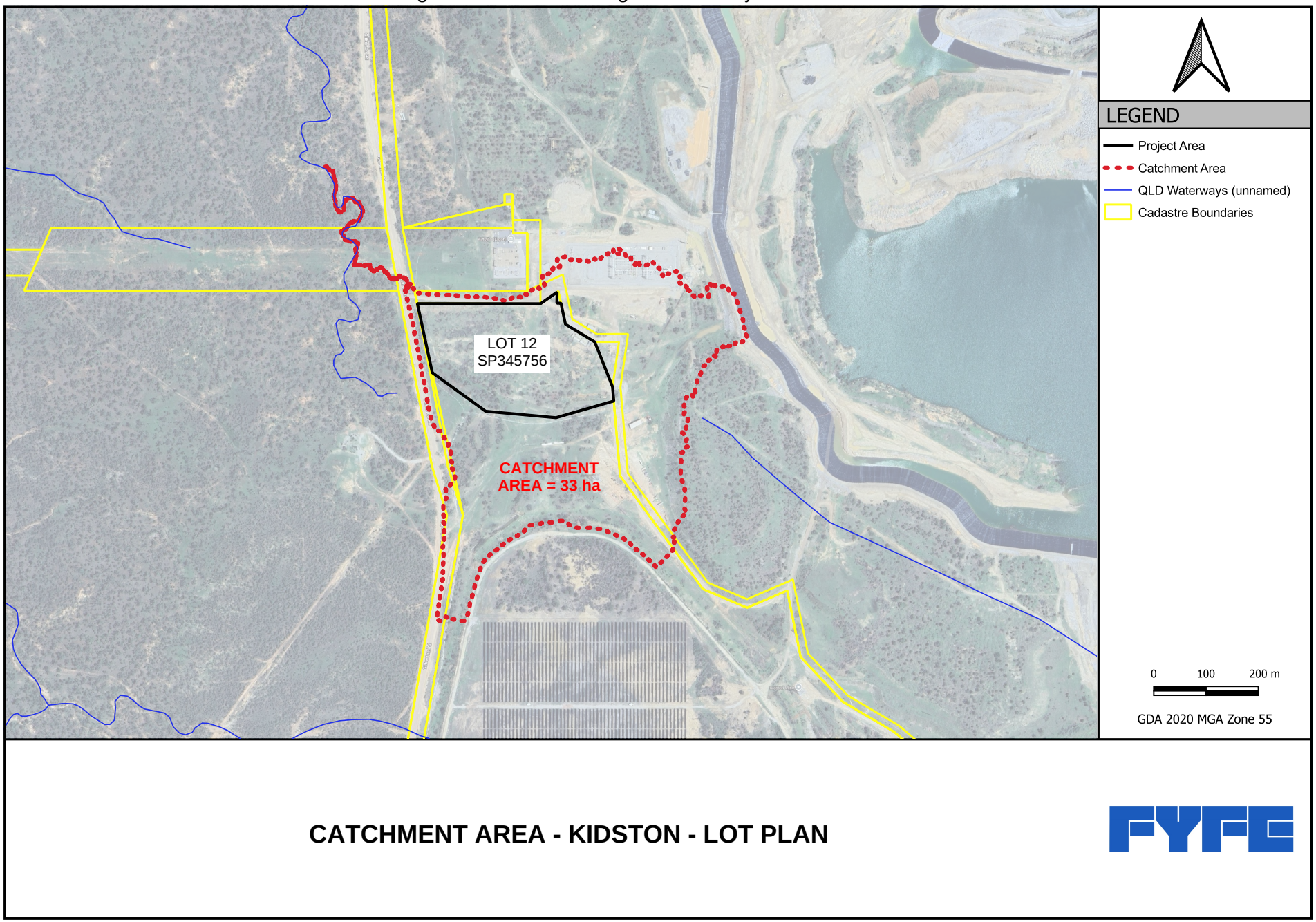
INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA, QUEENSLAND (IPWEAQ), 2017, Queensland Urban Drainage Manual (QUDM), Fourth Edition, IPWEAQ, Brisbane, QLD.

NGH PTY LTD, 2025, Kidston BESS Draft Project Description V2, 250711, Prepared for Genex Power.

QUEENSLAND GOVERNMENT. Floodplain Assessment Overlay. State Planning Mapping.

APPENDIX A
CATCHMENT AREA MAP

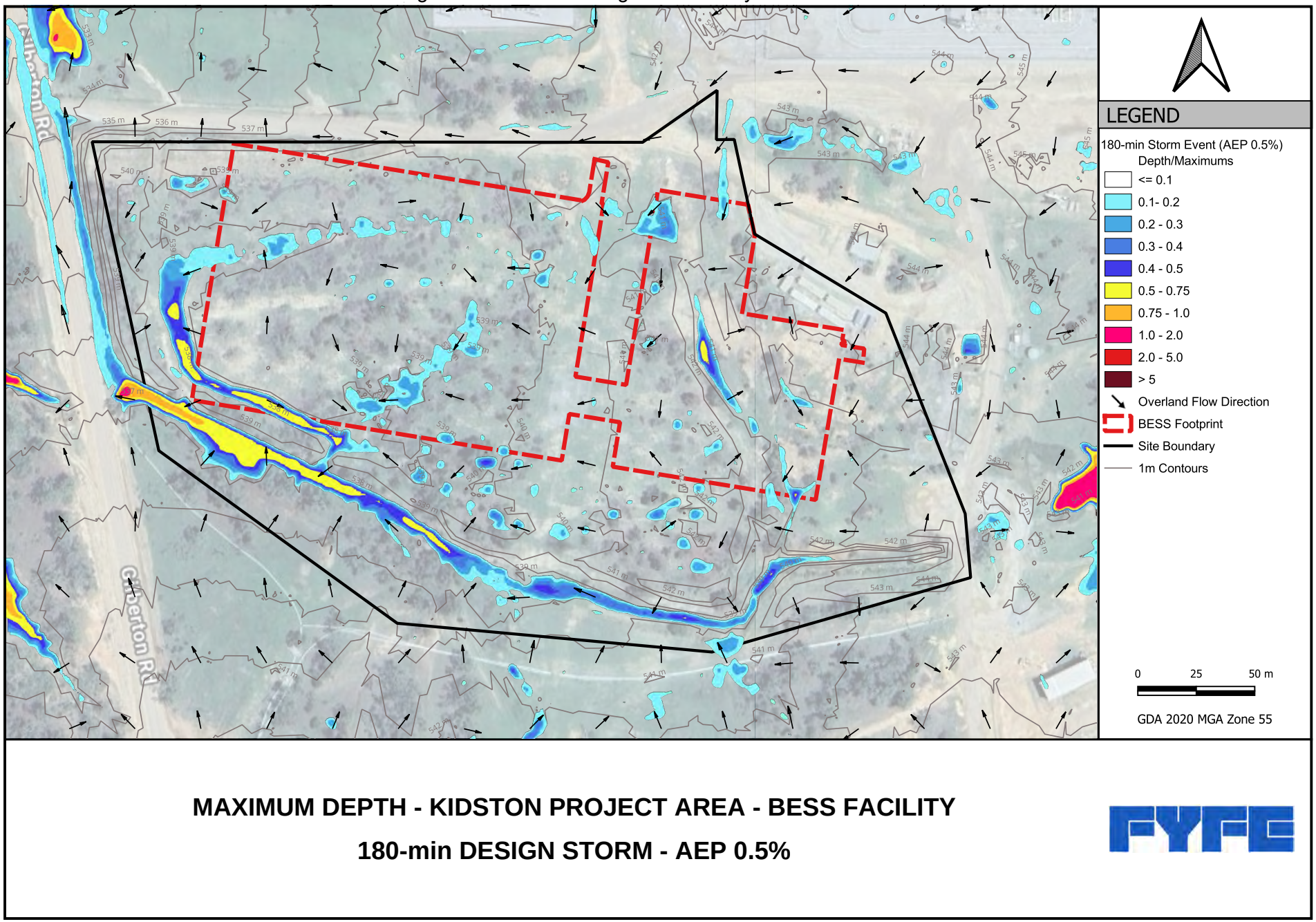
VALUE THROUGH INTEGRATION



CATCHMENT AREA - KIDSTON - LOT PLAN

APPENDIX B
OVERLAND FLOW – MAXIMUM DEPTH AEP 0.5% 180-min TP08

VALUE THROUGH INTEGRATION

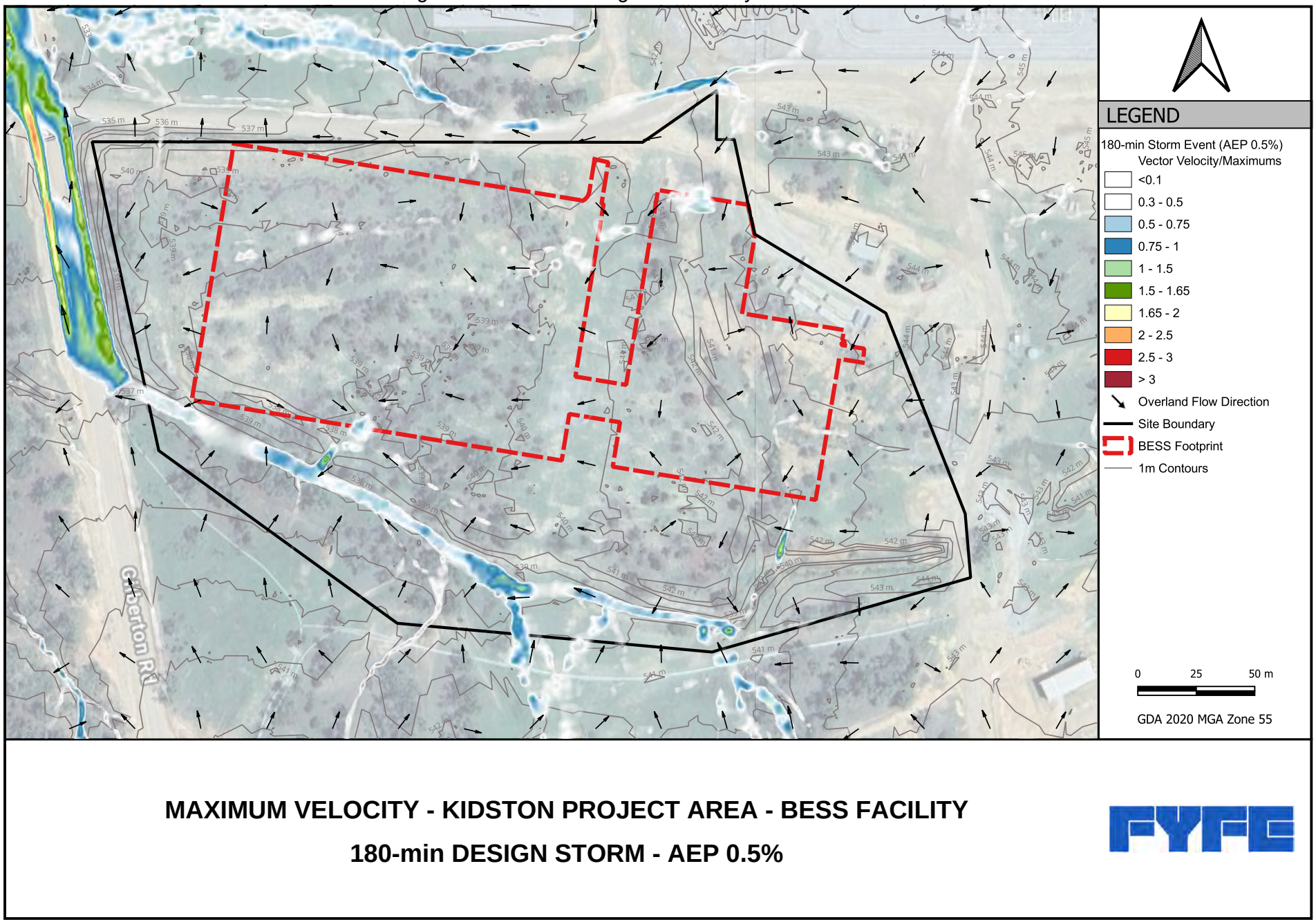


MAXIMUM DEPTH - KIDSTON PROJECT AREA - BESS FACILITY

180-min DESIGN STORM - AEP 0.5%

APPENDIX C
OVERLAND FLOW – MAXIMUM VELOCITY AEP 0.5% 180-min TP08

VALUE THROUGH INTEGRATION

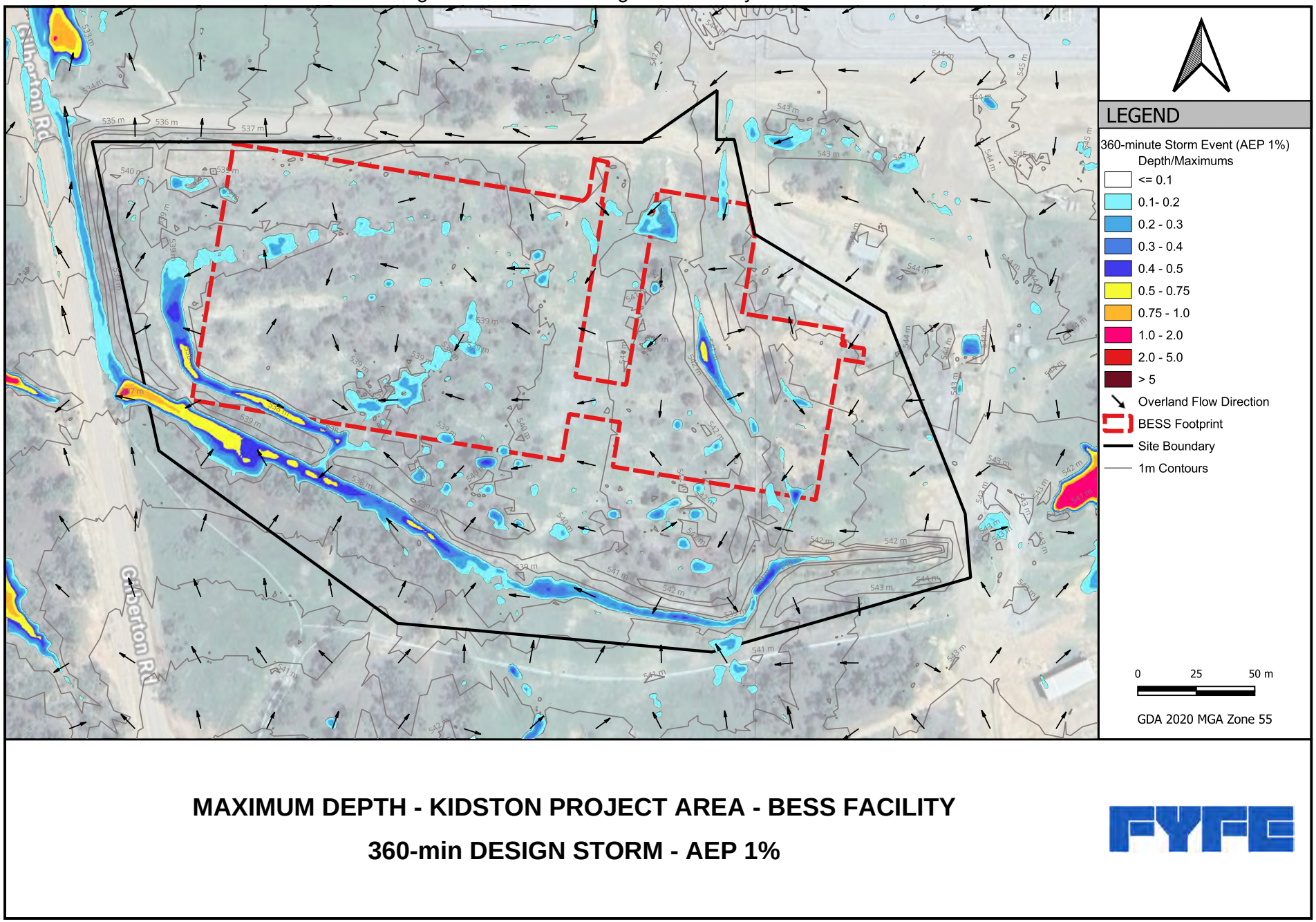


MAXIMUM VELOCITY - KIDSTON PROJECT AREA - BESS FACILITY

180-min DESIGN STORM - AEP 0.5%

APPENDIX D
OVERLAND FLOW – MAXIMUM DEPTH AEP 1% 360-min TP09

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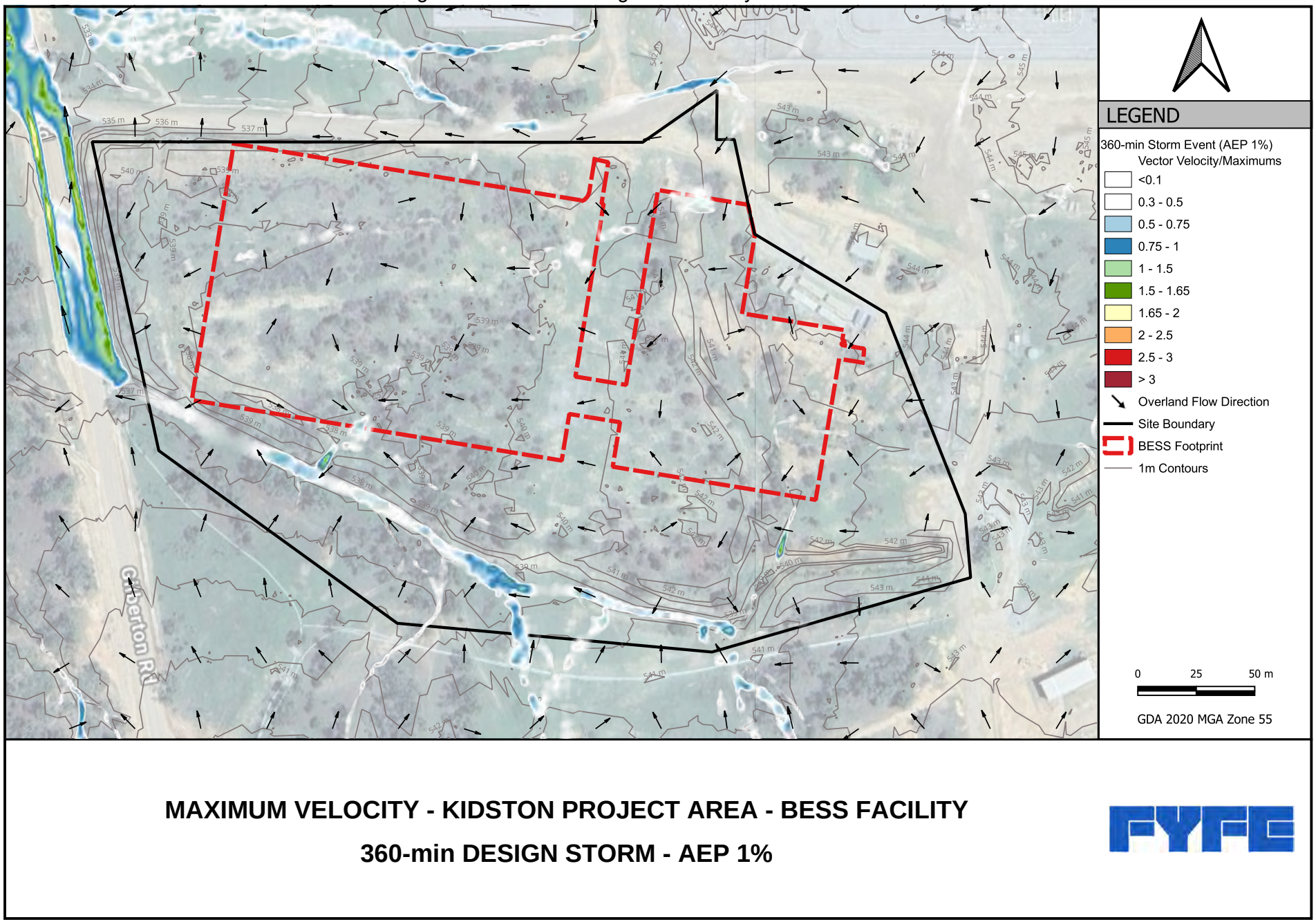


MAXIMUM DEPTH - KIDSTON PROJECT AREA - BESS FACILITY

360-min DESIGN STORM - AEP 1%

APPENDIX E
OVERLAND FLOW – MAXIMUM VELOCITY AEP 1% 360-min TP09

VALUE THROUGH INTEGRATION



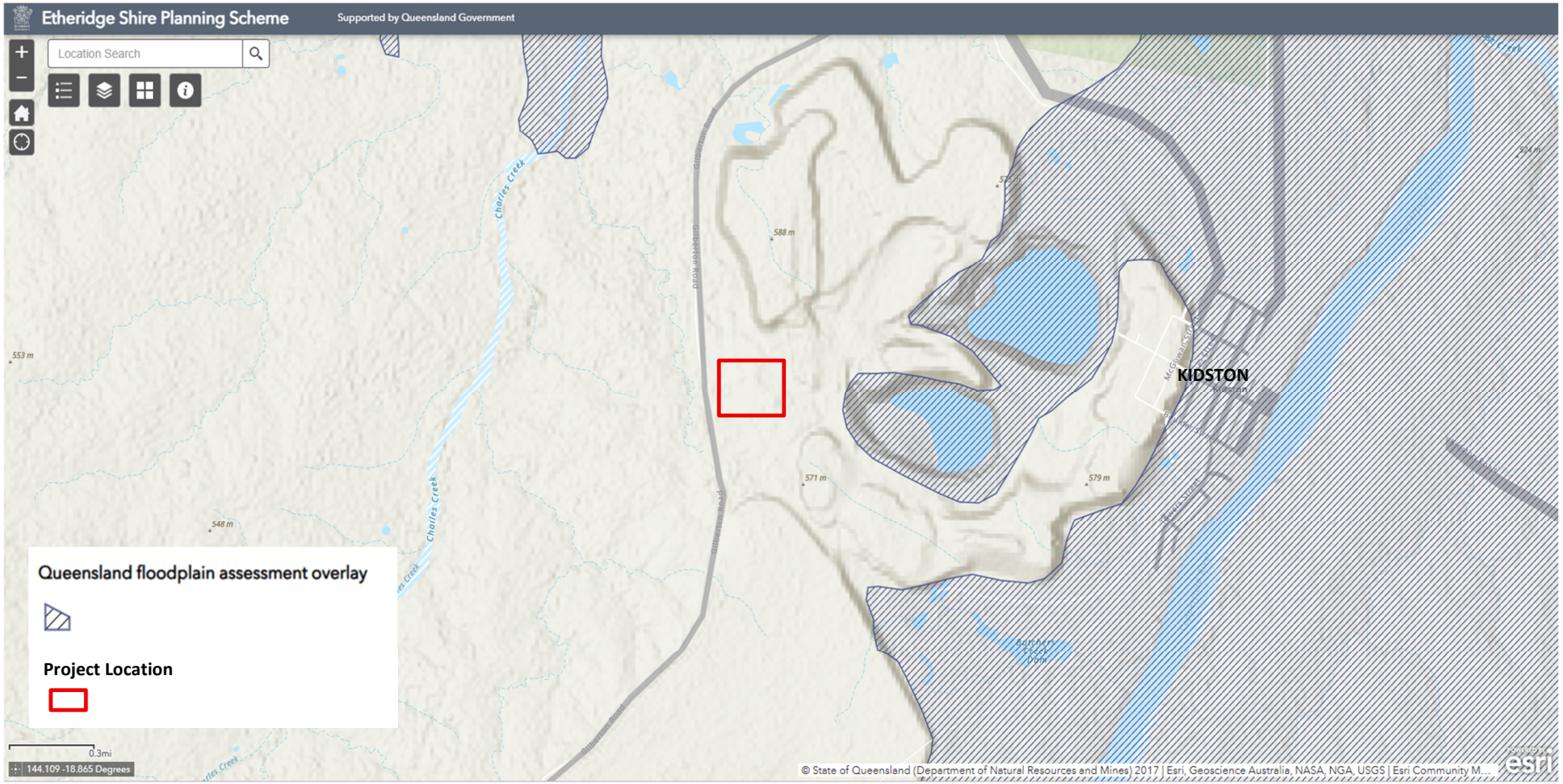
MAXIMUM VELOCITY - KIDSTON PROJECT AREA - BESS FACILITY

360-min DESIGN STORM - AEP 1%

APPENDIX F
ETHERIDGE SHIRE – FLOODPLAIN ASSESSMENT OVERLAY MAP

VALUE THROUGH INTEGRATION

KIDSTON BATTERY ENERGY STORAGE SYSTEM
HYDROLOGY REPORT
250711-CIV-REP-0001
REV 0



APPENDIX G
QLD FLOODCHECK – RAPID HAZARD ASSESSMENT

VALUE THROUGH INTEGRATION



This map output is from FloodCheck Queensland

0 0.1 0.2 0.4 km

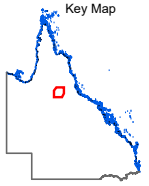
Scale 1:9,516

Paper size: A3

Print date: 20 March 2026

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opendata@resources.qld.gov.au

Key Map



Source Data Typically on:
Geocentric Datum of Australia 1994 (GDA1994)
Map Display in: EPSG 3857
WGS 1984 Web Mercator (Auxiliary Sphere)

FloodCheckMap_A3Landscape

Legend

Rapid Hazard Assessment

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Appendix L Stormwater Management Plan

KIDSTON BATTERY ENERGY STORAGE SYSTEM
STORMWATER MANAGEMENT PLAN

250711-CIV-REP-0002
Rev 0

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VALUE THROUGH INTEGRATION

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Revision History

Revision	Revision Status	Date	Prepared	Reviewed	Approved
0	Issued for Approval	19/06/2026	TJS	JAL	ALH

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Appendix A Maximum Depth & Velocity for critical Duration
Appendix B Site Stormwater Layout Drawing

1. INTRODUCTION

1.1 Project Background

This Stormwater Management Plan (SWMP) has been prepared on behalf of Genex Power Pty Ltd and the K3W Project Co as trustee for the K3W Project Trust to support the development application for the Kidston Battery Energy Storage System (BESS). The Project is seeking a Material Change of Use from the State Assessment and Referral Agency (SARA) and Reconfiguring a Lot approval from the Etheridge Shire Council.

The proposed BESS is a standalone facility with a capacity of up to 250 MW / 1,250 MWh. Occupying approximately 3 hectares of the 6.3-hectare Lot 12 on SP345756, centrally positioned within the Kidston Clean Energy Hub (Figure 1-1). The facility is located west of the Kidston Pumped Storage Hydro (K2-Hydro) infrastructure and south of the Aurumfield (K2X) substation, with the proposed site configuration detailed in Figure 1-2.

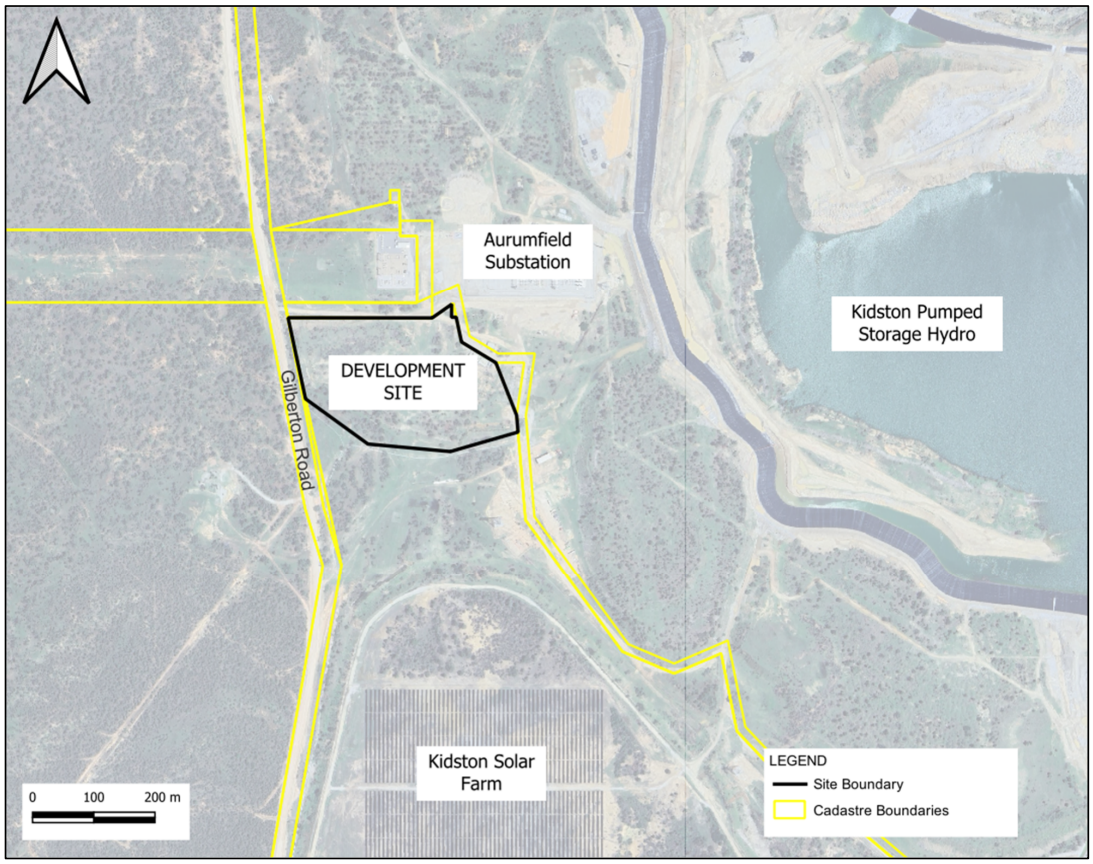


Figure 1-1 Site Locality Plan



Figure 1-2 Proposed Development Layout

1.2 Site Characteristics

The Project footprint is located on the decommissioned South Pond area of the historical Kidston Gold Mine. The current land use is characterised as disturbed and cleared industrial land associated with former mining activities. The BESS will be placed on a solid/firm ground pad consisting of containerised battery units and associated power stations. Existing land use is summarised in Table 1-1.

Table 1-1 Existing Land Use Summary

Land Use Type	Description	Potential Hydrologic Effect
Historical mine land	Disturbed, compacted	Reduced infiltration
Industrial land	Cleared, limited vegetation	Faster runoff
Access tracks	Unsealed, no drains	Uncontrolled sheet flow

1.3 Topography and Catchment

The topography consists of gently undulating terrain within the Einasleigh Uplands, with a general catchment fall of 2%. As illustrated in the Site Topography and 1m Contours (Figure 1-3) and the associated Topography Cross-Sections (Figure 1-4 - Figure 1-6), existing surface water flows generally traverse the site from east to west toward Gilberton Road, which defines the mine lease boundary. The local receiving catchment is currently characterised by light grass and scrub. Notably, no formal table drains, or cross-drainage structures are present on the existing access tracks to manage these surface flows.



Figure 1-3 Site Topography and 1m Contours

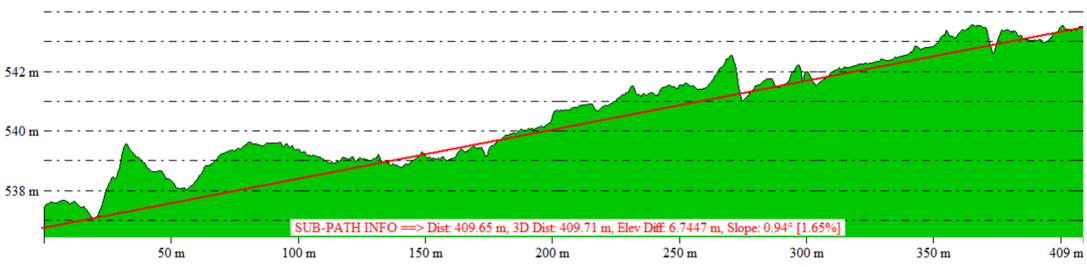


Figure 1-4 Section A (West to East)

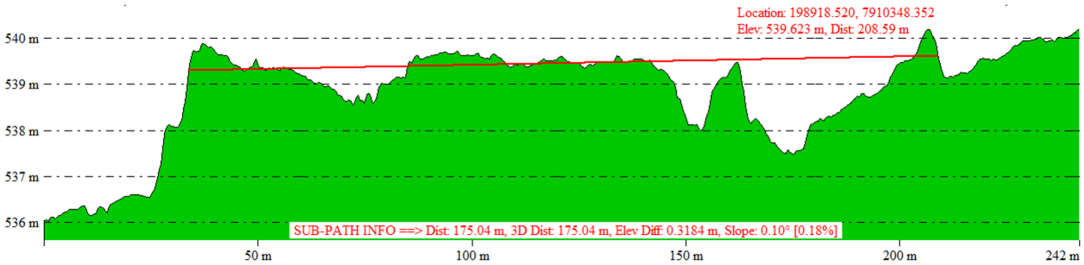


Figure 1-5 Section B (North to South)

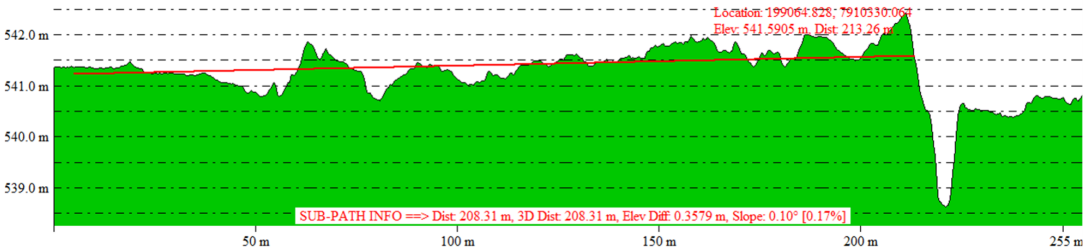


Figure 1-6 Section C (North to South)

2. STORMWATER MANAGEMENT OBJECTIVES AND REQUIREMENTS

This SWMP has been prepared in accordance with the following benchmarks and statutory requirements.

2.1 Design Criteria

2.1.1 Statutory Instruments and State Policies

— Environmental Protection (Water and Wetland Biodiversity) Policy 2019

— State Planning Policy 2017

— State Code 27 – Battery Storage Facility Development

2.1.2 Regional and Local Frameworks

— Etheridge Shire Planning Scheme (2025)

— Queensland Urban Drainage Manual (QUDM), Fourth Edition (2017)

— Far North Queensland Regional Organisation of Councils (FNQROC)

2.1.3 Technical Design Standards

— Australian Rainfall and Runoff (ARR) 2019 (Version 4.2)

— International Erosion Control Association (IECA) Best Practice Erosion and Sediment Control

— Water Sensitive Urban Design (WSUD)

2.2 Stormwater Runoff Objectives

The main objectives and requirements for the stormwater management are summarised below in accordance with State Code 27 – Battery Storage Facility Development, QUDM and Regional Councils:

— (PO16) Development minimises the disturbance of high-risk soils and manages the release of soil-based contaminants.

— (PO17) Development maintains the water quality of receiving waters, waterways and wetlands

— (PO18) Development prevents the release of contaminants to surface water or groundwater in the event of an incident, including a fire or explosion.

— (PO19) Development minimises interference with overland flow paths.

— For critical electrical infrastructure, flood immunity must be maintained to a 0.5% Annual Exceedance Probability (AEP) flood event with a freeboard of 600mm.

— Detention shall be provided to limit the 1% AEP pre-development peak discharge from the site.

2.3 Water Quality Objectives

The quality of stormwater leaving the developed site will be treated utilising WSUD assets and in accordance with FNQROC to achieve the following pollution reduction targets:

— 80% reduction in Total Suspended Solids (TSS)

— 60% reduction in Total Phosphorus (TP)

— 40% reduction in Total Nitrogen (TN)

— 90% reduction in Gross Pollutant (GP)

3. HYDROLOGICAL SUMMARY (EXISTING CONDITIONS)

3.1 Technical Baseline

A site-specific hydrological assessment was performed using a 1-metre resolution TUFLOW hydraulic model. The assessment focused on the 0.5% AEP event, as mandated by State Code 27 and QUDM for critical electrical infrastructure in *Kidston BESS Hydrology Report, 250711-CIV-REP-0001*. Parameters outlined in Table 3-1.

Table 3-1 Modelling Parameter Inputs

Parameter	Value
Catchment area	33 ha
Site area / BESS footprint	6.3 ha / 3 ha
Average catchment slope	Approx. 2%
Model Type	TUFLOW (1m resolution)
Design AEP	0.5% AEP
Initial loss / continuing loss	63.0 mm / 6.1 mm/hr
Surface roughness (Manning's n) per land type (Minimal Vegetation, Moderate Vegetation, Unsealed Roads, Gravel Hardstands)	0.04, 0.05, 0.022, 0.025
Range of durations tested	60 min, 180 min, 360 min, 720 min, 1440 min
Critical Duration	180-minutes

3.2 Peak Monitoring Results

Hydraulic modelling identified the 180-minute storm as the critical duration for the site. The peak parameters at the infrastructure boundary are summarised below in Table 3-2. Maximum depth and velocity map outputs for critical duration, 180-minutes, can be seen in Figure 3-1 and in further detail in Appendix A.

Table 3-2 Critical Duration Peak Results

Metric	Result
Peak Water Level	538.5 m AHD
Peak Velocity	0.63 m/s
Flow Type	Shallow sheet flow (<0.1 m)

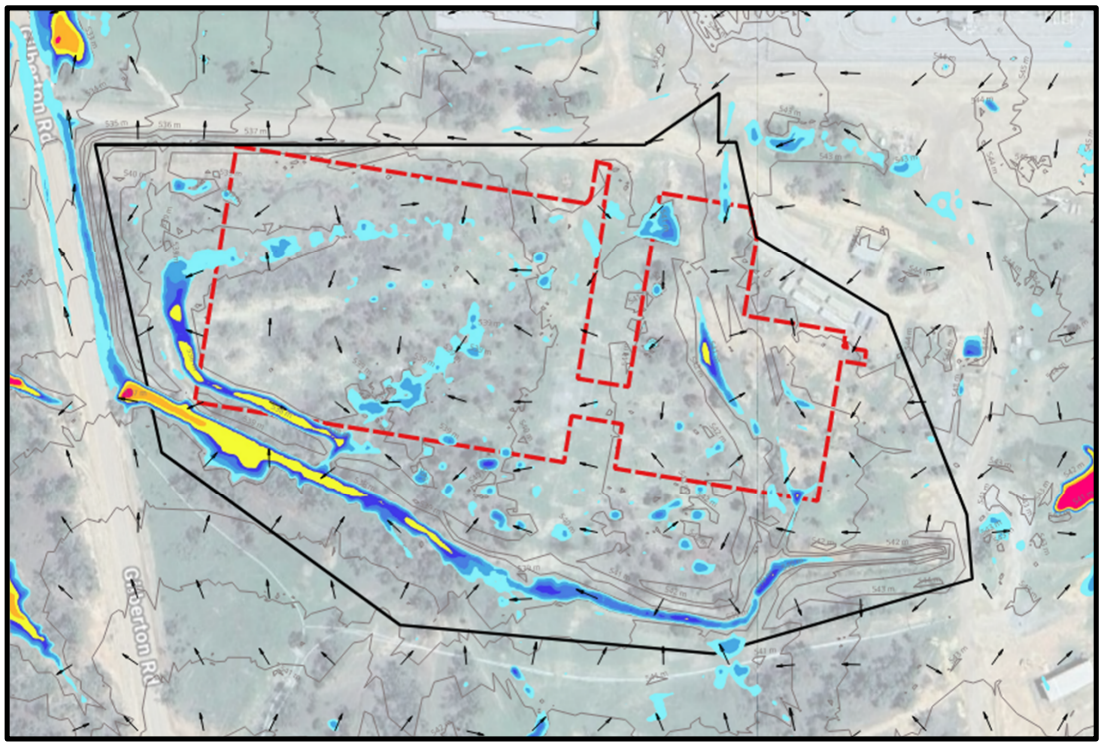


Figure 3-1 Flood Mapping for AEP 0.5% 180 min

4. STORMWATER MANAGEMENT STRATEGY

The stormwater management strategy outlined in this section ensures the Kidston BESS development will maintain the environmental values of the surrounding catchment while achieving high flood resilience. Management measures are designed in accordance FNQROC and the State Planning Policy 2017, ensuring that stormwater objectives for the Etheridge Shire are maintained throughout the project's lifecycle.

4.1 Potential Impacts

Activities associated with the construction and decommissioning of the 6.3-hectare BESS site have the potential to adversely impact local water quality and hydrology due to historical mining disturbance. The TUFLOW hydraulic model confirms that the site currently experiences shallow sheet flow (<0.1m) with a 2% slope and East to West drainage along an existing earth drain to the south of the site. Potential impacts include:

- Hydrological Changes: The introduction of impervious battery pads and upgraded 6m-wide access tracks will increase surface runoff and decrease soil infiltration, potentially altering the natural east-to-west drainage regime.
- Contamination Risk: Performance Outcome PO18 of State Code 27 requires the facility to prevent the release of contaminants to surface or groundwater in the event of an incident, including mineral oils from transformers or large volumes of contaminated fire-suppression water.
- Sediment Transport: Ground disturbance during earthworks can mobilise legacy mine soils, leading to increased turbidity in downstream receiving waters such as the Copperfield River.

4.2 Lawful Point of Discharge

The identified Lawful Point of Discharge (LPD) for the project is the western lease boundary, where runoff currently discharges in an earthen drain toward Gilberton Road shown in Figure 4-1. This road reserve is under the statutory control of the Etheridge Shire Council, satisfying the requirements for a lawful discharge location under QUDM Section 3.9.1.

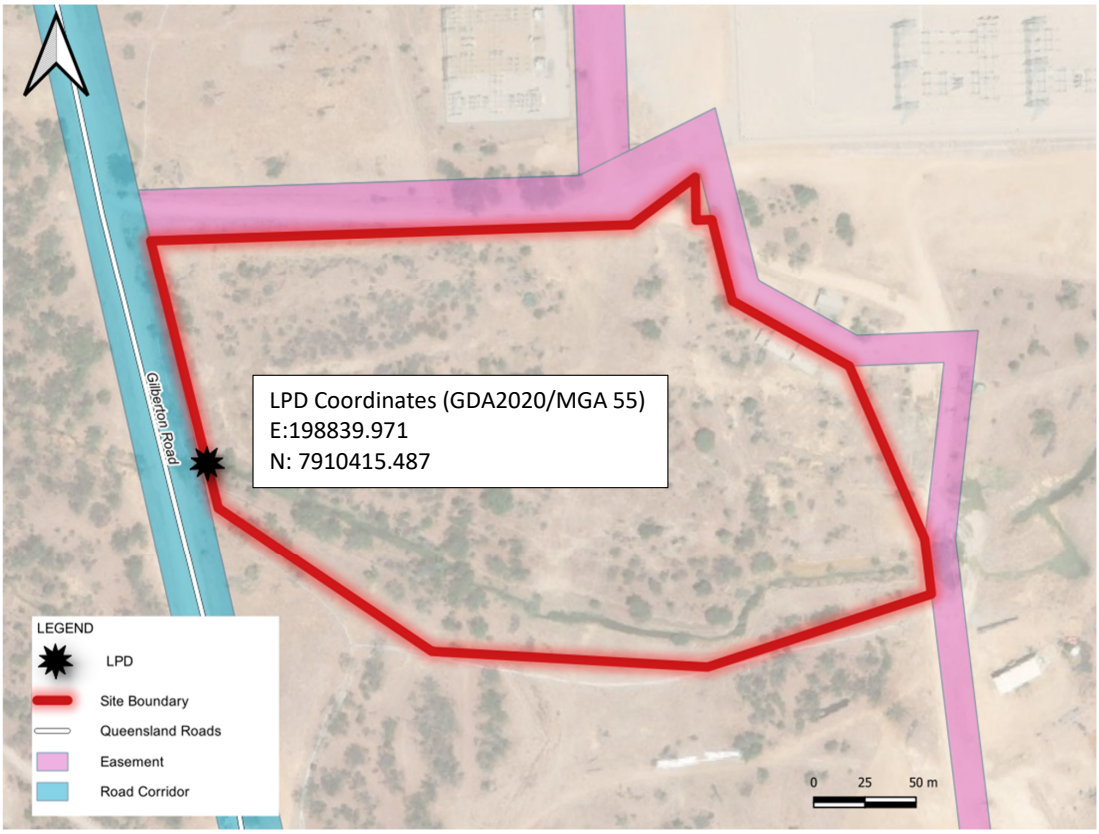


Figure 4-1 Pre-development Site Plan

The development is designed to maintain this existing drainage pattern, ensuring that the BESS platforms do not result in the unlawful concentration of flow or cause an actionable nuisance to neighbouring renewable assets within the Kidston Clean Energy Hub. Table 4-1 outlines LPD compliance.

Table 4-1 Lawful Point of Discharge Justification Table

Criterion (QUDM)	Assessment	Compliant?
Alteration of Flow Characteristics	The development will utilise a detention basin and vegetated swales to ensure post-development peak flow rates for the 1% AEP flood event do not exceed pre-development levels. By maintaining existing sheet flow patterns and preventing the concentration of runoff, the project avoids substantial damage or actionable nuisance to downstream properties.	✓
Statutory / Lawful Control	The identified discharge location is the western lease boundary reporting toward Gilberton Road. This corridor functions as a public road reserve under the statutory control of the Etheridge Shire Council, satisfying the requirement for discharge into a location under the control of a regulatory authority.	✓
Private Authority to Discharge	The proposed LPD is subject to confirmation by Etheridge Shire Council and verification that discharge to Gilberton Road reserve will not cause actionable nuisance, erosion, flooding, scour or adverse impacts to downstream land or infrastructure.	✓

4.3 Infrastructure Design and Flood Planning Level (FPL)

The project's flood immunity requirements are based on achieving compliance with the 0.5% AEP event, consistent with the regulatory guidelines outlined in Section 1.2. Hydraulic modelling has confirmed that the 180-minute storm represents the site's critical duration, producing the highest peak water levels across the development area. During the 0.5% AEP design event, the maximum modelled flood depth occurs in the south-western portion of the site, which is hydraulically downstream of the proposed BESS infrastructure, the modelled PWL at this location of RL 538.5 m AHD has been adopted as the design flood level for the purposes of setting hardstand levels. To ensure adequate flood immunity and operational resilience, a minimum freeboard allowance of 600 mm has been applied above the adopted PWL in accordance with standard industry practice. This results in the FPL for the BESS hardstand areas of RL 539.1 m AHD. This design approach ensures that essential electrical components remain protected under extreme rainfall conditions. Although the Etheridge Shire Planning Scheme (2025) recognises the 1% AEP as the Defined Flood Event (DFE), the adoption of the more conservative 0.5% AEP standard inherently satisfies and exceeds the local planning requirements for flood immunity.

5. STORMWATER DETENTION BASIN DESIGN

5.1 DRAINS Modelling

The urban drainage modelling software DRAINS is used to determine the detention volume required to limit the 1% AEP post-development runoff to its pre-development level.

5.2 Rainfall Data

The rainfall intensity data and temporal patterns required for the DRAINS model are extracted from the Bureau of Meteorology (BoM) website and the ARR Datahub and are based on 2016 Intensity Frequency Duration (IFD) rainfalls.

5.3 Loss Parameters

The IL/CL hydrological model was adopted in the DRAINS model. The loss parameters, adopted from the ARR Datahub, are as follows:

— Initial Loss (IL): 63 mm

— Continuing Loss (CL): 6.1 mm/h

5.4 Catchment Time of Concentration

The time of concentration for pre-development scenario was calculated using Friend's equation, which resulted in a time of 30 minutes.

The time of concentration for post-development scenario was based on the assumption of minimum 5 minutes for effective impervious area and 15 minutes for pervious area. Additional pipe and channel flow time were added, based the estimation using the kerb, pipe and channel flow time chart by Argue (1986), as stated in QUDM Section 4.6.7, and the site topography and preliminary site layout.

The resultant time of concentration for post-development scenario is 8 minutes for paved area and 23 minutes for grassed area.

5.5 Catchment Data and DRAINS Model Layout

The following impervious and pervious area percentages are tabulated in Table 5-1.

Table 5-1 Catchment Data for DRAINS

	Effective Impervious Area (%)	Pervious Area (%)
Pre-development	0	100
Post-development	90	10

The DRAINS model layout was shown in Figure 5-1 below.

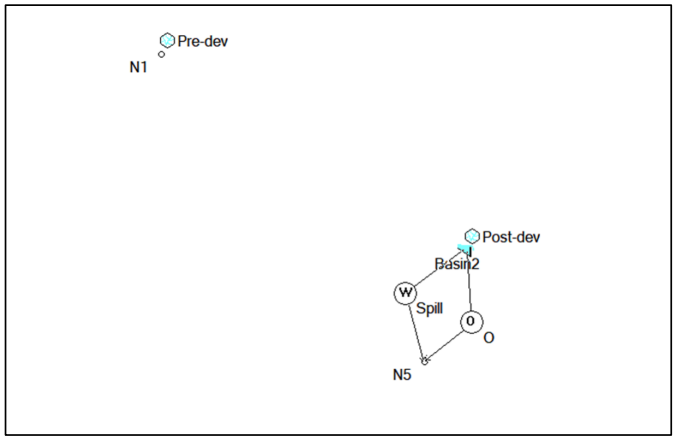


Figure 5-1 DRAINS Model Layout

5.6 Results

The DRAINS model result is shown in Figure 5-2 below.

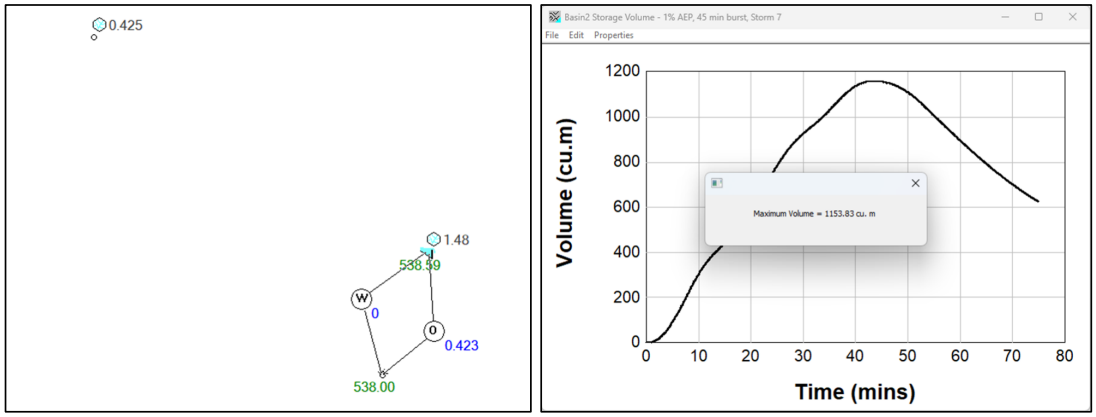


Figure 5-2 1% AEP DRAINS Model Results

The results show that a detention basin with a minimum of 1200 m^3 and a 510mm low flow orifice can provide sufficient storage to limit the post-development runoff to its pre-development level.

6. STORMWATER RUNOFF QUALITY MANAGEMENT

A MUSIC X model was established in accordance with the drainage strategy proposed for the site to estimate the treatment efficiency of the proposed WSUD measures. The analysis is based on Healthy Land and Water MUSIC Modelling Guideline[1] and FNQROC Development Manual D5[2] for the estimated generation of pollutant loads. The MUSIC X model is developed to manage the stormwater runoff quality discharged. According to the FNQROC manual D5, the pollutant reduction rates are identified in Section 2.3.

In addition to the pollution reduction, the WSUD asset should also be able to provide 125 µm sediment capture efficiency of 95%.

6.1 Hydrocarbon Management

The detailed design phase will incorporate targeted measures to minimise the mobilisation and discharge of hydrocarbons, particularly oils, from hardstand and plant areas. Potential hydrocarbon sources for the development include transformer oil from substation power transformers, lubricants and insulating oils associated with switchgear and electrical equipment, and minor residues from equipment and maintenance activities within the BESS yard.

In accordance with industry standard practices in Queensland, oil-filled high-voltage (HV) transformers within the BESS yard will be installed within dedicated impervious bunded areas, or equivalent oil containment systems, designed to capture and contain potential oil leaks, spills and contaminated runoff. Collected liquids from the transformer bunds will be directed to a controlled drainage system incorporating oil-water separation and/or isolation controls to prevent untreated discharge to the stormwater system.

Final bund sizing, storage capacity and drainage treatment requirements will be confirmed during the detailed design phase, having regard to the transformer oil inventory, rainfall and incident response requirements, and in accordance with relevant regulatory requirements, Australian Standards and applicable utility/operator standards.

6.2 Sediment Pond Sizing

The size of the sediment pond is based on the WSUD Engineering procedures produced by Melbourne water and CSIRO[3]. The following assumptions, showing in Table 6-1, were made to estimate the sediment pond footprint. However, the footprint is also influenced by the stormwater detention requirement, determined in the section above.

Table 6-1 Sediment Pond Assumptions

Sediment Storage Zone Depth (mm)	300
Settling Zone (mm)	600
Freeboard (mm)	300
Total Depth (mm)	**1200**

[1] MUSIC Guidelines, Heathy Land and Water Limited (2018)
[2] Stormwater Quality Management Design Manual D5, Far North Queensland Regional Organisation of Councils (2023)
[3] WSUD Engineering Procedures: Stormwater, Melbourne Water, CSIRO Publishing (2005)

Length (m)	78
Width (m)	34
Batter	1-in-5
Footprint (m^2)	**2652**
Permanent Water Volume (m^3)	**476**
Extended Detention Volume (m^3)	**1208**

The following equation from the CSIRO guideline was adopted to estimate the sediment removal efficiency:

$$R = 1 - \left(1 + \frac{1}{n} \times \frac{v_s}{Q/A} \times \frac{(d_e + d_p)}{(d_e + d^*)}\right)^{-n}$$

- Q is the 4EY discharge rate
- A is the pond surface area
- v_s is the settling velocity of target sediment, which is assumed to be 1.6 m^3/ha for developed catchment
- d_e is the extended detention depth above the permanent pond level
- d_p is the depth of the permanent pool
- d^* is the lower of 1.0 or d_p
- n is the turbulence parameter, where $n = \frac{1}{1-\lambda}$
  - λ is the hydraulic efficiency, which is 0.26 for the 3:1 length to width ratio of the basin

The resultant sediment removal efficiency is 99.62% for the proposed based sediment pond.

The following equation were adopted to confirm the sufficient permanent pond volume is provided:

$$S_t = C_a \times R \times L_0 \times F_r$$

- C_a is the contributing catchment area, which is 2.699 ha in this case;
- R is the capture efficiency, calculated from the previous equation;
- L_0 is the sediment loading rate, which is the same as v_s in the previous equation.
- F_r is the desired clean-out frequency, assumed to be 5 years.

The resultant permanent pond volume required is 21.26 m^3. However, based on the proposed pond configuration and to meet the stormwater detention requirements, the permanent pond volume is approximately 476 m^3 which satisfies the sediment control requirement calculated.

6.3 MUSIC X Model

MUSIC X model has been run using the climate template for Einasleigh Township station (030014) located in the far north Queensland Region, using minimum 10 years of 6-minute time step continuous simulation. The climate information can be found in Table 6-2.

Table 6-2 Climate Template Information

Rainfall Station	Period	Period Mean Annual Rainfall (mm)	Mean Annual Potential Evapotranspiration (mm)
030014 Einasleigh Township	1995-2006	602	1740

The MUSIC model layout is shown in Figure 6-1. The oil separator is not modelled due to MUSIC X being unable to model hydrocarbon.

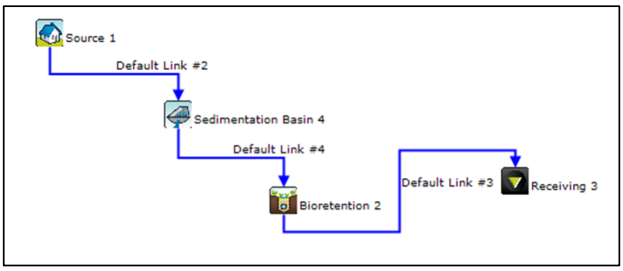


Figure 6-1 MUSIC X Model Layout

6.4 MUSIC X Model Results

Results show the proposed treatment devices are sufficient to meet the water quality targets.

MUSIC modelling indicates a sediment basin with a 1950 m^3 capacity including settling zone and storage zone, and a 10 m^2 rain garden, is sufficient to meet the pollutant removal targets. However, due to the nature of the development, an oil containment system is also required before discharging any runoff into the sediment pond.

MUSIC X Model results are summarised in Table 6-3.

Table 6-3 MUSIC X Model Results

Pollutant	Treatment Target (% Removed)	Removal Achieved (% Removed)
Total Suspended Solids	80	89.86
Total Phosphorus	60	64.21
Total Nitrogen	40	40.39
Gross Pollutants	90	100.00

The calculations showed that a minimum basin capacity of 1950 m^3, with 1-in-5 batter and 300 mm permanent water level, provides sufficient volume for the purposes of both stormwater detention and sediment capturing. A 10 m^2 rain garden and an oil containment system, along with the basin, will be required to meet the WSUD standard as outlined in the FNQROC Manual.

6.5 Concept Sediment Basin Layout

The concept sediment basin layout shown herein is indicative only and will be refined and confirmed during the detailed design phase of the project. Based on the results of the DRAINS and MUSIC modelling, a minimum basin storage volume of 1,950 m^3 is required to satisfy the project's stormwater quality and sediment control objectives.

Considering ecological constraints, existing site topography, and established drainage paths, it is proposed to implement two detention basins across the site. An initial assessment of a single-basin configuration determined that the available footprint was insufficient to achieve the required storage capacity, as the incorporation of 1V:5H batters would encroach upon existing natural drainage corridors.

Accordingly, two detention basins are proposed, located to the west and south of the BESS yard. This arrangement maintains the existing drainage regime while minimising environmental impacts. The combined storage volume of both basins meets the detention requirements outlined in Section 6.2.

Refer to Figure 6-2 below, and Appendix B (Stormwater Layout Plan) for the proposed detention basin locations.

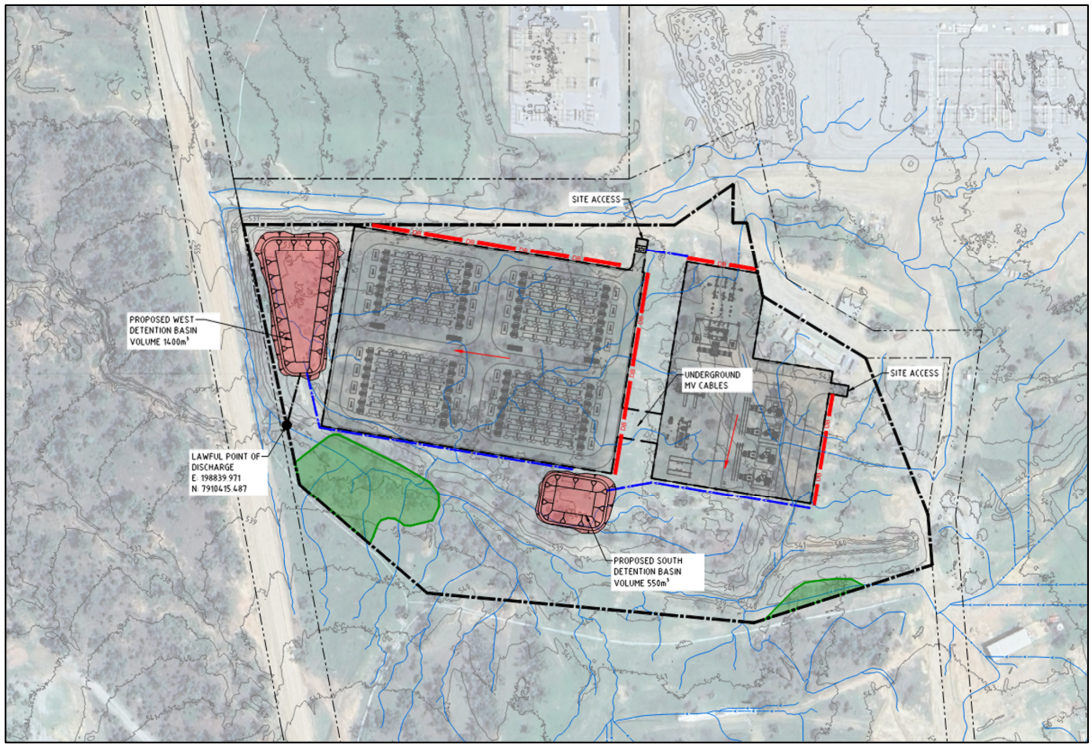


Figure 6-2 Sediment Basin Layout

7. ENVIRONMENTAL & WATER QUALITY MANAGEMENT

7.1 Erosion and Sediment Control

A site-specific Erosion and Sediment Control Plan (ESCP) will be prepared by a suitably qualified person prior to the commencement of operational works.

Erosion & Sediment Control Summary is outline in Table 7-1. Key ESC strategies for the project include:

- Drainage Control: Diversion of clean up-slope stormwater runoff around disturbed work areas and stockpiles to prevent contamination and minimise erosion.
- Erosion Control: Minimising the extent of ground disturbance and implementing progressive rehabilitation to achieve a minimum of 70% ground cover as soon as practicable.
- Sediment Control: Installation of sediment fences or fabric-wrapped field inlet traps downslope of all disturbed areas to treat sheet flow before it exits the mine lease boundary.
- Dust Control: Use of water trucks during construction and decommissioning activities to suppress dust, with scheduling informed by local meteorological forecasts.

Table 7-1 Erosion & Sediment Control Summary

ESC Category	Control	Purpose
Drainage	Diversion drains	Separate clean & dirty water
Erosion	Progressive stabilisation	Reduce soil exposure
Sediment	Silt fences/filters	Treat sheet flow
Dust	Water carts	Minimise airborne sediment

8. CONCLUSION AND RECOMMENDATIONS

The Stormwater Management Plan (SMP) prepared for the pre-development assessment establishes the hydrological and stormwater quality baselines for the Kidston BESS project. To comply with State Code 27 and Etheridge Shire Council requirements during the operational phase, the following management measures are recommended:

— The model also indicates a 0.5% AEP flood level of approximately 538.5 m AHD. To maintain adequate freeboard and ensure effective drainage during major storm events, Flood Planning Level of 539.1m AHD are recommended for the design levels for the development.

— To limit post-development discharge from the project site to the pre-development 1% AEP flow rate, two detention basins with a combined storage capacity of approximately 1,950 m^3 and a 510 mm diameter outlet orifice are recommended to provide sufficient volume for stormwater detention and sediment capture. Due to ecological constraints and site topography, a two-basin arrangement is proposed, with the final configuration to be confirmed during detailed design. In addition, a 10 m^2 bioretention rain garden and oil containment system in form of appropriately bunded transformer area should be incorporated into the design to achieve the stormwater quality objectives and satisfy the requirements of the FNQROC Development Manual.

— The preparation of the Erosion and Sediment Control Plan should include measures to minimise environmental impacts through effective drainage, erosion, sediment and dust controls. Clean stormwater will be diverted away from disturbed areas, ground disturbance will be limited and progressively rehabilitated, sediment controls will be implemented to treat runoff before it leaves the site, and dust will be suppressed using water trucks in consideration of prevailing weather conditions.

9. REFERENCES

ANZECC & ARMCANZ, 2000, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, National Water Quality Management Strategy Paper No. 4, Australian and New Zealand Environment and Conservation Council & Agriculture and Resource Management Council of Australia and New Zealand, Canberra, ACT.

BALL J, BABISTER M, NATHAN R, WEEKS W, WEINMANN E, RETALLICK M, AND TESTONI I (eds), 2019, *Australian Rainfall and Runoff: A Guide to Flood Estimation*, Version 4.2, Commonwealth of Australia (Geoscience Australia), Barton, ACT.

DEPARTMENT OF ENVIRONMENT AND HERITAGE PROTECTION, 2009, *Queensland Water Quality Guidelines*, Version 3 (re-published 2013), Queensland Government, Brisbane, QLD.

DEPARTMENT OF ENVIRONMENT AND SCIENCE (DES), 2021, *State Planning Policy 2017 - State Interest Water Quality: Supplementary Implementation Guideline*, Queensland Government, Brisbane, QLD.

DEPARTMENT OF INFRASTRUCTURE, LOCAL GOVERNMENT AND PLANNING (DILGP), 2017, *State Planning Policy July 2017*, Queensland Government, Brisbane, QLD.

DEPARTMENT OF STATE DEVELOPMENT, INFRASTRUCTURE AND PLANNING, 2025, *Planning guideline - State code 27: Battery storage facility development*, Queensland Government, Brisbane, QLD.

ETHERIDGE SHIRE COUNCIL, 2025, *Etheridge Shire Planning Scheme*, Etheridge Shire Council, Georgetown, QLD.

FAR NORTH QUEENSLAND REGIONAL ORGANISATION OF COUNCILS (FNQROC), 2023, *FNQROC Development Manual: Design Manual D5 – Stormwater Quality Management*, Version 05/23, FNQROC, Cairns, QLD.

FYFE PTY LTD, 2026, *Kidston Battery Energy Storage System Hydrology Report*, 250711-CIV-REP-0001_0 (Ref: 250711-CIV-REP-0001 Rev 0), Prepared for Genex Power Pty Ltd.

INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA, QUEENSLAND (IPWEAQ), 2017, *Queensland Urban Drainage Manual (QUDM)*, Fourth Edition, IPWEAQ, Brisbane, QLD.

INTERNATIONAL EROSION CONTROL ASSOCIATION (IECA) AUSTRALASIA, 2008, *Best Practice Erosion and Sediment Control (Book 2)*, IECA Australasia, Picton, NSW.

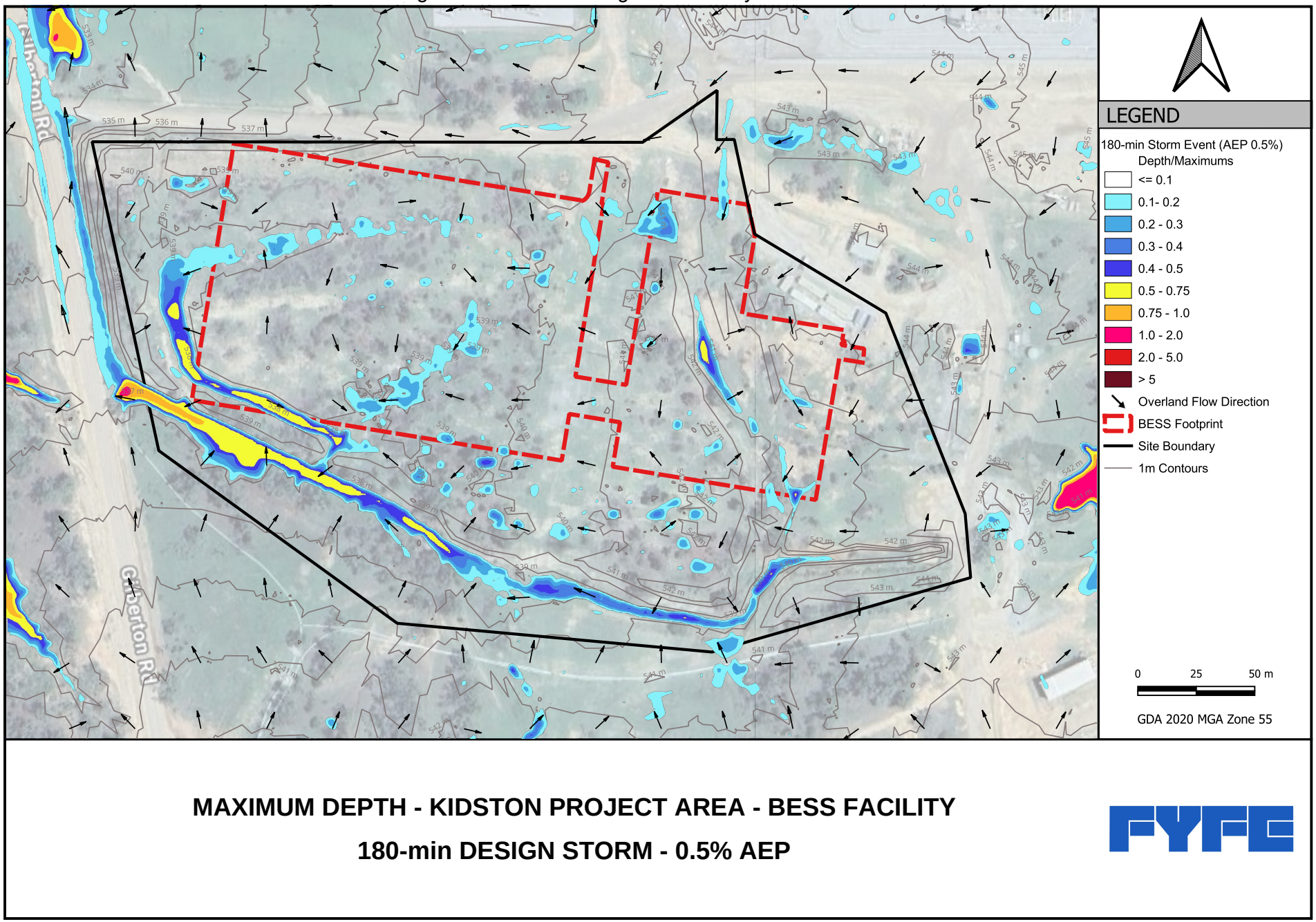
NGH PTY LTD, 2025, *Kidston BESS Draft Project Description V2*, 250711, Prepared for Genex Power.

QUEENSLAND GOVERNMENT, 2019, *Environmental Protection (Water and Wetland Biodiversity) Policy 2019*, Subordinate Legislation under the *Environmental Protection Act 1994*, Queensland Government, Brisbane, QLD.

QUEENSLAND GOVERNMENT, 2024, *State Code 27: Battery Storage Facility Development*, State Development Assessment Provisions (SDAP), Queensland Government, Brisbane, QLD.

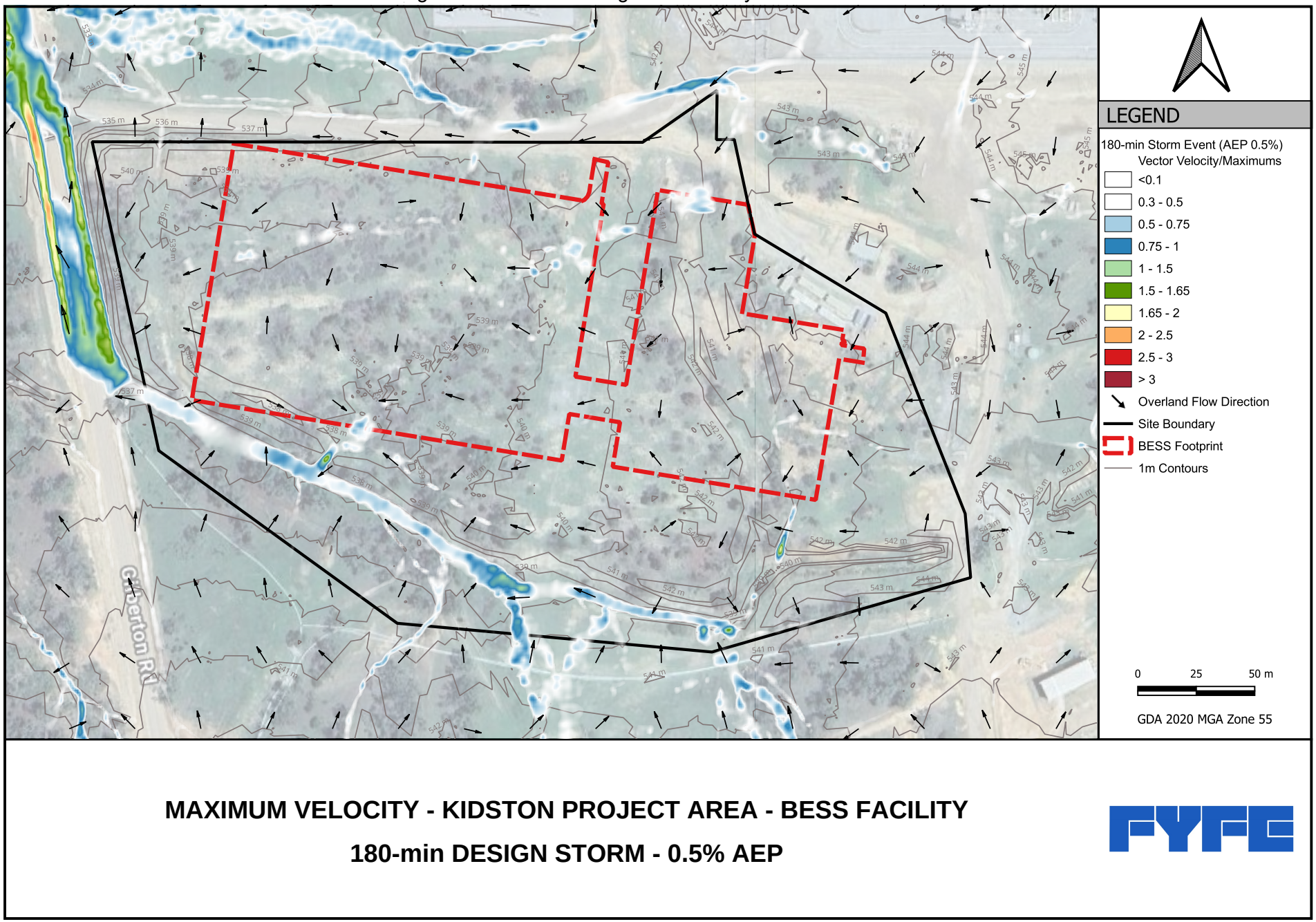
APPENDIX A
MAXIMUM DEPTH & VELOCITY FOR CRITICAL DURATION

VALUE THROUGH INTEGRATION



MAXIMUM DEPTH - KIDSTON PROJECT AREA - BESS FACILITY

180-min DESIGN STORM - 0.5% AEP

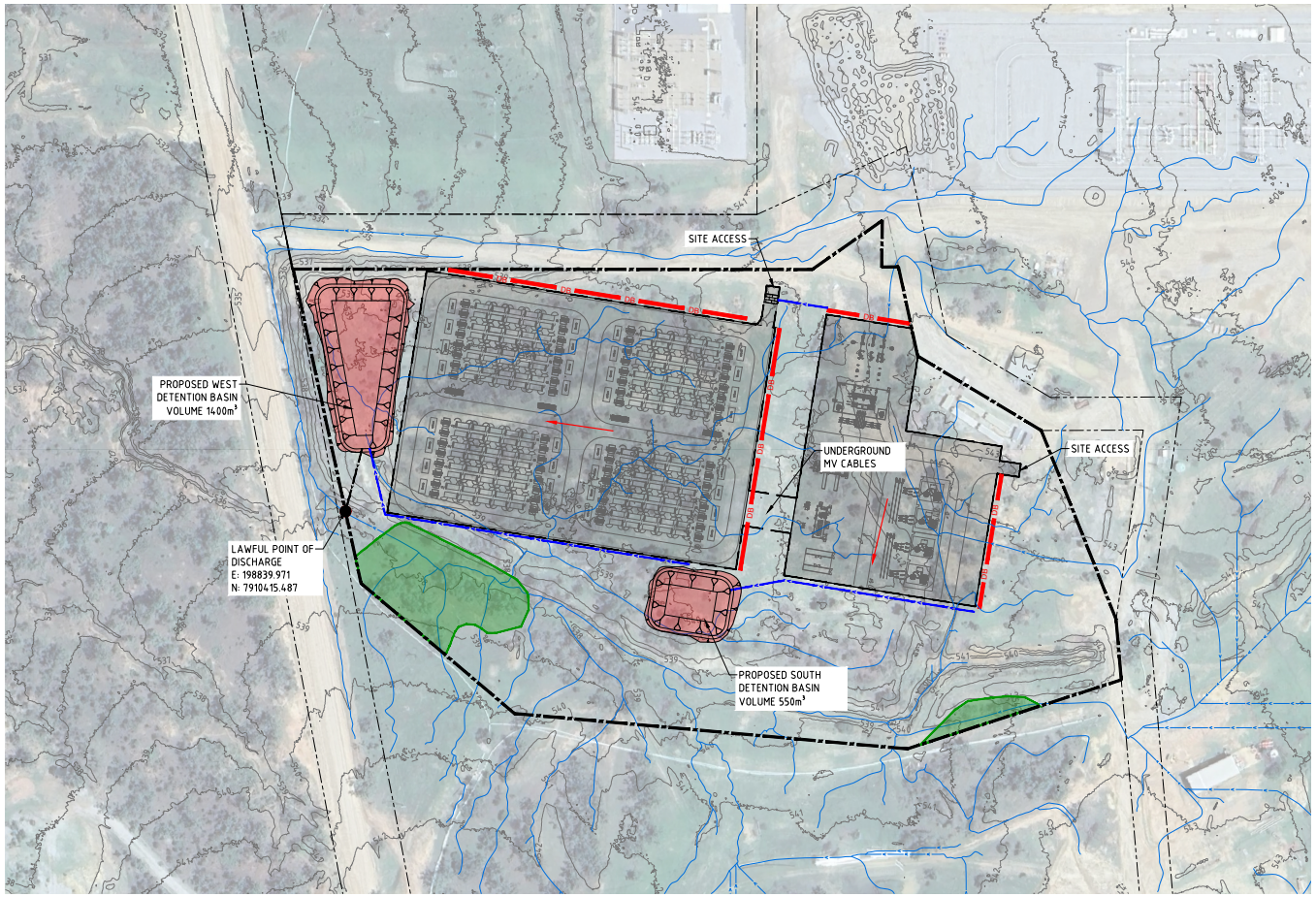


MAXIMUM VELOCITY - KIDSTON PROJECT AREA - BESS FACILITY

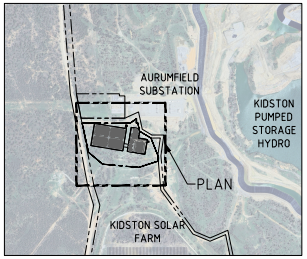
180-min DESIGN STORM - 0.5% AEP

APPENDIX B
SITE STORMWATER LAYOUT DRAWING

VALUE THROUGH INTEGRATION



PLAN - KIDSTON BATTERY ENERGY STORAGE SYSTEM
SCALE 1:1000



LOCATION PLAN

LEGEND

- BESS FOOTPRINT
- SITE BOUNDARY
- HARDSTAND - MINIMUM FFL (538.5 mAHD)
- 543 1m CONTOUR - NATURAL SURFACE
- DCDB / PROPERTY BOUNDARY
- PROPOSED SWALE DRAIN
- PROPOSED OUTLET
- CROSS DRAINAGE
- PROPOSED BASINS
- DB DIVERSION BERM
- OVERLAND FLOW
- FALL CROSSFALL DESIGN
- REMNANT VEGETATION

ISSUED FOR CONCEPT PURPOSES ONLY

0 25 50 75 100
SCALE 1:1000 (A1) METRES

REV No	DESCRIPTION	DRN	CHK'D	ENG	APPR'D	DATE
0	ISSUED FOR INFORMATION - CONCEPT DESIGN	ELB	TJS	JAL	NKT	26/05/26

DOC No. | DESCRIPTION
REFERENCE DOCUMENTS

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Genex

SCALE:	1:1000	
DRAWN	ELB	26/05/26
CHECKED	TJS	26/05/26
ENGINEER	JAL	26/05/26
APPROVED	NKT	26/05/26
CLIENT	-	-
	A1	

KIDSTON
BATTERY ENERGY STORAGE SYSTEM
STORMWATER MANAGEMENT
LAYOUT PLAN

DRG. No. 250711-CIV-DWG-0001 Rev 0

Appendix M Noise Impact and Vibration Assessment

Kidston BESS

Noise and Vibration Impact Assessment

S7369C4

April 2026

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Kidston BESS
Noise and Vibration Impact Assessment
S7369C4
April 2026

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Document Title	: Kidston BESS Noise and Vibration Impact Assessment
Document Reference	: S7369C4
Date	: April 2026
Author	: Rhys Carpenter, MAAS
Reviewer	: Simon Moore, MAAS

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1 INTRODUCTION

A noise and vibration impact assessment has been completed for the proposed Kidston BESS (the **Project**). The Project will consist of a battery energy storage system (**BESS**), with a capacity of up to 250MW/1250MWh, and associated grid connection infrastructure.

The assessment has considered the noise and vibration generated by the construction, operation, maintenance, and decommissioning of the Project in accordance with the requirements of version 3.5 of the *State Development Assessment Provisions*, specifically, *State Code 27: Battery storage facility development* (**State Code 27**).

The location of the Project with respect to the nearby noise sensitive receivers can be seen in Figure 1.

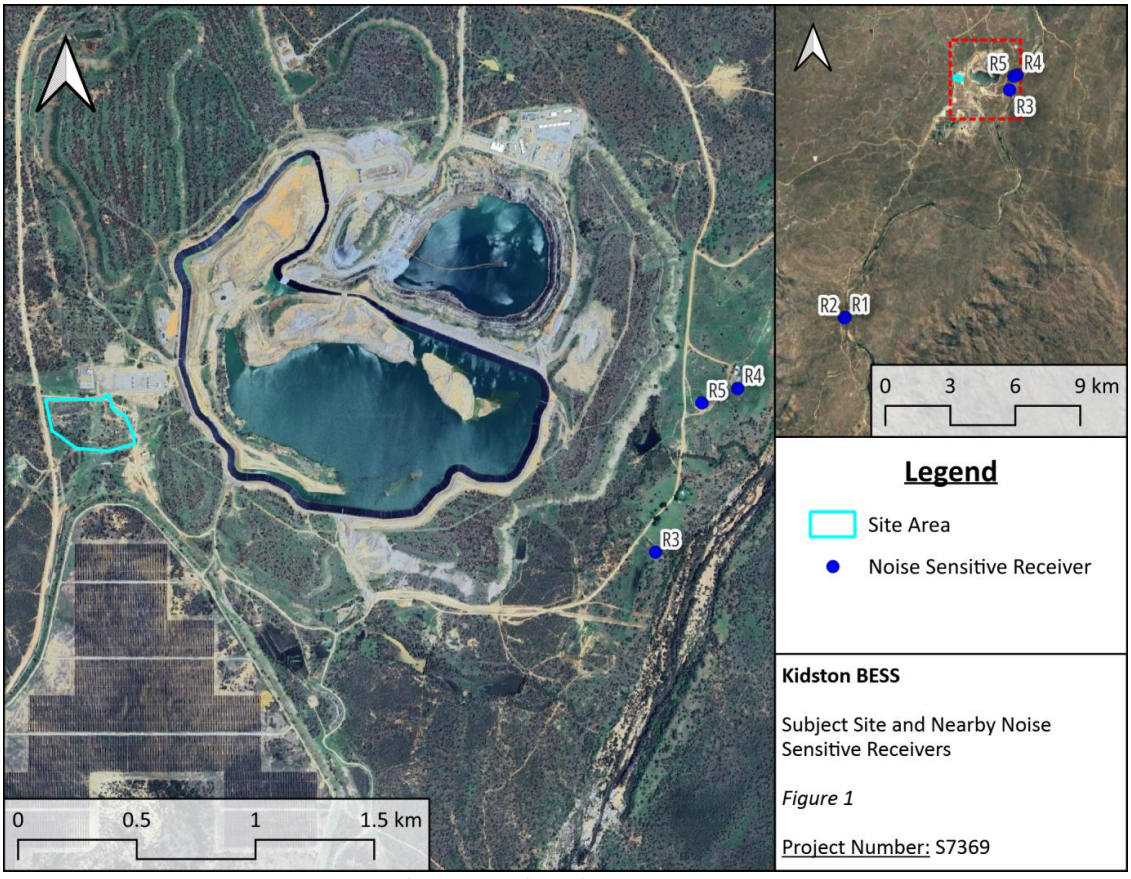


Figure 1: Subject Site and Nearby Noise Sensitive Receivers

2 CRITERIA

The performance outcomes (**POs**) of State Code 27 have been reviewed and those related to noise reproduced below.

> ***PO20*** *Construction, operation, maintenance and decommissioning meets the acoustic quality objectives for sensitive receptors on or adjacent to the site identified in the Environment Protection (Noise) Policy 2019.*
>
> ***PO21*** *Construction, operation, maintenance and decommissioning does not cause vibration impacts that adversely affect the operational performance or sensitive receptors within or adjacent to the site.*

2.1 PO20 – Noise

PO20 of State Code 27 references the acoustic quality objectives of the *Environmental Protection (Noise) Policy 2019* (the **Policy**), which have been included below.

Table 1: Acoustic Quality Objectives

Time of Day	Location	Acoustic quality objectives [dB(A)]			Environmental Value
		$L_{Aeq,adj,1hr}$	$L_{A10,adj,1hr}$	$L_{A1,adj,1hr}$	
Daytime and evening	Outdoors	50	55	65	Health and wellbeing
	Indoors	35	40	45	Health and wellbeing
Night-time	Outdoors	37*	42*	47*	Health and wellbeing
	Indoors	30	35	40	Health and wellbeing, in relation to the ability to sleep

* Outdoor acoustic quality objectives are not specified for the night-time. These have been assumed based on a 7 dB facade noise reduction in accordance with the recommendation of the *Department of Environment, Science and Innovation* in their document *Noise and vibration – EIS information guideline*.

The acoustic quality objectives represent acceptable noise levels to be achieved at sensitive receptors. The outdoor levels are considered the most appropriate for this assessment and therefore these acoustic quality objectives are the objectives that are being considered in this assessment. As BESS facilities typically produce a steady state noise, there will be little variance between the L_{Aeq}, L_{A10}, and L_{A1} descriptors. Therefore, where compliance can be shown with the L_{Aeq} limits, it is considered that compliance with the L_{A10} and L_{A1} descriptors will also be achieved.

State Code 27 also references the *Department of State Development, Infrastructure and Planning* document, *Planning guideline State code 27: Battery storage facility development* (the **Planning Guideline**). The Planning Guideline requires the Project to:

> *Demonstrate background ambient noise on nearby sensitive receptors is not impacted by complying with 30-35 dB(A) at the outdoor facade or, if the background noise is very low (e.g. rural areas) – background noise + 5 dB(A).*

The above is considered to be similar to the requirement of the Policy to limit background creep. It is understood that based on the advice from SARA, background noise monitoring is not required for the Project. Therefore, where it can be seen that the Project achieves a level of 30-35 dB(A) outdoors, it is considered that background ambient noise will not be impacted at the nearby sensitive receptors.

2.2 PO21 – Vibration

No specific vibration criteria are provided by State Code 27 or the Planning Guideline. In the absence of any relevant Australian standards, reference is made to the *German Standard DIN 4150-3:1999-02 Structural vibration – Part 3: Effects of vibration on structures* (**DIN 4150**) and the *British Standard BS 5228-2:2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration* (**BS 5228**). These standards are noted to be commonly adopted throughout Australia for the assessment of potential vibration impacts. Both standards use the peak particle velocity (**PPV**) as the assessment metric.

DIN 4150 provides vibration criteria which are designed to ensure that there is no cosmetic damage to structures. These criteria have been reproduced in Table 2.

Table 2: Vibration Limits for Cosmetic Damage to Buildings

Type of Structure	Guideline values for velocity, v_i, in mm/s			
	Vibration at the foundation at a frequency of			Vibration at horizontal plane* of highest floor at all frequencies**
	1Hz to 10Hz	10Hz to 50Hz	50Hz to 100Hz	
Buildings used for commercial purposes, industrial buildings, and buildings of similar design	20	20 to 40	40 to 50	40
Dwellings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15
Structures that, because of their particular sensitivity to vibration, cannot be classified under the above and are of great intrinsic value (e.g. listed buildings under preservation order)	3	3 to 8	8 to 10	8
* This is applicable at the ceiling of the highest floor. ** These levels will reduce by up to 75% where the vibration could result in resonance in the structure.				

BS 5228 provides guidance on the human response to vibration. Different thresholds are provided that indicate the typical perception to various levels of vibration. These have been reproduced in Table 3.

Table 3: Human Response to Vibration

Vibration Level	Effect
0.14 mm/s	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower frequencies, people are less sensitive to vibration.
0.3 mm/s	Vibration might be just perceptible in residential environments.
1.0 mm/s	It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents.
10 mm/s	Vibration is likely to be intolerable for any more than a very brief exposure to this level.

A PPV of 0.3mm/s is therefore considered to be a suitable vibration limit to maintain human comfort and amenity as this is the threshold where vibration is typically perceptible in a residential environment.

3 ACTIVITIES AND EQUIPMENT

The expected activities and equipment present on site for the life of the Project can be seen in the following sections.

3.1 Construction

The construction of the Project is expected to occur over a number of phases which have been summarised in Table 4. The equipment expected to be in use during each phase and the assumed quantities have also been included.

Table 4: Proposed Construction Phases

Construction Phase	Proposed Equipment	Assumed Quantity
Earthworks	Excavator	4
	Dozer	2
	Tipper Truck/Articulated Dump Truck	4
	Roller/Compactor	2
	Grader	2
	Bus	2
	Light Vehicles	10
Foundations (if not prefabricated)	Concrete Mixer	2
	Concrete Truck	2
	Bus	1
	Light Vehicles	6
Equipment Delivery and Installation	Heavy Vehicle	6
	Crane	4
	Forklift	1
	Telehandler	1
	Bus	2
	Light Vehicles	10

3.2 Operation

The Project is proposed to have a capacity of up to 250MW/1250MWh and will contain the equipment shown in Table 5.

Table 5: Proposed Equipment Quantities

Equipment	Capacity	Quantity
Battery Unit	5.6MWh	160
Inverter/PCS	4.6MVA	64
MV Transformer	8MVA	32
Grid Transformer	240MVA	1

3.3 Maintenance

The site will typically be unmanned, though regular inspections will be conducted, likely monthly. Maintenance works will be conducted by approximately two people at a time and will include the activities shown in Table 6.

Table 6: Proposed Maintenance Activities

Maintenance Activities	Typical Equipment	Assumed Quantity
Vegetation Management	Lawnmower	1
	Line Trimmer (Whipper Snipper)	1
	Blower/Vacuum	1
	Light Vehicles	2
Cleaning	Power Washer	1
	Water Pump	1
	Light Vehicles	2
Standard Maintenance	Hand Tools	2
	Light Vehicles	2
Major Maintenance	Heavy Vehicle	1
	Truck Mounted Crane	1
	Forklift/Crane	1
	Light Vehicles	6

3.4 Decommissioning

The equipment expected to be required during decommissioning is shown in Table 7.

Table 7: Proposed Decommissioning Activities

Typical Equipment	Assumed Quantity
Crane	2
Telehandler	1
Excavator	1
Heavy Vehicles	6
Light Vehicles	6

4 NOISE ASSESSMENT

Potential noise impacts have been assessed across all stages of the Project. The assessment has been conducted against the criteria outlined in Section 2.

4.1 Noise Model

A noise model for the Project has been created in the *SoundPLANnoise* noise modelling software. The noise model has used the CONCAWE noise propagation model, which considers various factors that influence the propagation of noise, as required by the Planning Guideline, including:

- The distance between the noise sources and receivers.
- Ground effects.
- Effects of terrain, including any shielding provided by terrain.
- Atmospheric absorption.
- Meteorological conditions.

The predictions have been made using CONCAWE weather category 6, the typical worst-case noise enhancing weather conditions. Weather category 6 corresponds to a moderately well-developed ground-based temperature inversion and wind in the direction from the Project to each noise sensitive receptor. The CONCAWE noise propagation model has been specifically chosen as it allows for the consideration of both downwind and temperature inversion conditions, which the Planning Guideline requires to be considered.

4.2 Noise Sources

The predictions have considered the activities and equipment noted in Section 3. Sound power levels for each individual activity and piece of equipment have been determined and can be seen in Appendix A. The operational noise from the Project has considered all equipment operating at 100% fan speed. Calculations have been based on the provided spectral data for the inverter and battery units.

As the specific construction, maintenance, and decommissioning procedures have not yet been determined, the predictions have considered an indicative quantity of equipment and activities all operating continuously and concurrently. The overall sound power levels for each phase of construction, maintenance, and decommissioning are shown in Table 8.

Table 8: Overall Sound Power Levels

Project Stage	Phase	Overall Sound Power Level
Construction	Earthworks	121 dB(A)
	Foundations	116 dB(A)
	Equipment Delivery & Installation	114 dB(A)
Maintenance	Vegetation Management	105 dB(A)
	Cleaning	103 dB(A)
	Standard Maintenance	107 dB(A)
	Major Maintenance	109 dB(A)
Decommissioning	Decommissioning	114 dB(A)

4.3 Predicted Noise Levels

The noise levels at the nearby noise sensitive receivers have been predicted for each stage of the Project. Before comparing the predicted noise levels to the acoustic quality objectives, the Policy requires the noise level to be adjusted for tonal character, or impulsiveness. It is noted that, in accordance with the Policy, the L_{Aeq} descriptor is not required to be adjusted for impulsiveness. Due to the large separation distances between the Project and the noise sensitive receivers, it is not expected that a (high frequency) tonal or impulsive character will be distinguishable from the overall noise level. It is therefore considered that no adjustments are required to the predicted noise levels. The outdoor predicted noise levels can be seen in Table 9.

Table 9: Predicted Noise Levels at Noise Sensitive Receivers

Project Stage	Phase	Predicted Noise Level at Noise Sensitive Receiver [dB(A)]				
		R1	R2	R3	R4	R5
Construction	Earthworks	<15	<15	34	23	23
	Foundations	<15	<15	29	18	17
	Equipment Delivery & Installation	<15	<15	28	16	16
Operation	Operation	<15	<15	23	<15	<15
Maintenance	Vegetation Management	<15	<15	19	<15	<15
	Cleaning	<15	<15	16	<15	<15
	Standard Maintenance	<15	<15	21	<15	<15
	Major Maintenance	<15	<15	22	<15	<15
Decommissioning	Decommissioning	<15	<15	27	16	16

The results in the above table indicate that the predicted noise levels will not exceed the more onerous night-time criterion of 37 dB(A) across all stages of the Project. It is therefore considered that there will be no noise impacts on the nearby noise sensitive receivers.

Consideration has also been given to the background ambient noise levels, as required by the Planning Guideline. The predicted noise levels are noted to be below the upper end of the specified range (35 dB(A)) in all cases and the lower end of the range (30 dB(A)) in most cases. The only phase of the Project with a predicted noise level greater than 30 dB(A) is the earthworks phase during construction where a level of 31 dB(A) is predicted. As this level is still within the range specified in the Planning Guideline and due to the temporary nature of the construction works, it is considered that there will be no significant impacts on the background ambient noise levels as a result of these works.

The Planning Guideline also requires specific consideration to be given to the noise at night between the hours of 8:00pm and 6:00am. It is not expected that construction, scheduled maintenance, or decommissioning works will be conducted between these times, though the Project may operate during this period. As the predictions have considered the worst-case (highest noise level) conditions, the predicted noise levels for this period will be as shown in Table 9. A level of no more than 23 dB(A) is therefore expected between these hours from the operation of the Project. No adverse noise impacts are therefore expected between the hours of 8:00pm and 6:00am.

While there are no predicted impacts from construction noise, noise management will be addressed further in a construction noise management plan that will be prepared during the detailed design phase of the Project. Due to the similarities in the activities, this should also cover the maintenance and decommissioning phases of the Project.

5 VIBRATION ASSESSMENT

The Planning Guideline requires an assessment of vibration only where it is considered that there are sensitive receptors close enough to vibration generators to be affected by vibration. The operation of the Project is not expected to produce significant levels of vibration and would not be perceptible at the boundary of the site. The construction and decommissioning of the Project will have the potential to generate higher levels of vibration.

The two pieces of equipment expected to produce the highest levels of vibration are the excavator and the roller, particularly if vibratory rolling is used. The most onerous vibration criterion for this assessment is a PPV of 0.3 mm/s, to maintain human comfort. A level of 0.3 mm/s is expected at a distance of 35m from an excavator and 70m from a vibratory roller. As these distances are significantly lower than the separation distance between the Project and the nearest noise sensitive receiver, there will be no adverse impacts from vibration on any of the nearby sensitive receivers.

6 CONCLUSION

A noise and vibration impact assessment has been completed for the proposed Kidston BESS. The Project will consist of a battery energy storage system, with a capacity of up to 250MW/1250MWh, and associated grid connection infrastructure.

The assessment has considered the noise and vibration generated by the construction, operation, maintenance, and decommissioning of the Kidston BESS in accordance with the requirements of version 3.5 of the *State Development Assessment Provisions*, specifically, *State Code 27: Battery storage facility development*.

The results of the assessment show that due to the large separation distances between the site and the nearby noise sensitive receivers, there will be no noise or vibration impacts from the construction, operation, maintenance, or decommissioning of the Kidston BESS.

It is therefore considered that the Kidston BESS has been designed to not result in unacceptable adverse impacts on individuals, communities, the environment, adjacent sensitive land uses and sensitive receptors, landscape values and infrastructure and services, as required by *State Code 27: Battery storage facility development*.

APPENDIX A: SOUND POWER LEVELS

Equipment	Sound Power Level per One Third Octave Band Centre Frequency [dB(A)]																										
	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz	Overall
Battery	-	-	-	48	59	65	75	68	72	77	78	78	78	78	79	80	81	80	78	76	75	73	71	68	65	-	-	90
Inverter *(with Silencer)*	34	40	44	52	55	57	62	59	59	63	66	71	64	64	66	64	64	61	60	59	76	84	61	65	75	64	65	86
MV Transformer	40	40	41	43	43	50	69	52	53	68	64	76	60	71	64	62	57	54	56	56	54	49	48	51	48	42	41	79
Grid Transformer	60	60	61	63	63	70	89	72	73	88	84	96	80	91	84	82	77	74	76	76	74	69	68	71	68	62	61	99

Table 10: Construction, Maintenance, and Decommissioning Sound Power Levels

Equipment	Applicable Project Stages	Sound Power Level [dB(A)]
Blower	Maintenance	95
Bus	Construction	90
Concrete Mixer	Construction	109
Concrete Truck	Construction	110
Crane	Construction, Maintenance, Decommissioning	99
Dozer	Construction	113
Excavator	Construction, Decommissioning	103
Forklift	Construction, Maintenance	100
Grader	Construction	114
Hand Tools	Maintenance	104
Heavy Vehicle	Construction, Maintenance, Decommissioning	104
Lawnmower	Maintenance	94
Light Vehicle	Construction, Maintenance, Decommissioning	85
Line Trimmer (Whipper Snipper)	Maintenance	104
Power Washer	Maintenance	102
Roller	Construction	108
Telehandler	Construction, Decommissioning	107
Tipper Truck	Construction	104
Truck Mounted Crane	Maintenance	105
Water Pump	Maintenance	94

Appendix N Traffic Impact Assessment and Heavy Vehicle and OSOM Construction Concept Strategy



rytenskild
Traffic Engineering

TRAFFIC IMPACT ASSESSMENT

PROPOSED BATTERY ENERGY STORAGE SYSTEM (BESS) PROJECT
LOT 66 ON SP304951, KIDSTON

Prepared for
FYFE PTY LTD

1 JUNE 2026

DOCUMENT REGISTER

RTE Reference 25381

Document History

Version	Version date	Details	Reviewed and Authorised	
			Name / Position	Signature
1	1 June 2026	DA	Luke Rytenskild Director RPEQ 6293	

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LIST OF ABBREVIATIONS

AADT	ANNUAL AVERAGE DAILY TRAFFIC
AV	ARTICULATED VEHICLE
AUL TYPE	AUSTROADS TYPE AUL AUXILIARY LEFT TURN TREATMENT TYPE
AUR	AUSTROADS TYPE AUR AUXILIARY RIGHT TURN TREATMENT
BAL	AUSTROADS TYPE BAL BASIC LEFT TURN TREATMENT
BAR	AUSTROADS TYPE BAR BASIC RIGHT TURN TREATMENT
CHL	AUSTROADS TYPE CHL CHANNELISED LEFT TURN TREATMENT
CHR	AUSTROADS TYPE CHR CHANNELISED RIGHT TURN TREATMENT
DSDMIS -	DEPT OF STATE DEVELOPMENT, M'FACTURING, INFRASTRUCTURE AND PLANNING
EIS -	ENVIRONMENTAL IMPACT STATEMENT
ESA	EQUIVALENT STANDARD AXLE
GTIA	GUIDE TO TRAFFIC IMPACT ASSESSMENT (2017)
HRV	HEAVY RIGID VEHICLE
HV	HEAVY VEHICLE
NHVR	NATIONAL HEAVY VEHICLE REGULATOR
OSOM	OVER SIZED OVER MASS VEHICLES
PIA	PAVEMENT IMPACT ASSESSMENT
QPS	QUEENSLAND POLICE SERVICE
RTE	RYTENSKILD TRAFFIC ENGINEERING
RPEQ	REGISTERED PROFESSIONAL ENGINEER OF QUEENSLAND
SAR	STANDARD AXLE REPETITION
SCR	STATE CONTROLLED ROAD
SIDRA	INTERSECTION MODELLING SOFTWARE
SISD	SAFE INTERSECTION SIGHT DISTANCE
TIA	TRAFFIC IMPACT ASSESSMENT
TMP	TRAFFIC MANAGEMENT PLAN
TMR	DEPARTMENT OF TRANSPORT AND MAIN ROADS
VPD	VEHICLES MOVEMENTS PER DAY
VPH	VEHICLES MOVEMENTS PER HOUR

1.0 INTRODUCTION

1.1 Background

Rytenskild Traffic Engineering (RTE) has been engaged by Fyfe Pty Ltd to prepare a Traffic Impact Assessment (TIA) of a proposed Battery Energy Storage System (BESS) project to be constructed at Kidston.

This report forms part of Planning Application which will be assessed by the State Assessment Referral Agency (SARA). The Department of Transport and Main Roads (TMR) will be triggered as a referral agency for the application, therefore, the TIA has generally been carried out in accordance with the Department of Transport and Main Roads publication, Guide to Traffic Impact Assessment (2017). The assessment also addresses the Performance Outcomes of *State Code 27 – Battery storage facility development*.

1.2 Methodology

The following tasks have been carried out during the preparation of this Traffic Impact Assessment:

- Assessment of the existing local and State – controlled road network in the local and regional area. This has included manual / visual inspections of each road, review of background traffic information available from local or state Authorities, and compilation of traffic volume data.
- A review of the construction process and phases that will generate significant traffic volumes on the surrounding road network.
- Identification of suitable haulage routes through consultation with the proponent and the appointed contractors and suppliers.
- An assessment of the likely heavy vehicle traffic generation of each construction phase and its distribution throughout the surrounding road network.
- Analysis of the traffic movements and pavement impacts on the surrounding road network.
- Identification of any required intersection upgrade works as a consequence of construction traffic.
- Identification of any road safety hazards and required mitigation of traffic management measures to be implemented.
- Analysis of pavement impacts, considering base pavement loads and the short – term impact of the construction activities.

A baseline case (i.e. without the project) has been established to determine the potential impact of the project. This report focuses primarily on the construction phase of the project as it is during this phase where the greatest traffic impact would occur. Decommissioning activities are expected to utilise the same haulage routes and access arrangements and generate similar or lower traffic volumes, as discussed in Section 4.2.

The proposal will only generate a relatively low volume of traffic during the operational phase, as it will be typically be managed by two persons. Heavy vehicle movements generated by the project during the operational phase will be occasional and generally associated with maintenance activities. The traffic impact of the project during this phase will be low and does not warrant a detailed assessment.

1.3 Source of Background Information

The following data sources have been utilised in the preparation of this assessment:

- Data summarising the expected construction and operational phase activities, traffic movements and timings for the Project traffic have been provided by the proponent.
- Background traffic data for the relevant sections of the State-Controlled road network has been sourced from the Department of Transport and Main Roads. This includes traffic counts, historical road crash statistics, and road pavement data.
- Traffic data for the local road network has been obtained through site inspection. It is noted that Gilberton is the only local road that will be impacted by the proposal.
- Numerous inspections of the surrounding road network carried out by RTE.
- Translink school bus route data.

1.4 Legislative Framework

This assessment has been carried out in the context of the following legislation:

- Transport Infrastructure Act (1994);
- Transport Operations (Road Use Management) Act 1995;
- TMR Guide to Traffic Impact Assessment (2017), and associated Pavement Impact Assessment (PIA);
- State Code 27 – Battery storage facility development.

1.5 Road Jurisdiction

It is anticipated that the traffic generated by the project will impact upon local and State – controlled roads located within the following local Government areas and TMR regions:

- Etheridge Shire Council;
- Charters Towers Regional Council;
- Townsville City Council;
- TMR – Far North district (North Queensland Region);
- TMR – Northern district (North Queensland Region).

2.0 SITE CONTEXT

2.1 Site Location

The proposed subject site is located within the Kidston Energy Hub, near the former Kidston Gold Mine site, in the Shire of Etheridge. It is located approximately 200km inland from Ingham, with Townsville the closest major centre. The location of the Project site is shown in Figure 2.1 overleaf.

The site is located on Lot 12 SP345756.

The site is located in a sparsely populated rural area and is surrounded by rural land and grazing properties, and other energy projects.



FIGURE 2.1 – APPROXIMATE LOCATION OF PROJECT SITE

2.2 Surrounding Road Network

An inspection of the road network between the Port of Townsville and the site was carried out in October 2022 and April 2026 by Luke Rytenskild.

Heavy vehicles travelling to the site from Townsville will generally travel via the Hervey Range Road to the Gregory Developmental Road and Gilberton Road to access the site. Over-sized Over-Mass (OSOM) vehicles may use the Flinders Highway to Charters Towers, and then north to the site via the Gregory Developmental Road. However this is subject to detailed review by the appointed haulage contractor.

2.2.1 Benwell Road

Benwell Road is the primary connector road within the Port of Townsville. It provides for access between the Port and the surrounding major roads, including Archer Street and Ron McLean Drive. The layout of the road network within the Port of Townsville, together with the intended berth and storage area are shown in Figure 2.2.



FIGURE 2.2 – ROAD NETWORK WITHIN PORT OF TOWNSVILLE

2.2.2 Southern Port Road (Ron McLean Drive)

Ron Mclean Drive is a two lane road and provides a connection between the Townsville port and the Bruce Highway. It generally comprises a 7 metre wide carriageway and 2 metre wide shoulder on each side.

A typical view of Ron McLean Drive is shown below in Figure 2.3.

Ron McLean Drive intersects with the Bruce Highway via a signalised intersection (refer Figure 2.4).



FIGURE 2.3 – TYPICAL LAYOUT OF RON MCLEAN DRIVE



FIGURE 2.4 – BRUCE HIGHWAY / RON MCLEAN DR INTERSECTION

2.2.3 Bruce Highway

The Bruce Highway forms part of the National Highway Network extending between Brisbane and Cairns.

As shown in Figure 2.5, between Ron McLean Drive and the Hervey Range Road intersection the Bruce Highway is a four lane divided road and has a posted speed limit of 100 Km / Hr. This section of highway has recently been upgraded to four lanes with grade separated interchanges.



FIGURE 2.5 – BRUCE HIGHWAY FOUR LANE SECTION

2.2.4 Flinders Highway

The Flinders Highway is a two lane State controlled road and extends from the Bruce Highway at Townsville to Charters Towers and beyond. OSOM vehicles associated with the project and travelling from the Port of Townsville may travel to the site via the Flinders Highway and then turn to the Gregory Developmental Road at Charters Towers.

2.2.5 Hervey Range Road

The Hervey Range Road extends for approximately 121km west until it terminates at the Gregory Developmental Road (Gregory Highway) via a basic T junction. The Gregory Highway provides north-south connection between rural towns. It extends from the south at Springsure up to Greenvale to the north. The road comprises a single traffic lane in each direction. As shown below, the eastern end of the road includes a one metre wide lane separator.

The road is typically of a rural standard comprising of a single two lane carriageway, and has a posted speed limit of 100km/hr. The typical layout of the Hervey Range road at its eastern end is shown in Figure 2.6. A typical layout at its western end is shown in Figure 2.7.

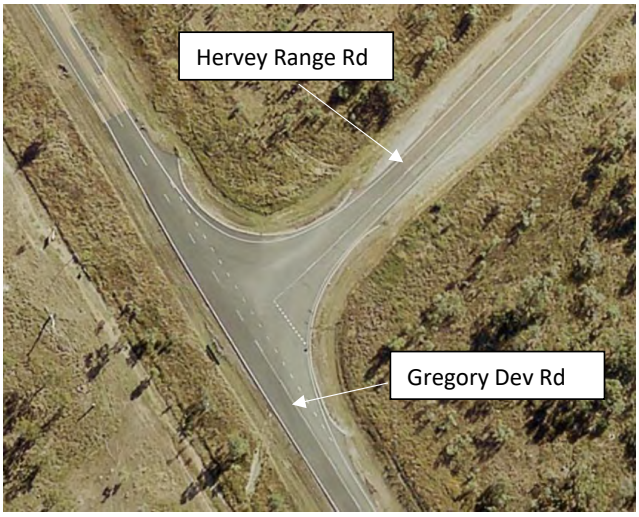


FIGURE 2.6 – GREGORY DEV ROAD / HERVEY RANGE RD INTERSECTION



FIGURE 2.7 – TYPICAL CROSS SECTION OF HERVEY RANGE RD (WESTERN END)

2.2.6 Gregory Developmental Road and Kennedy Developmental Road

The Gregory Developmental Road from Charters Towers generally comprises a two lane rural road with a one metre wide sealed shoulder on each side. The posted speed limit is 100 Km / Hr.

The section of the Kennedy Developmental Road that will be impacted by the project has a relatively short length of approximately 3.2 kilometres, between the Gregory Developmental Road to the east and the unsealed section of the Gregory Developmental Road to the north. Typical conditions of the Gregory Developmental Road north of Conjuboy, are shown in Figure 2.8.

Just west of the Lynd Oasis Roadhouse (approx. 164km north of the Gregory Highway / Hervey Range Road intersection), the Gregory Highway connects to the Kennedy Developmental Road via a basic T junction. From this intersection, the Gregory Highway continues north and has an unsealed surface. The condition of the road varies with a significant length of the road under construction (upgrade) at the time of inspection. As shown in Figure 2.9, The bridge over the Einasleigh River has a deck width of 3.2 metres.



FIGURE 2.8 – TYPICAL IMAGES OF GREGORY DEVELOPMENTAL ROAD (NORTH OF CONJUBOY)



FIGURE 2.9 – EINASLEIGH RIVER BRIDGE

2.2.7 Gilberton Road

Gilberton Road extends south of the Gregory Developmental Road and is an unsealed road.

2.2.8 Intersection arrangements

Existing intersection arrangements are shown in Figures 2.10 – 2.14.

Benwell Road / Centenary Drive



Bruce Highway / Ron McLean Drive

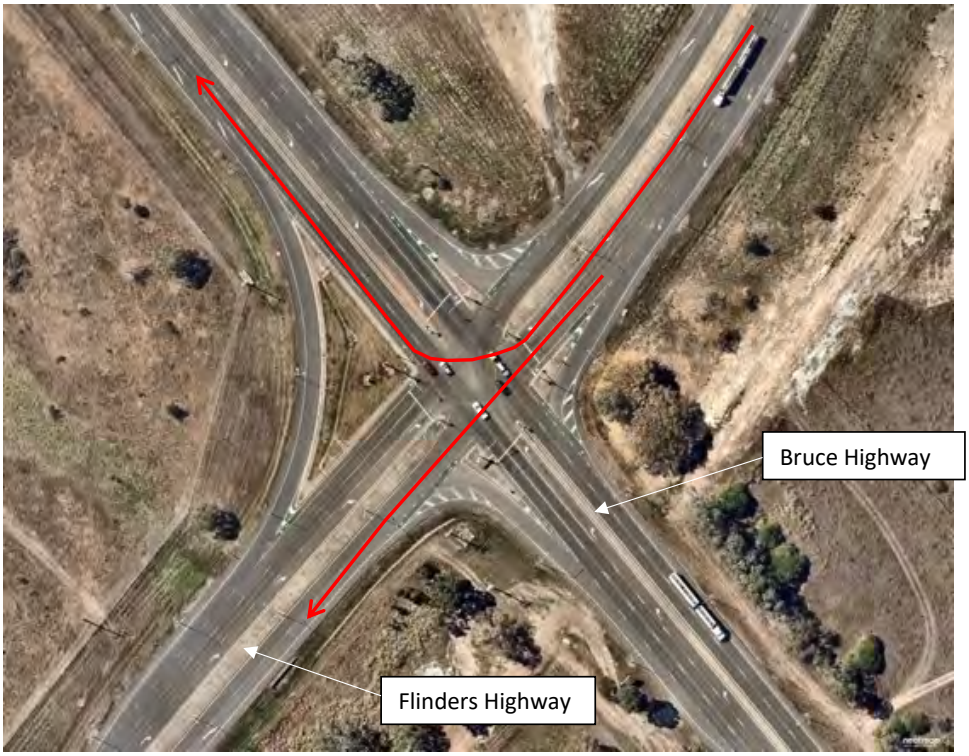


FIGURE 2.10 – AERIAL IMAGES OF INTERSECTIONS ALONG HAUL ROUTE

Hervey Range Road / Bruce Highway



Gregory Highway / Hervey Range Road



FIGURE 2.11 – AERIAL IMAGES OF INTERSECTIONS ALONG HAUL ROUTE

Flinders Highway / Stuart Dr (South Townsville)

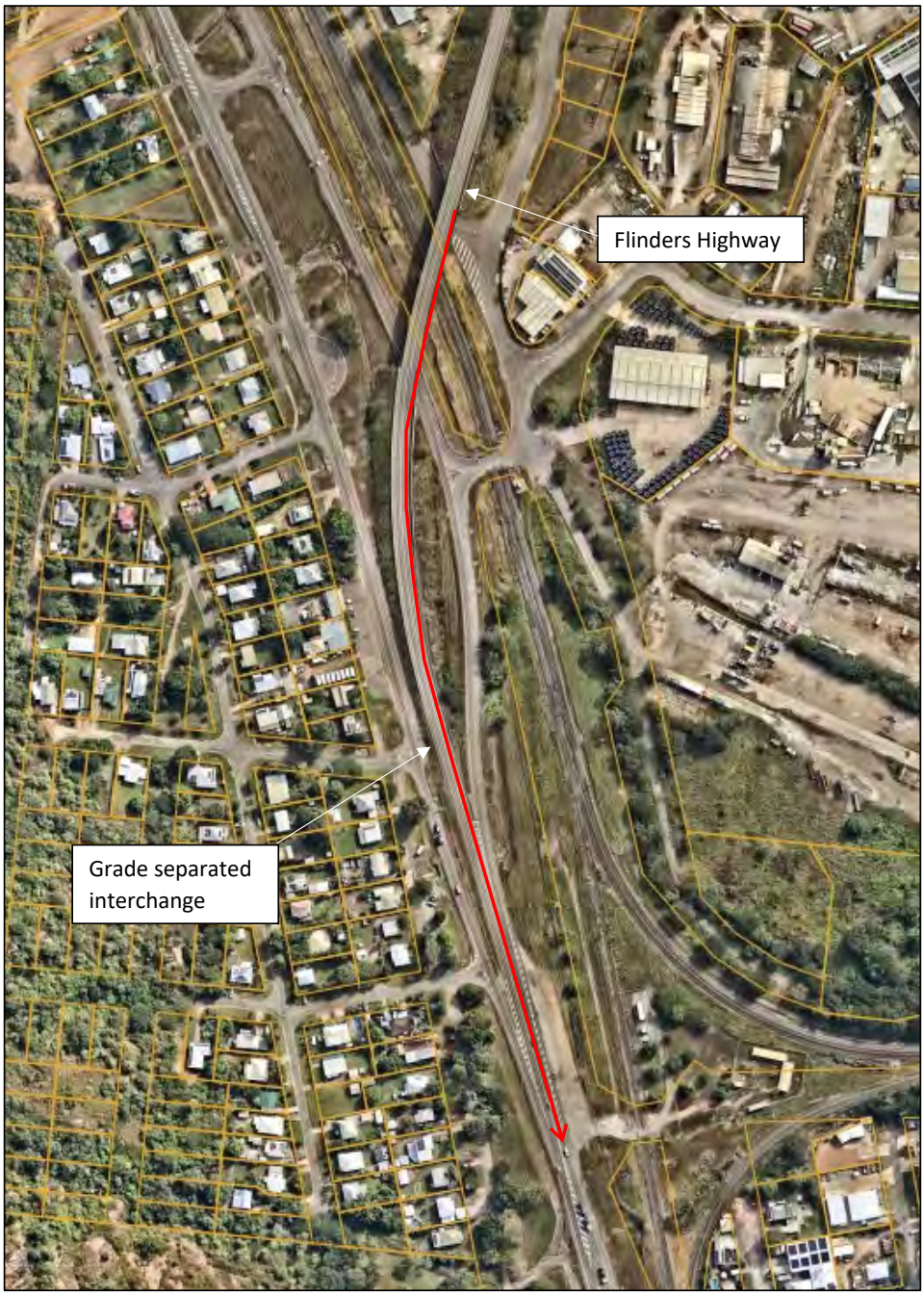


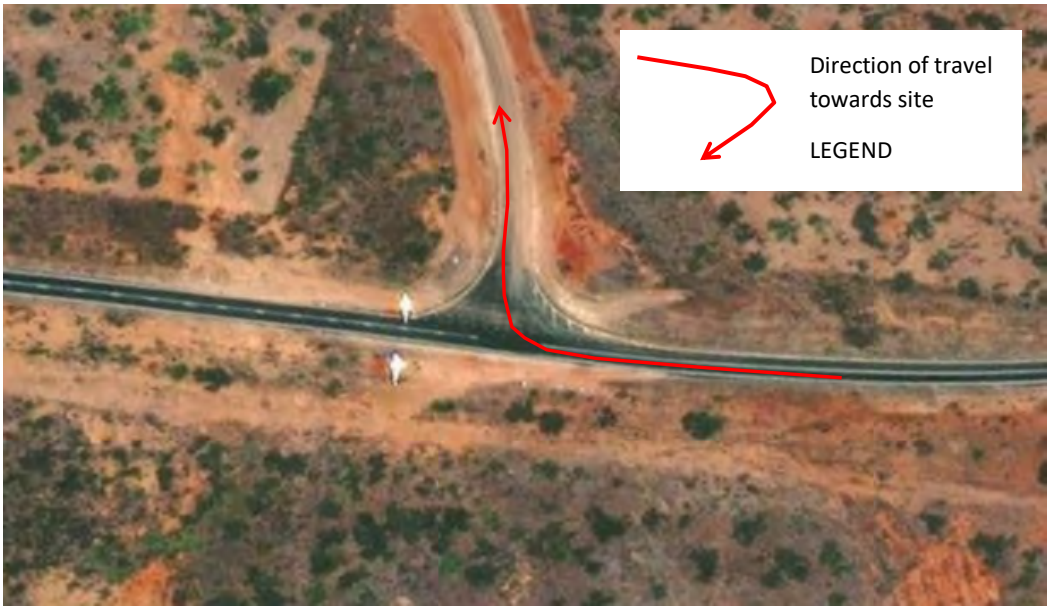
FIGURE 2.12 –AERIAL IMAGES OF INTERSECTIONS ALONG HAUL ROUTE

Flinders Highway / Gregory Developmental Road (Charters Towers)



FIGURE 2.13 –AERIAL IMAGES OF INTERSECTIONS ALONG HAUL ROUTE

Gregory Highway / Kennedy Developmental Road



Gilberton Road / Gregory Highway

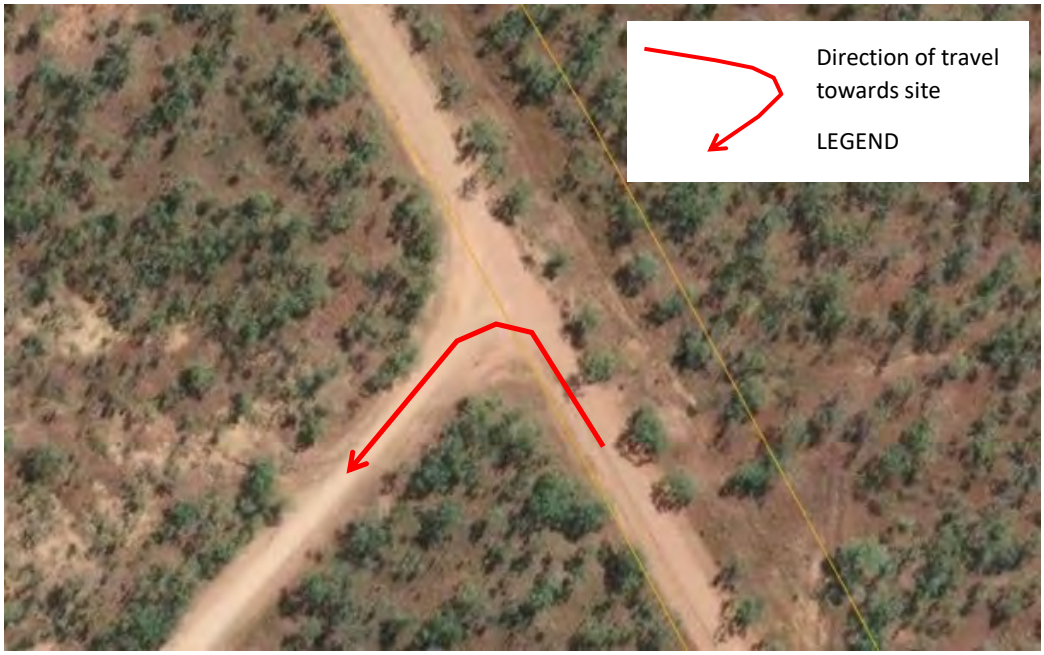


FIGURE 2.14 –AERIAL IMAGES OF INTERSECTIONS ALONG HAUL ROUTE

2.3 Traffic volumes

Background traffic volumes for the relevant road sections in the area have been sourced from TMR and summarised in Figures 2.16 – 2.18.

As shown, traffic volumes outside of the Townsville built up area are very low (< 500 vehicles per day).

2.4 Pavement Conditions

The existing road pavement conditions along roads leading to the site from Townsville are generally as follows:

Table 2.2 – General pavement conditions

Road	Pavement conditions
Benwell Road	Very good
Southern Port Road (Ron McLean Road)	Very good
Bruce Highway	Very good
Hervey Range Road	Very good
Flinders Highway	Very good
Gregory Developmental Road	Good
Kennedy Developmental Road	Good
Gregory Dev Road (north of Kennedy Dev Rd)	Unsealed – condition varies (generally 80Km / Hr maintained)
Gilberton Road	Unsealed – condition varies (generally 60Km / Hr maintained)

2.5 School bus services

School bus services operate along the Hervey Range Road between Hervey Range and Thuringowa Central. These services will not be significantly impacted by the proposal given the low increase in traffic volume generated by the proposal. OSOM vehicles travelling to the site will do so during night time periods or during the day outside of school traffic periods.



FIGURE 2.16 – EXISTING TRAFFIC VOLUMES (SOURCE: TMR CENSUS 2024)



FIGURE 2.17 – EXISTING TRAFFIC VOLUMES (SOURCE: TMR CENSUS 2024)



FIGURE 2.18 – EXISTING TRAFFIC VOLUMES (SOURCE: TMR CENSUS 2024)

3.0 PROJECT CHARACTERISTICS

3.1 Scale and operations

The proposal pertains to a Battery Energy Storage System (BESS) with a power output of approximately 250MW over a project area of approximately 6 hectares.

3.2 Construction Vehicle Types

Deliveries will generally be made using Articulated Vehicles. The majority of light and heavy vehicle traffic will arrive at the site between 6:30am and 9am and then depart between 5pm and 7pm.

Over-Size Over-Mass (OSOM) vehicles will be required to transport the following items:

- Power transformer (1 x) ;
- Switchgear / control room (2 x).

The BESS skids, inverters, auxiliary transformers and other equipment will be delivered by articulated vehicles or B-double vehicles.

An indicative configuration for the OSOM vehicles which will be used to transport the power transformer and control room is shown in Appendix D.

3.3 Haulage Routes

It is expected that the Townsville Port will be used for all deliveries by sea. It is proposed that heavy vehicles will generally use the Hervey Range Road (Route A below), and OSOM components may be transported via the Flinders Highway (Route B below).

3.3.1 Haulage Route A (via Hervey Range Road)

Equipment and materials will generally be transported from the Port via Hervey Range Road. This will include BESS containers, inverter units, transformers and associated electrical infrastructure. The route via Hervey Range Road is as follows (also refer to Figure 3.3):

- Benwell Road (local road)
- Southern Port Road (local road)
- Bruce Highway (State controlled road)
- Bruce Highway (State controlled road)
- Hervey Range Road (State controlled road)
- Gregory Developmental Road (State controlled road)
- Kennedy Developmental Road (State controlled road)
- Gregory Highway (State controlled road)
- Gilberton Road (local road).

3.3.2 Haulage Route B (via Flinders Highway)

Over-sized components including transformers may be transported from the Port via Charters Towers using the following roads (also refer Figure 3.4):

- Benwell Road (local road)
- Southern Port Road (local road)
- Flinders Highway (State controlled road)
- Gregory Developmental Road (State controlled road)
- Gilberton Road (local road)

3.4 Construction Workforce

The size of the construction workforce will vary throughout the construction period; however it is expected that up to 85 workers will be at the site during peak activity. Generally, there will be 20 – 30 workers during the early stages with a maximum number reached during the peak installation period.

3.5 Vehicle Access

It is proposed that access to the site will be gained via an existing access off Gilberton Road. The formation of the existing access will allow construction vehicles to access the site satisfactorily.

3.6 Site Facilities

Site facilities will include:

- Site offices and amenities.
- Car parking for a minimum of 20 cars and two shuttle buses.

Internal roadways will be provided linking the various components of the project site.

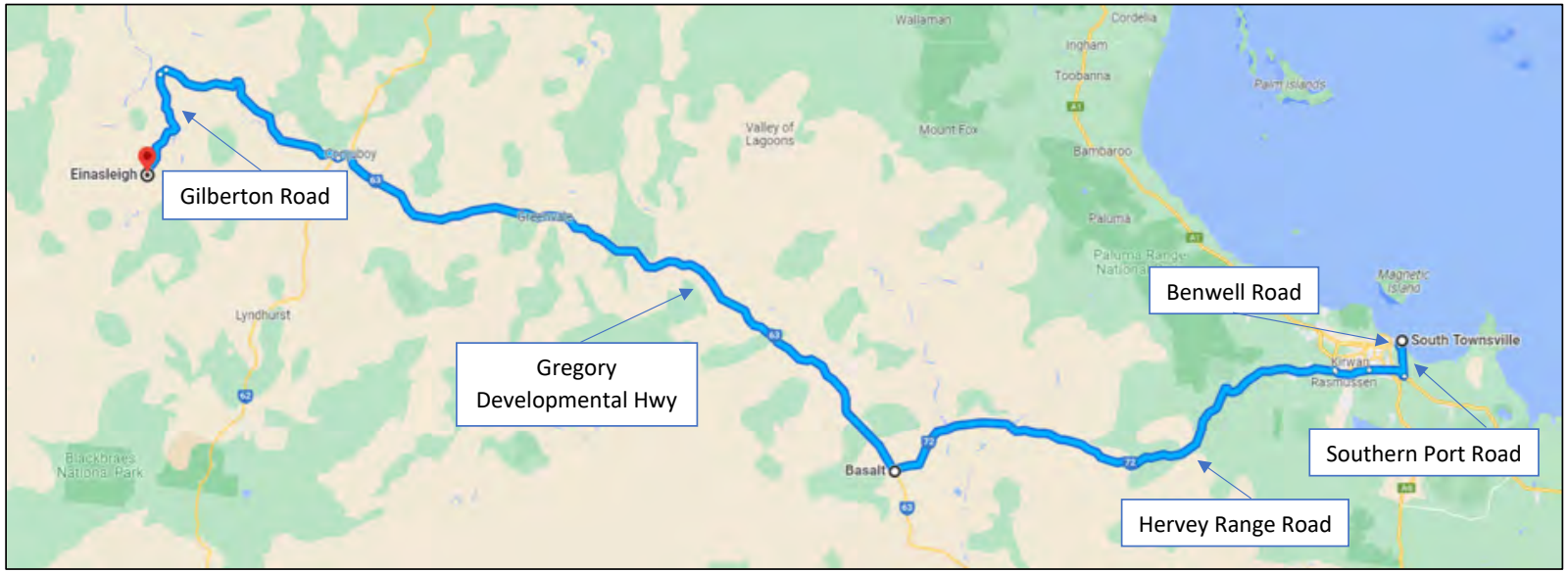


FIGURE 3.3 – HAULAGE ROUTE A – EQUIPMENT AND MATERIAL DELIVERIES (AV & OSOM SUBJECT TO HAULAGE CONTRACTOR ASSESSMENT)

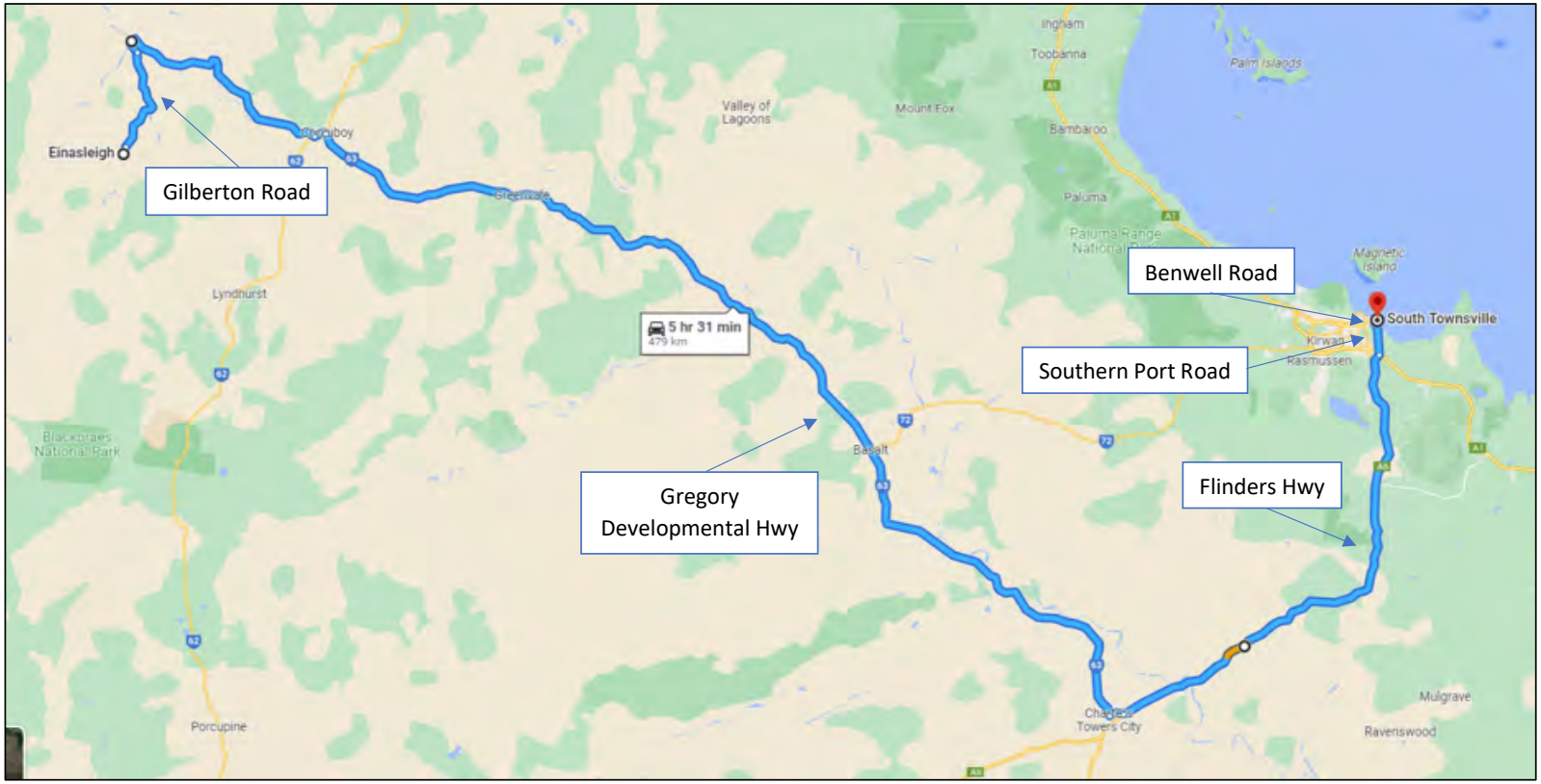


FIGURE 3.4 – HAULAGE ROUTE B – OSOM COMPONENTS (POTENTIAL ROUTE ONLY IF REQUIRED)

4.0 PROJECT TRAFFIC

4.1 Traffic Generation

The proposal will generate in the order of 260 Articulated Vehicle (AV) deliveries from the Port of Townsville to the site over the construction period. These deliveries will transport BESS containers, inverter units, auxiliary transformers and other general construction materials.

The project will only require three OSOM vehicles to travel from the Port of Townsville to the site. One of these vehicles will carry the power transformer, and there will be two other loads for the switch key/control rooms. All other loads from the port to the site will be via standard Articulated Vehicles.

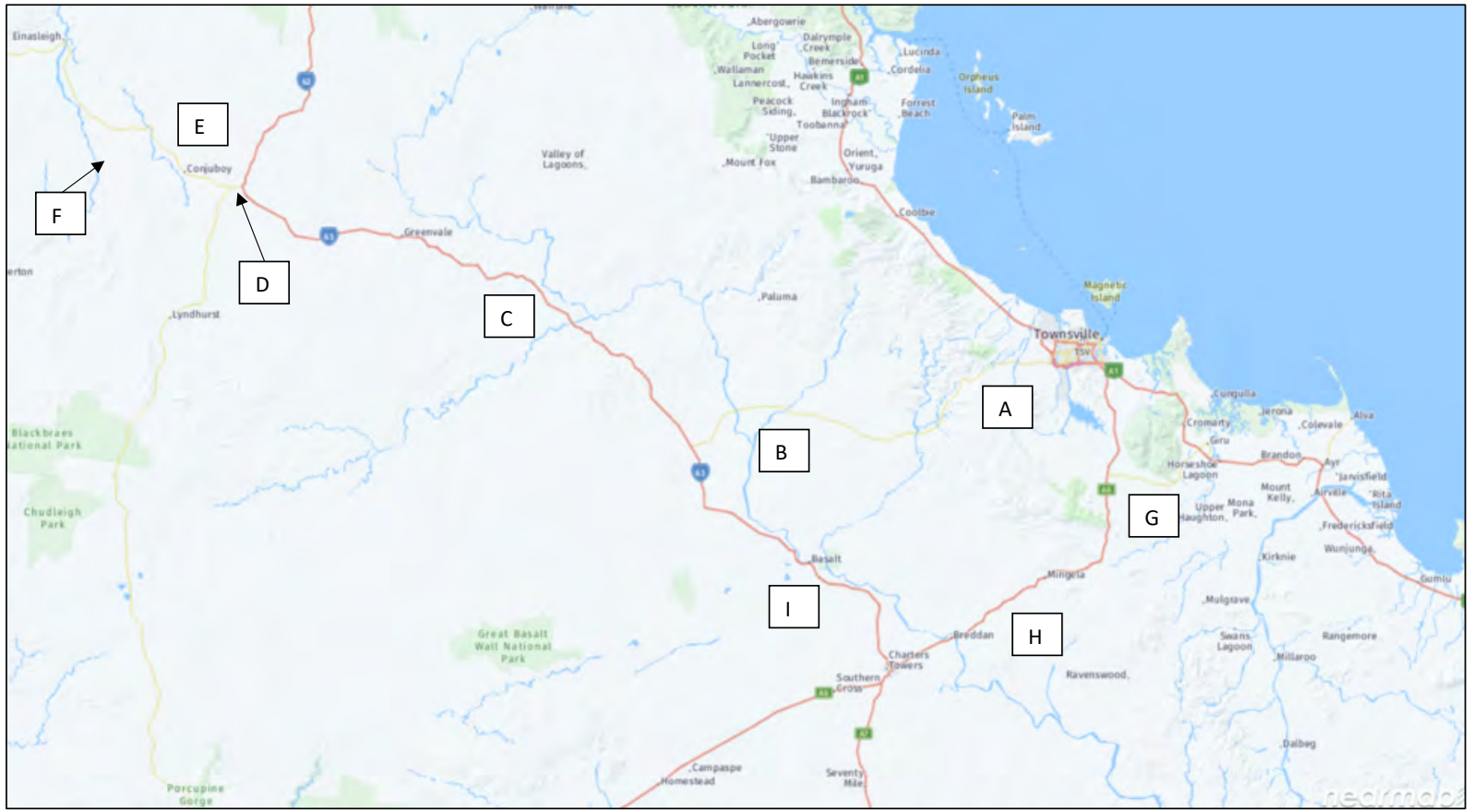
The size of the construction workforce will vary throughout the construction period; however, it is expected that up to 85 workers will be at the site during peak activity. Construction workforce will be fly - in / fly - out and will stay at a Genex owned property (Oaks Rush Resort) near the site, subsequently, there generally will be no workforce traffic travelling to and from surrounding areas. Traffic generation estimates are shown in Figure 4.1.

4.2 Decommissioning

At the end of the project's operational life, decommissioning activities are expected to involve the removal of battery units, transformers, switchgear and associated infrastructure using the same road network and access arrangements assessed for the construction phase. The surrounding road network is not expected to change substantially between commissioning and decommissioning, and decommissioning vehicle movements are anticipated to be of a similar or lower magnitude than those generated during construction. Accordingly, the traffic, transport and pavement impacts associated with decommissioning are expected to be negligible and consistent with the findings of this assessment.

A Decommissioning Management Plan would be prepared prior to commencement of decommissioning works and would address haulage routes, traffic management, OSOM movements (if required), road condition monitoring and any necessary mitigation measures in consultation with the relevant road authorities.

Figure 4.1 – Detailed breakdown of heavy vehicle generation during construction (key map)



5.0 ROAD NETWORK IMPACT (OPERATIONS)

5.1 General

As shown in Section 4, the project will generate relatively low traffic volumes throughout the surrounding road network. The resultant traffic volumes on each road section will be well within acceptable limits stipulated by Austroads. Increases in intersection turning movement volumes will typically be less than 5 vehicle movements per hour which does not warrant detailed assessment.

As shown in Figure 5.1, the impact of project traffic will exceed 5% of existing daily volumes on Gilberton Road. This road currently carries very low volumes and so the 5% threshold is reached even though the traffic generation of the proposal will be low.

Road Section	Existing AADT	Project HV AADT (note 1)	% Impact
A	4300	2	0.0%
B	159	2	1.3%
C	251	2	0.8%
D	224	2	0.9%
E	63	2	3.2%
F	10	2	20.0%
G	2642	2	0.1%
H	197	2	1.0%
I	250	2	0.8%

Refer to Key Map shown in Figure 4.1.

***Notes:**

Note 1: AADT values represent average daily heavy vehicle traffic over the full 24-month construction period, equating to less than one (1) heavy vehicle movement per day. A conservative value of two (2) HV/day has been adopted for assessment purposes.

FIGURE 5.1 – PERCENTAGE IMPACT OF CONSTRUCTION TRAFFIC UPON ROAD LINKS

It is estimated that the project will generate up to approximately 2 heavy vehicle movements per day on average during construction, with higher but short-duration fluctuations associated with discrete delivery activities. Light vehicle movements will be minimal, as the workforce will be accommodated at the Oaks Rush Resort, co-located with the Kidston Energy Hub, and will not generally generate daily commuting traffic to surrounding areas.

The impact of increased traffic on rural roads such as the Gregory Developmental Road has been assessed in the context of Austroads Guide to Road Design Part 3, particularly Table 4.5. Based on the low overall traffic generation, the proposal will not increase daily traffic volumes on any surrounding rural roads above 500 vehicles per day.

There are no sections of the Gregory Developmental Road or other affected roads where the carriageway width is less than 6.2 metres, with the exception of the single-lane bridge over the Einasleigh River and isolated floodway sections. This includes the western section of the Hervey Range Road, where existing traffic volumes are approximately 200 vehicles per day.

Table 4.5: Single carriageway rural road widths (m)

Element	Design AADT				
	1–150	150–500	500–1000	1000–3000	> 3000
Traffic lanes[1]	3.7 (1 x 3.7)	6.2 (2 x 3.1)	6.2–7.0 (2 x 3.1/3.5)	7.0 (2 x 3.5)	7.0 (2 x 3.5)
Total shoulder	2.5	1.5	1.5	2.0	2.5
Minimum shoulder seal [2],[3],[4],[5],[6]	0	0.5	0.5	1.0	1.5
Total carriageway	8.7	9.2	9.2–10.0	11.0	12.0

1 *Traffic lane widths include centrelines but are exclusive of edge-lines.*
2 *Where significant numbers of cyclists use the roadway, consideration should be given to fully sealing the shoulders. Suggest use of a maximum size 10 mm seal within a 20 km radius of towns.*
3 *Wider shoulder seals may be appropriate depending on requirements for maintenance costs, soil and climatic conditions or to accommodate the tracked width requirements for Large Combination Vehicles.*
4 *Short lengths of wider shoulder seal or lay-bys to be provided at suitable locations to provide for discretionary stops.*
5 *Full width shoulder seals may be appropriate adjacent to safety barriers and on the high side of superelevation.*
6 *A minimum 7.0 m seal should be provided on designated heavy vehicle routes (or where the AADT contains more than 15% heavy vehicles).*

FIGURE 5.2 – AUSTROADS PART 3 TABLE 4.5 (SINGLE CARRIAGEWAY RURAL ROAD WIDTHS)

5.2 Other roads

The traffic generation of project construction activities will be relatively low and negligible in the context of current traffic volumes throughout the Townsville built up area. It is estimated that project traffic would constitute less than five (5) vehicle movements per hour on any individual intersection turning movement.

A detailed assessment of impacts upon network capacity (for the Townsville road network) is therefore not considered to be necessary.

5.3 Intersection Impacts

The proposal will generate up to five (5) movements per hour at the following critical movements:

- left turn from the Gregory Developmental Road to the Hervey Range Road;
- right turn from the Flinders Highway to the Gregory Developmental Road;
- left turn from the Gregory Developmental Road to the Kennedy Developmental Road;
- right turn from the Kennedy Developmental Road to the Gregory Developmental Road;
- left turn from the Gregory Developmental Road to the Gilberton Road.

Through traffic volumes at the Hervey Range Road / Gregory Developmental Road intersection are in the order of 25 vehicles per hour, and less further to the north at Kennedy Developmental Road. As shown in Figure 5.3, existing and resultant traffic volumes at each intersection are well into the 'Basic' range of the Austroads turn warrants graph, and as such only Type BAL and BAR turn treatments are warranted at each intersection. Such requirements are generally met, with the exception of the right turn from the Kennedy Developmental Road to the Gregory Developmental Road, where some minor pavement widening is required to facilitate a Type BAR treatment.

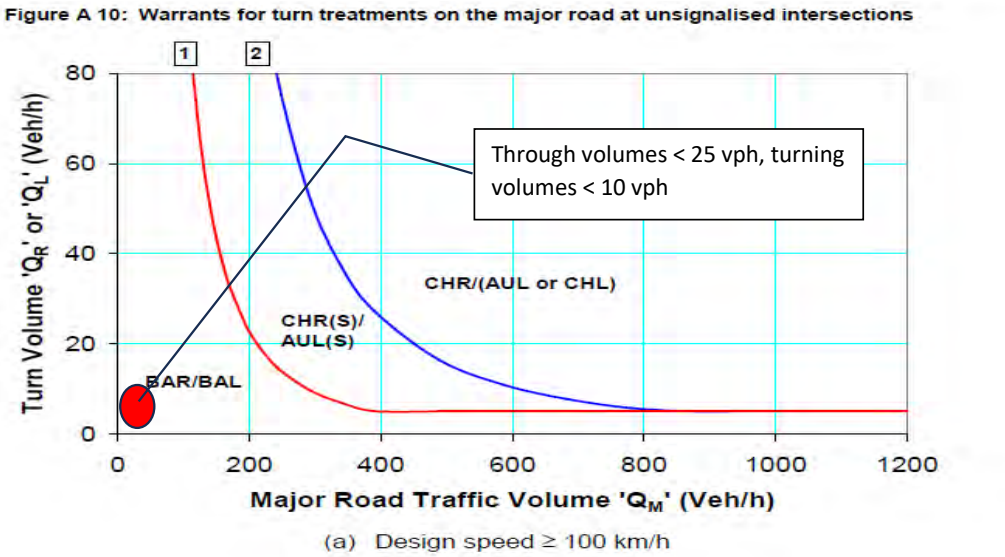


FIGURE 5.3 – TURN WARRANTS AT GREGORY DEVELOPMENTAL ROAD AND HERVEY RANGE ROAD (SOURCE: AUSTROADS PART 4A)

5.4 Upgrade works required to accommodate Over-sized Vehicles

Swept paths for OSOM vehicles at various critical sections of road and intersections along the haulage route are shown in Appendices E and F.

The alignment of the haulage route between the Townsville Port and the site generally provides for good operating conditions with a relatively low number of upgrade works or modifications required to facilitate the movement of over-sized vehicles.

A register of upgrade works required to facilitate various energy projects in the area has been prepared by AECOM. The updated register including the proposed project is shown in Figure 5.4.

Figure 5.4 – Works required at various intersections and road sections (Source: AECOM report)

Location	Works Required
Gregory Developmental Road / Bridge Street Intersection (Charters Towers)	Replace existing splitter island sign supports for R1-2 (Give Way) and R2-3L (Keep Left) signs with removable supports (Loc-Socket or approved equivalent). Existing concrete islands to remain in place and can be traversed by OSOM vehicles as required.
Gregory Developmental Road – Einasleigh River Crossing	Construct a temporary side-track adjacent to the existing single-lane bridge (approx. 3.2 m wide) to accommodate OSOM vehicle passage. Vegetation clearing will be required to establish the side-track alignment.
Gilberton Road – Cooperfield River Crossing	Construct a temporary side-track adjacent to the existing single-lane bridge (approx. 3.3 m wide) to accommodate OSOM vehicle passage. Vegetation clearing will be required to establish the side-track alignment.
Gilberton Road (Ch. 27.21 km)	Modify existing fence line and cattle grid arrangement to enable OSOM vehicle passage. Works may include partial fence removal and/or adjustment to allow clearance.
Bruce Highway / Hervey Range Road Intersection	Undertake localised pavement widening and provision of hardstand areas to accommodate OSOM swept paths for 40T control room and 186T transformer transporters. Minor signage relocation/modification may be required.
Flinders Highway / Kiernan Drive Intersection	Modify traffic signal infrastructure and/or signal clearance envelopes to achieve adequate vertical and horizontal clearance for OSOM vehicles, subject to final swept path verification and approval.

5.5 Overtaking facilities

The Gregory Developmental Road carries a low traffic volume of approximately 250 vehicles per day near Charters Towers, and less further to the north near Conjuboy. Furthermore, it is expected that only three OSOM loads will be required for the project.

Given these low volumes and the length of road (approx. 240 Km between Charters Towers and Conjuboy), the provision of dedicated overtaking facilities is not considered to be practical or necessary. Roads along the haulage route are generally flat and straight and allow heavy vehicles to travel at the speed limit, with regular opportunities for passing available.

With regard to OSOM vehicles, escort pilots should be required to facilitate the opportunity for vehicles to pass a convoy or single vehicle, at appropriate locations and as the need arises (ie when vehicles following are delayed by a slow vehicle).

6.0 ROAD NETWORK IMPACTS (PAVEMENT)

6.1 Scope

An analysis of pavement impacts has been carried out for the surrounding State controlled road network. The pavement impact assessment has been undertaken in accordance with the Guide to Traffic Impact Assessment Practice Note: Pavement Impact Assessment (December 2018), using Standard Axle Repetitions and associated marginal cost of pavement damage. Marginal Cost values for road wear have been obtained from TMR's Road Asset Management section.

In accordance with the GTIA, pavement impact mitigation is required for any road sections where the development traffic (during construction, operation and decommissioning) exceeds 5% of the background equivalent SARs.

6.2 Background Traffic Loads

In accordance with the Pavement Impact Assessment (PIA) Practice Note, a value of 3.2 SAR4 / HV has been adopted to calculate background SARs.

6.3 Development Pavement Loads

In accordance with the PIA Practice Note, the SAR4, SAR5 and SAR12 values shown in Table 6.1 have been applied for the development generated heavy vehicles. Calculations for the various heavy vehicle combinations are shown in Figures 6.1 – 6.3. It is noted that the values adopted for the loaded vehicles are conservative (high) as they assume that each vehicle is carrying the maximum legal payload.

Table 6.1 – Standard SAR values (source: GTIA)

	Axle Group Type	SAST	SADT	TAST	TADT	TRDT	QADT
	Axles	SINGLE	SINGLE	TANDEM	TANDEM	TRI	QUAD
	Tyres	SINGLE	DUAL	SINGLE	DUAL	DUAL	DUAL
	Legal loading (tonnes)	6.000	9.000	11.000	16.500	20.000	27.000
	Base load / SAR4	5.400	8.200	9.200	13.800	18.500	22.500
Unloaded	Axle group load (tonnes)	4.500	4.000	7.500	5.000	6.500	7.900
	SAR4 or ESAs	0.482	0.057	0.442	0.017	0.015	0.015
	SAR5	0.402	0.028	0.360	0.006	0.005	0.005
	SAR12	0.112	0.000	0.086	0.000	0.000	0.000
Loaded	Axle group load (tonnes)	6.000	9.000	11.000	16.500	20.000	27.000
	SAR4 or ESAs	1.524	1.451	2.044	2.044	1.366	2.074
	SAR5	1.694	1.593	2.444	2.444	1.477	2.488
	SAR12	3.541	3.056	8.536	8.536	2.549	8.916

COMPONENT :
Various deliveries

Vehicle:	6 AXLE SEMI TRAILER														
	Axles	SINGLE	TANDEM			TRI								Total	Unit
	Tyres	SINGLE	DUAL			DUAL									
	Legal loading (tonnes)	6.000	16.500			20.000								42.500	tonne
	Base load per SAR4	5.400	13.800			16.500									
Unloaded	Axle group load (tonnes)	4.500	5.000			6.500								16.000	tonne
	SAR4 or ESAs	0.482	0.017			0.015								0.515	SAR
	SAR5	0.402	0.006			0.005								0.413	SAR
	SAR12	0.112	0.000			0.000								0.112	SAR
Loaded	Axle group load (tonnes)	6.000	16.500			20.000								42.500	tonne
	SAR4 or ESAs	1.524	2.044			1.366								4.934	SAR
	SAR5	1.694	2.444			1.477								5.614	SAR
	SAR12	3.541	8.536			2.549								14.625	SAR
Payload		1.500	11.500			8.500								16.500	tonnes

COMPONENT :
Various material

Vehicle:	TRUCK (CLASS 5) AND 4 AXLE DOG														
	Axles	SINGLE	SINGLE	TANDEM	TANDEM	TANDEM								Total	Unit
	Tyres	SINGLE	SINGLE	DUAL	DUAL	DUAL									
	Legal loading (tonnes)	6.000	6.000	16.500	16.500	16.500								61.500	tonne
	Base load per SAR4	5.400	5.400	13.800	13.800	13.800									
Unloaded	Axle group load (tonnes)	4.500	4.500	5.000	5.000	5.000								24.000	tonne
	SAR4 or ESAs	0.482	0.482	0.017	0.017	0.017								1.016	SAR
	SAR5	0.402	0.402	0.006	0.006	0.006								0.823	SAR
	SAR12	0.112	0.112	0.000	0.000	0.000								0.224	SAR
Loaded	Axle group load (tonnes)	6.000	6.000	16.500	16.500	16.500								61.500	tonne
	SAR4 or ESAs	1.524	1.524	2.044	2.044	2.044								9.179	SAR
	SAR5	1.694	1.694	2.444	2.444	2.444								10.718	SAR
	SAR12	3.541	3.541	8.536	8.536	8.536								32.690	SAR
Payload		1.500	1.500	11.500	11.500	11.500								37.500	tonnes

COMPONENT :
Generator segment 1

Vehicle:	TRUCK AND 10X8 PLATFORM															
	Axles	SINGLE	TANDEM	ROW	ROW	ROW	ROW	ROW	ROW	ROW	ROW	ROW	ROW	Total	Unit
	Tyres	SINGLE	DUAL	8	8	8	8	8	8	8	8	8	8		
	Legal loading (tonnes)	6.000	16.500	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	18.000	202.500	tonne
	Base load per SAR4	5.400	13.800	16.400	16.400	16.400	16.400	16.400	16.400	16.400	16.400	16.400	16.400		
Unloaded	Axle group load (tonnes)	6.250	10.500	5.750	5.750	5.750	5.750	5.750	5.750	5.750	5.750	5.750	5.750	62.750	tonne
	SAR4 or ESAs	1.795	0.335	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	2.281	SAR
	SAR5	2.077	0.255	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.332	SAR
	SAR12	5.779	0.038	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.816	SAR
Loaded	Axle group load (tonnes)	6.250	18.400	14.210	14.210	14.210	14.210	14.210	14.210	14.210	14.210	14.210	14.210	166.750	tonne
	SAR4 or ESAs	1.795	3.160	0.564	0.564	0.564	0.564	0.564	0.564	0.564	0.564	0.564	0.564	10.591	SAR
	SAR5	2.077	4.214	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488	11.175	SAR
	SAR12	5.779	31.569	0.179	0.179	0.179	0.179	0.179	0.179	0.179	0.179	0.179	0.179	39.139	SAR
Payload		1.500	11.500	13.500	13.500	13.500	13.500	13.500	13.500	13.500	13.500	13.500	13.500	148.000	tonnes

FIGURE 6.1- PAVEMENT LOAD VALUES (6 AXLE AV, TRUCK + DOG, OSOM)

6.4 Extent of Impact

The percentage impact of development generated SARs upon the surrounding State controlled road network is shown in the '% EXIST' column of the 'Marginal Cost for sealed' page of the pavement impact spreadsheet.

The analysis indicates that 5% SARs is only exceeded for the unsealed section of the Gregory Developmental Road and Gilberton Road.

6.5 Calculated Contribution under GTIA

A Pavement Impact Assessment has been carried out in accordance with the TMR Guide to Traffic Impact Assessment, using the Marginal Cost Method. The assessment indicates a total contribution of **$18,209** is payable for each year of construction activity. This contribution is payable to the Far Northern Queensland District of TMR, as the impacts only occur on the unsealed section of the Kennedy Developmental Road, Gregory Developmental Road and Gilberton Road.

The calculation spreadsheets have been provided to TMR and can be requested from RTE via info@rytenskildtraffic.com .

6.6 Gilberton Road

It is proposed that pavement impacts be identified through 'pre and post' construction surveys. Surveys would also be carried out during the construction period to monitor pavement damage and maintenance requirements.

7.0 SITE ACCESS & TRAFFIC MANAGEMENT

7.1 Site access

Access to the site will be gained via a single point off Gilberton Road, which has been approved by Council. The existing access will generally be suitable for the construction phase of the project with possibly some minor changes to accommodate OSOM swept paths.

7.2 Traffic management

With regards to the impact of project related traffic upon general road safety in the region, it is noted that:

- A communication plan will be put in place to inform the general public of specific heavy vehicle movements, such as the movement of an over-sized vehicle along a particular section of road. This plan shall also require regular communication with any school bus service operators and the agricultural community to understand road usage requirements for livestock. OSOM movements will be scheduled so to maintain sufficient road space for existing industry.

- Specific safety measures will be implemented for the movement of OSOM vehicles and such will be managed by police and private escort vehicles. This strategy shall be detailed in a Traffic Management Plan.

- An experienced haulage contractor will be appointed to haul over-sized vehicles between the Port of Townsville and the site. This contractor will also prepare its own Route Study and Traffic Management Plan for approval by the NHVR.

- All regular contractors and workers at the site will be required to complete a Workplace Safety Induction. This will include requirements with respect to travel throughout the road network (e.g. keeping to speed limits, fatigue management, being courteous to the general public etc).

7.3 Car parking

On-site car parking requirements will be low and construction workers will primarily be transported to the site by shuttle bus. There will typically only be two persons on site during the operational phase. There are no constraints with respect to achieving required car parking on-site and such will be provided as part of the construction management plan.

It is noted that unsealed car parking areas would be satisfactory given the temporary nature of the construction phase.

8.0 ROAD SAFETY IMPACTS

Between Townsville and the site, traffic generated by the proposal will only use the major road network which already carries significant heavy vehicle volumes and is maintained to a satisfactory standard by TMR.

The sealed road network comprising of the Bruce Highway, Flinders Highway, Hervey Range Road, Gregory Developmental Road and Kennedy Developmental Road, offer favourable conditions with generally a straight and flat alignment and ample cross sectional geometry. The Hervey Range section has been upgraded to provide a safe alignment for heavy vehicles, including passing facilities. The unsealed section of the Gregory Developmental Road will need to be monitored during the course of the construction period to ensure that the pavement is maintained to a safe standard.

Throughout the Townsville area, construction traffic will turn at controlled junctions or by using grade separated interchanges. Other intersections at Charters Towers, at the Hervey Range Road / Gregory Developmental Road and Gregory Developmental Road / Kennedy Developmental Road junctions, are of a suitable standard to cater for construction traffic without the need for upgrading.

Road crash data for the surrounding road network has been provided by the Department of Transport and Main Roads. A summary of the location of the reported crashes in the local area is provided in Appendix C. As shown, crashes have occurred at various locations throughout the network rather than at concentrated locations. On this basis, it is considered that there are no “black spot” areas which warrant a detailed assessment.

The unsealed section of the Gregory Developmental Road between Conjuboy and Gilberton Road is generally of a suitable standard and geometry to facilitate OSOM vehicles. Some minor works may be required to improve safety at crests and water crossings. Such items should be reviewed through a Road Safety Audit prior to the use of the road by heavy vehicles associated with the project.

The movement of OSOM vehicles between the Port of Townsville and the site will be subject to strict conditions imposed by the NHVR, TMR and Queensland Police Service. Such vehicles will be escorted as required by the NHVR. Furthermore, various modifications will be required to support the movement of these vehicles. These are discussed in the Traffic Management Plan and will also be documented in detail by the appointed heavy haulage contractor as part of its Route Study.

9.0 RESPONSE TO STATE CODE 27

State Code 27 – *Battery Storage Facility Development* stipulates the follow Performance Outcomes for Transport networks.

Transport networks
PO24 Construction, operation, maintenance and **decommissioning** activities associated with the development do not adversely impact the efficiency and condition of **transport networks** and infrastructure.
PO25 Construction, operation, maintenance and **decommissioning** activities associated with the development do not compromise the safety of users of the **transport network**.
PO26 Development delivers necessary upgrades to the **transport network** to ensure construction activities and ongoing maintenance do not adversely impact **transport networks** and infrastructure.
PO27 Development demonstrates that a safe, viable and practical haulage route can be secured to accommodate the movement of **oversize/overmass** vehicles during construction and ongoing maintenance activities.
PO28 Development provides safe, efficient, and sustainable vehicular access to the site for all vehicle types anticipated through construction, operation, maintenance and **decommissioning**.

A response to each is provided as follows:

PO24 – As demonstrated by the analysis provided in this report, the traffic generation associated with both construction and decommissioning activities will be relatively low and will not adversely impact transport networks or infrastructure. Decommissioning activities are expected to utilise the same access arrangements and haulage routes as construction, with traffic volumes of a similar or lower magnitude. Traffic volumes during the operational phase of the project will be very low, with typically only two persons based on site and occasional maintenance-related vehicle movements.

PO25 – There will only be three OSOM loads required for the site and these will be escorted in accordance with NHVR requirements. Other heavy vehicles travelling to the site will be subject to usual road operating and legal requirements, and project driver conduct policy, and therefore do not raise any safety concerns. The resultant increase in traffic volumes on the network do not raise any safety issues.

PO26 – Minor changes to the network are required to the facilitate OSOM vehicle access. These generally consist of vegetation trimming, increased pavement at critical corners, and temporal removal of road signage to facilitate OSOM swept paths. These impacts are low and will not cause any adverse impacts to the transport networks.

PO27 – This has been demonstrated by the swept paths presented in this report. It is noted that the haulage routes that may be used have been used for other energy projects in the area that have also required OSOM vehicle access.

PO28 – Safe, efficient and sustainable vehicle access can be achieved between Townsville and the site. Road conditions are good and regularly used by OSOM vehicles. Low traffic volumes are such that vehicles will travel efficiently and without adversely impacting other road users.

10.0 SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Project Proposal

- The proposed BESS project will comprise of up to 200 containerised units, together with 80 inverters and 40 step up transformers.
- Access to the site will be gained from Gilberton Road.
- It is anticipated that the project will be constructed over a period of approximately 24 months.

Heavy Vehicle Haulage

- Heavy vehicle traffic originating from Townsville will generally travel via Hervey Range Road and then the Gregory Developmental Road and Gilberton Road to access the site. Over-sized Over-Mass (OSOM) vehicles carrying switchgear / control rooms, and transformers may travel from the Port via the Flinders Highway to Charters Towers, and then north to the site via the Gregory Developmental Road.
- Other heavy vehicles (Articulated vehicles) will generally travel from Townsville via the Hervey Range Road.

Road Network Impacts

- The proposal will generally have a minor impact upon the operation of the road network within Townsville.
- Resultant traffic volumes on various roads leading from the Port of Townsville to the site will be within the acceptable limits specified by Austroads Part 3.
- Minor modifications will be required along the haulage routes in order to accommodate the passage of Over Sized / Over Mass (OSOM) vehicles.
- Decommissioning activities are expected to utilise the same haulage routes and access arrangements as construction and are anticipated to generate similar or lower traffic volumes, resulting in negligible traffic and transport impacts.

Road Safety

- OSOM vehicles will be escorted as required by the NHVR
- Some upgrade works will be required to facilitate safe traffic conditions along the Gregory Developmental Road and Gilberton Road.
- Road improvements and traffic management measures will be implemented to allow safe road conditions along the Gregory Developmental Road and Gilberton Road.

Pavement Impact

- A Pavement Impact Assessment has been carried out in accordance with the TMR Guide to Traffic Impact Assessment. The assessment indicates a contribution of $18,209 is payable for each year of construction activity.
- The above costs are considered to be excessive for relatively short-term construction activities and for a project which will have negligible ongoing impacts.
- An alternative method (through pre and post pavement dilapidation surveys) is considered to be appropriate for the management of impacts upon Gilberton Road.

State code 27

- The project and associated traffic arrangements are such that the *transport networks* Performance Outcomes can be complied with.

APPENDICES

APPENDIX A – TRAFFIC IMPACT ASSESSMENT CERTIFICATION
APPENDIX B – IMAGES OF PAVEMENT CONDITION ALONG THE HAULAGE ROUTE
APPENDIX C – PAVEMENT IMPACT CALCULATIONS
APPENDIX D – OSOM VEHICLE CONFIGURATION
APPENDIX E – OSOM SWEPT PATH ANALYSIS (40T SWITCHGEAR / CONTROL ROOM)
APPENDIX F – OSOM SWEPT PATH ANALYSIS (200T BESS UNIT)
APPENDIX G – CRASH DATA RESULTS
APPENDIX H – RESPONSE TO STATE CODE 27 BATTERY STORAGE FACILITY DEVELOPMENT

APPENDIX A – TRAFFIC IMPACT ASSESSMENT CERTIFICATION

CERTIFICATION OF TRAFFIC IMPACT ASSESSMENT REPORT
REGISTERED PROFESSIONAL ENGINEER QUEENSLAND

for

Project title:	Traffic Impact Assessment (KIDSTON BESS)

As a professional engineer registered by the Board of Professional Engineers of Queensland pursuant to the *Professional Engineers Act 2002* as competent in my areas of nominated expertise, I understand and recognise:

- the significant role of engineering as a profession, and that
- the community has a legitimate expectation that my certification affixed to this engineering work can be trusted, and that
- I am responsible for ensuring its preparation has satisfied all necessary standards, conduct and contemporary practice.

As the responsible RPEQ, I certify:

i) I am satisfied that all submitted components comprising this traffic impact assessment, listed in the following table, have been completed in accordance with the Guide to Traffic Impact Assessment published by the Queensland Department of Transport and Main Roads and using sound engineering principles, and

ii) where specialised areas of work have not been under my direct supervision, I have reviewed the outcomes of the work and consider the work and its outcomes as suitable for the purposes of this traffic impact assessment, and that

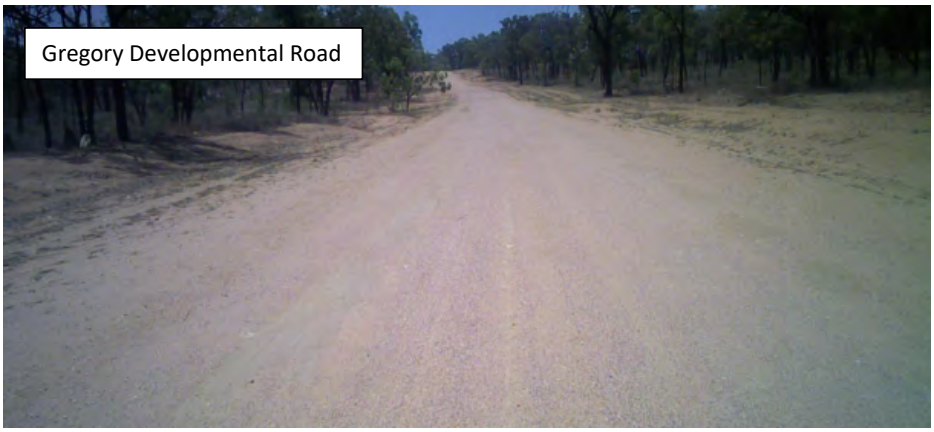
iii) the outcomes of this traffic impact assessment are a true reflection of results of assessment, and that

iv) I believe the strategies recommended for mitigating impacts by this traffic impact assessment, embrace contemporary practice initiatives and will deliver the desired outcomes.

Name:	Luke Rytenskild	RPEQ No:	6293
RPEQ competencies:	Civil Engineer (Traffic Engineering)		
Signature:		Date:	30.4.2026
Postal address:	PO BOX 652 PACIFIC FAIR BROADBEACH		
Email:	Luke@rytenskildtraffic.com		

APPENDIX B – IMAGES OF ROAD CONDITIONS ALONG THE HAULAGE ROUTE

FROM THE SUBJECT SITE TO TOWNSVILLE








Gregory Developmental Road






Gregory Developmental Road






Hervey Range Road






Hervey Range Road





APPENDIX C – PAVEMENT IMPACT CALCULATIONS

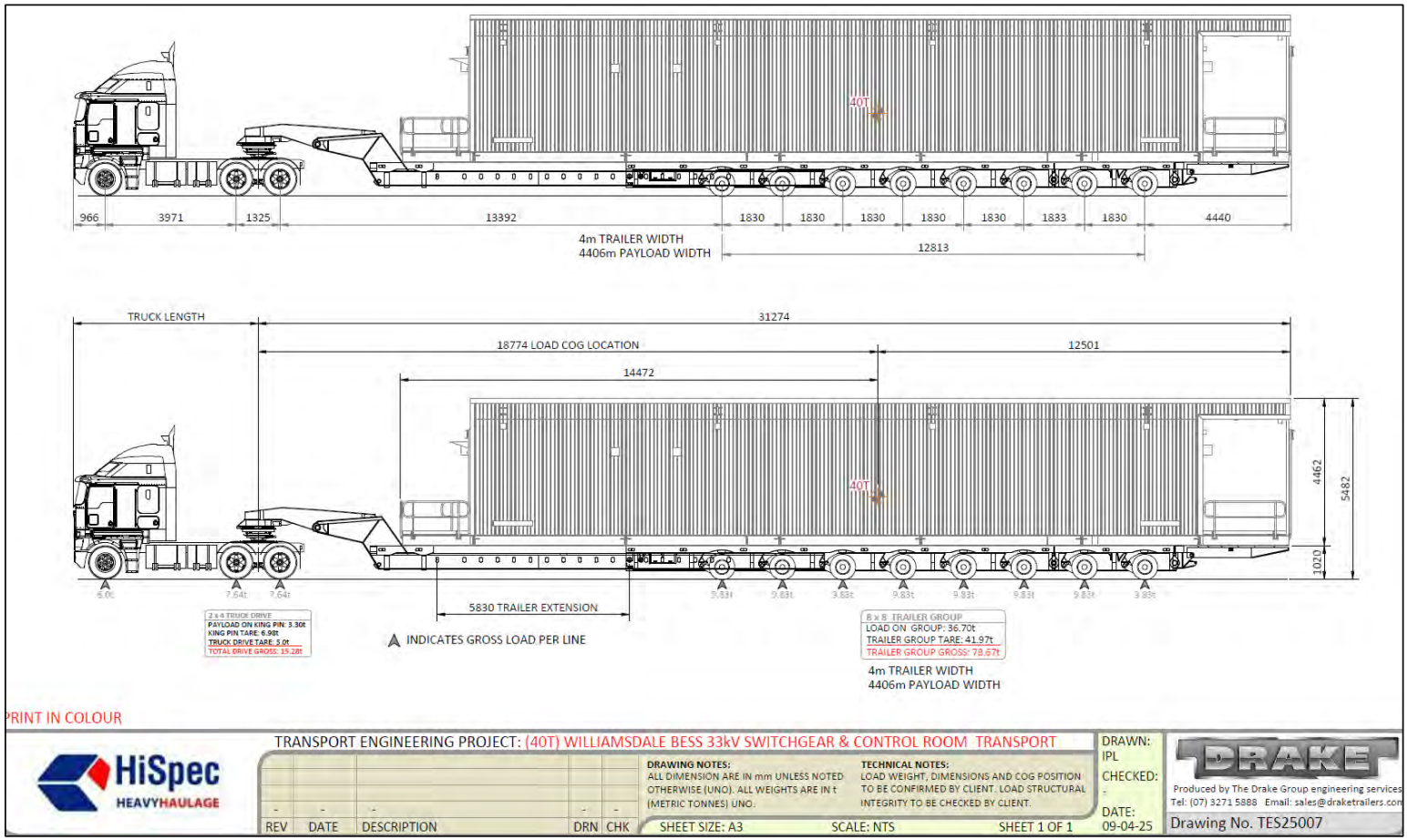
Data analysis contained in Excel spreadsheet available from info@rytenskildtraffic.com

APPENDIX D – VEHICLE CONFIGURATION

TRAFFIC IMPACT ASSESSMENT
KIDSTON BESS PROJECT
RTE REF: 25381

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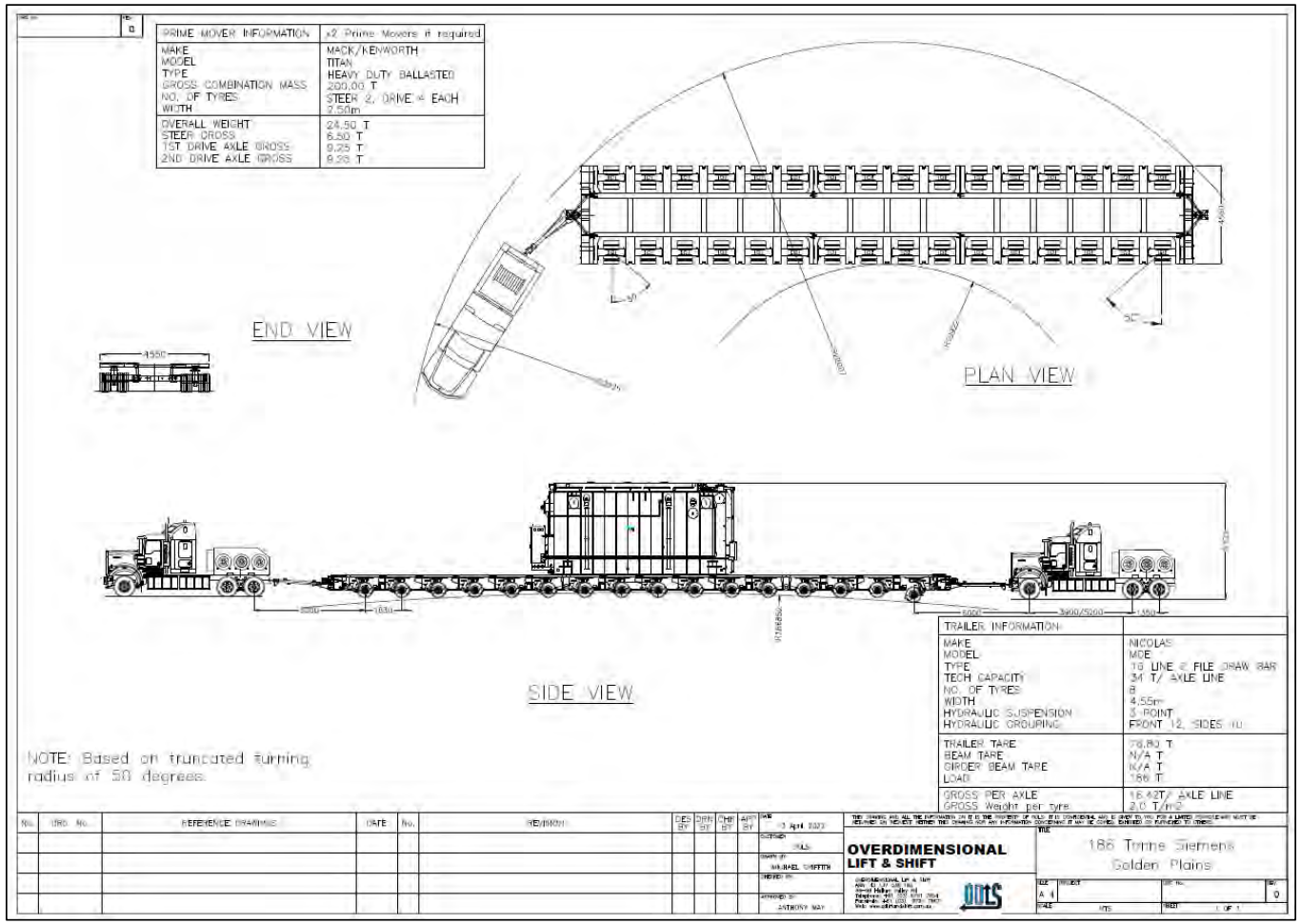
40 TONNE SWITCHGEAR AND CONTROL ROOM



TRAFFIC IMPACT ASSESSMENT
KIDSTON BESS PROJECT
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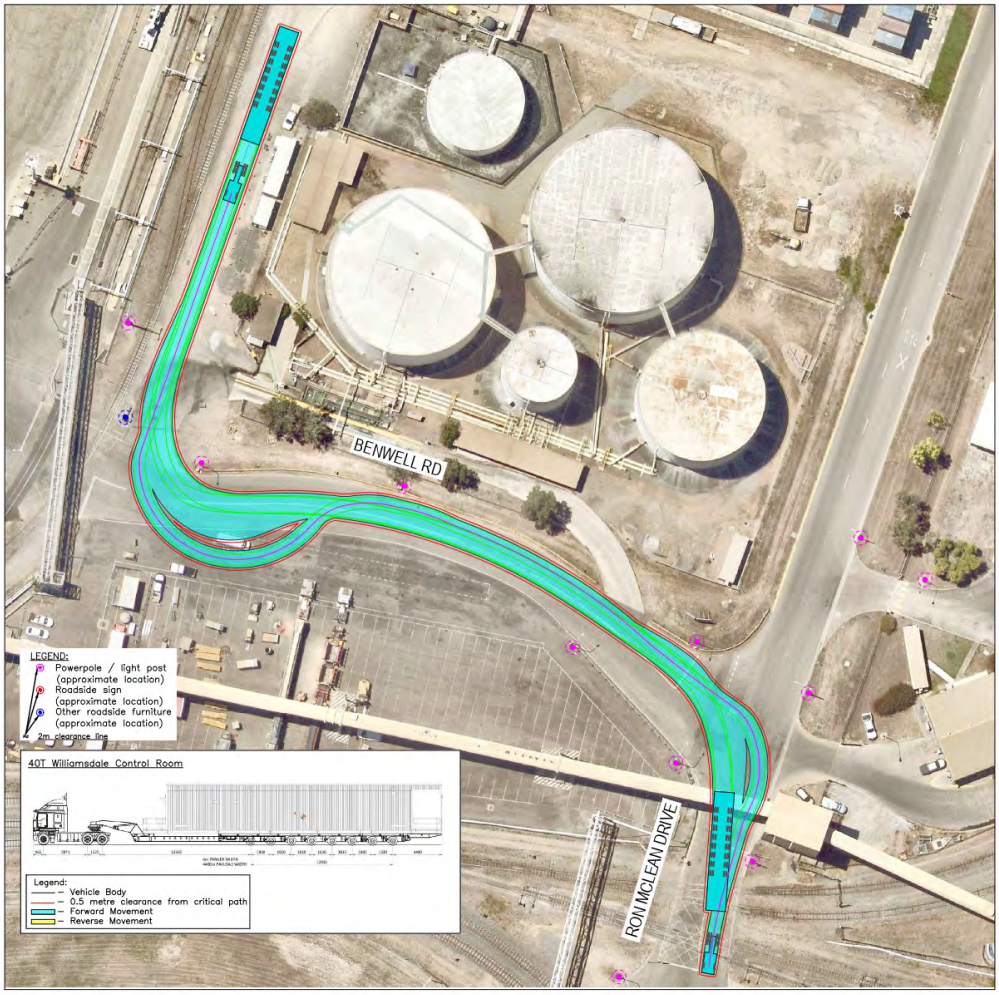
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200 TONNE BESS UNIT

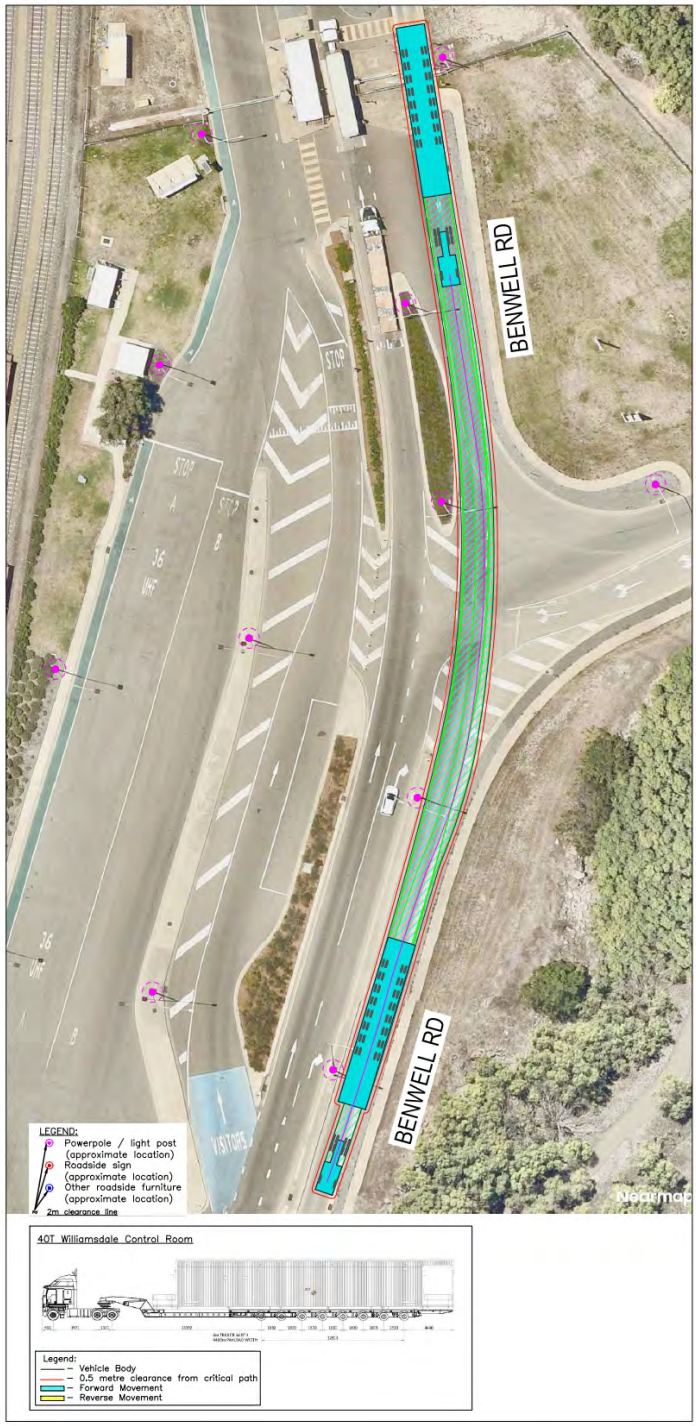


APPENDIX E – OSOM VEHICLE SWEPT PATHS (40T CONTROL ROOM)

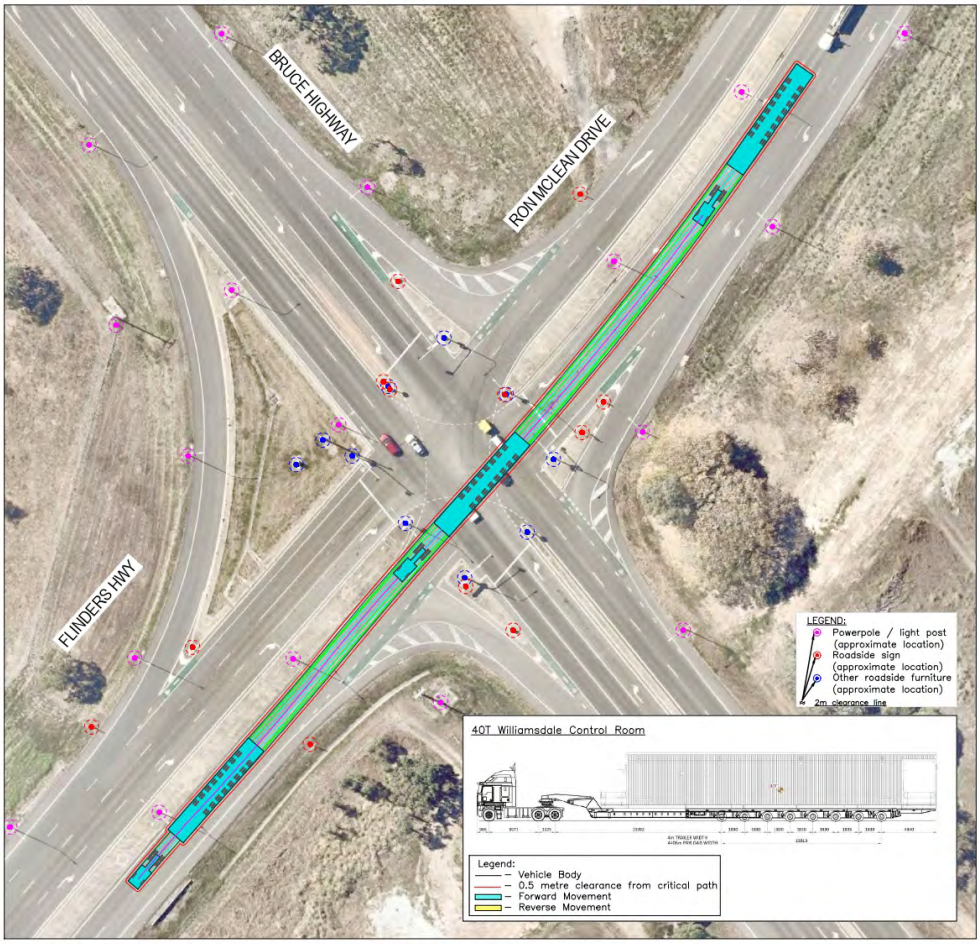
Benwell Rd onto Centenary Drive



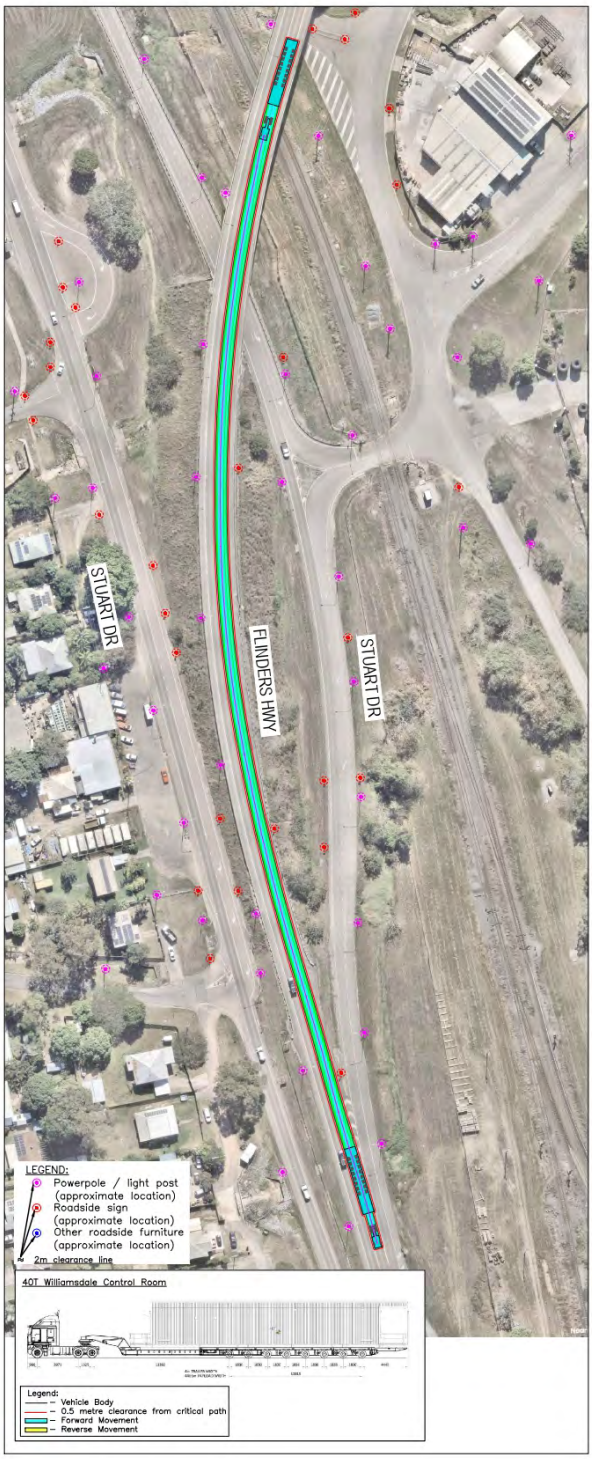
Port Access Gates on Benwell Rd



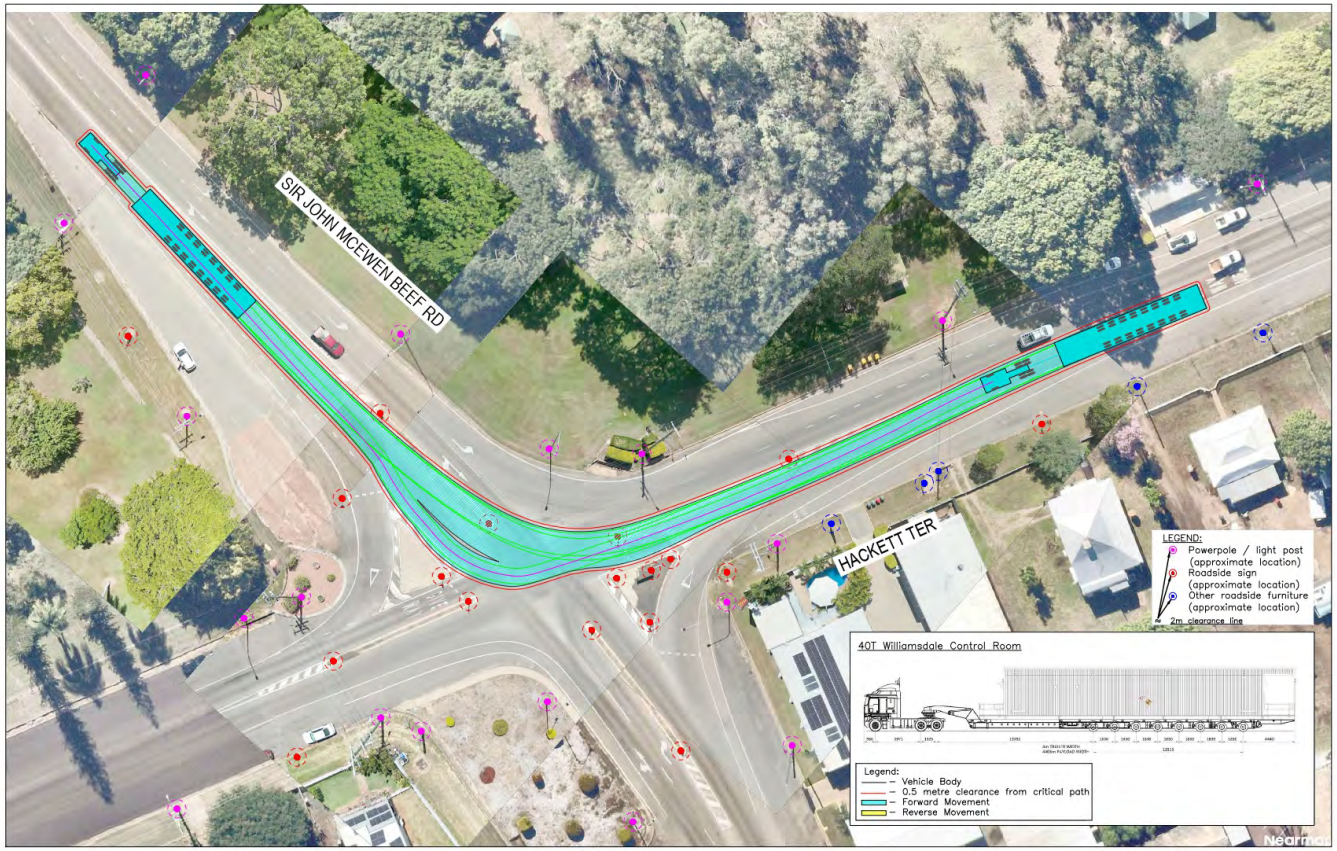
Ron McLean Drive onto the Flinders Hwy



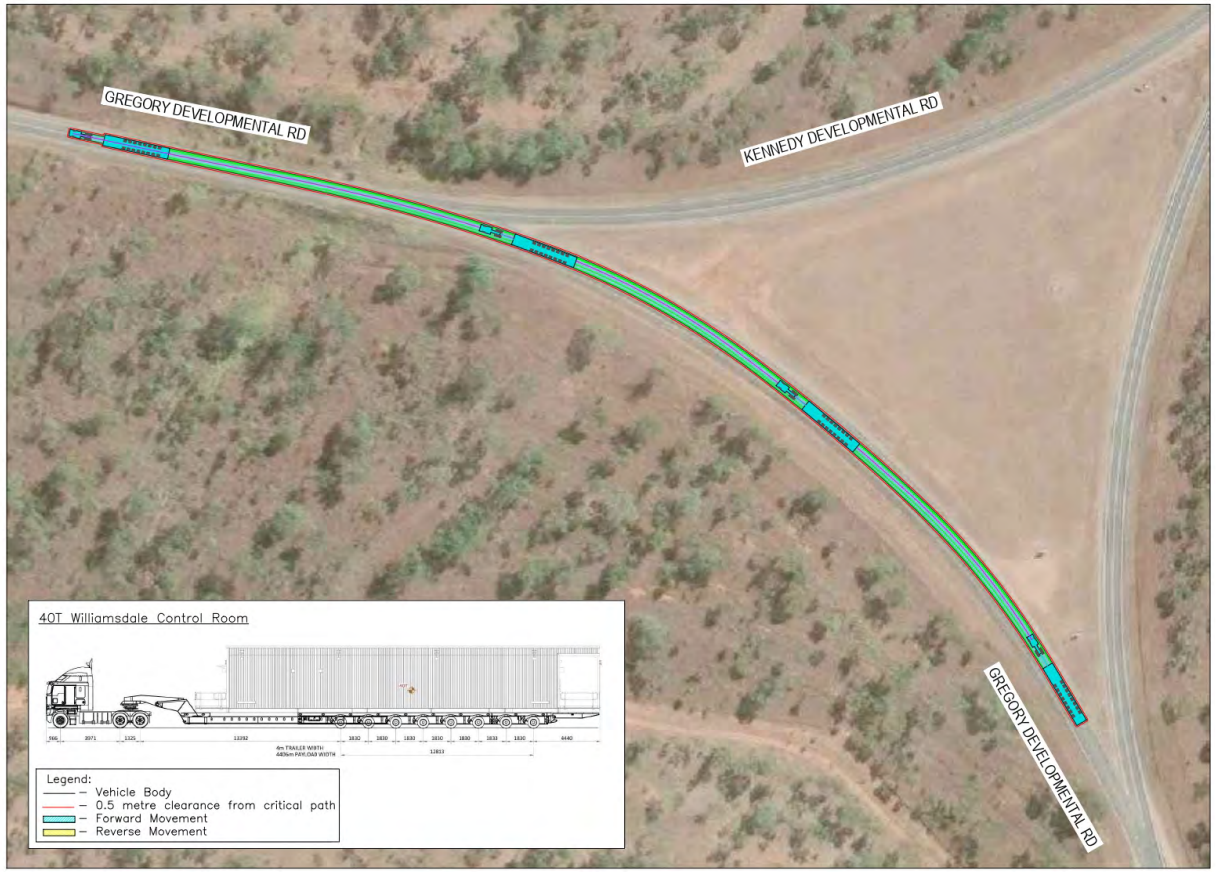
Along Flinders Highway



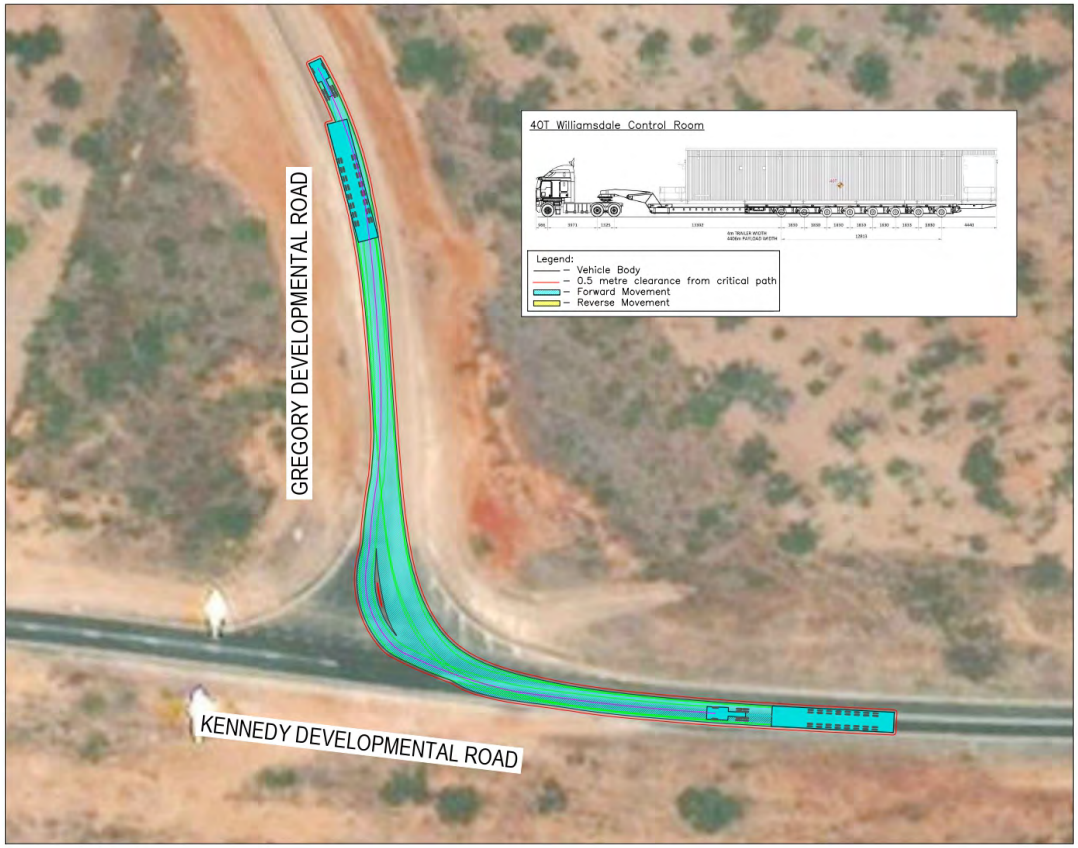
Right turn from Flinders Highway to Gregory Developmental Road



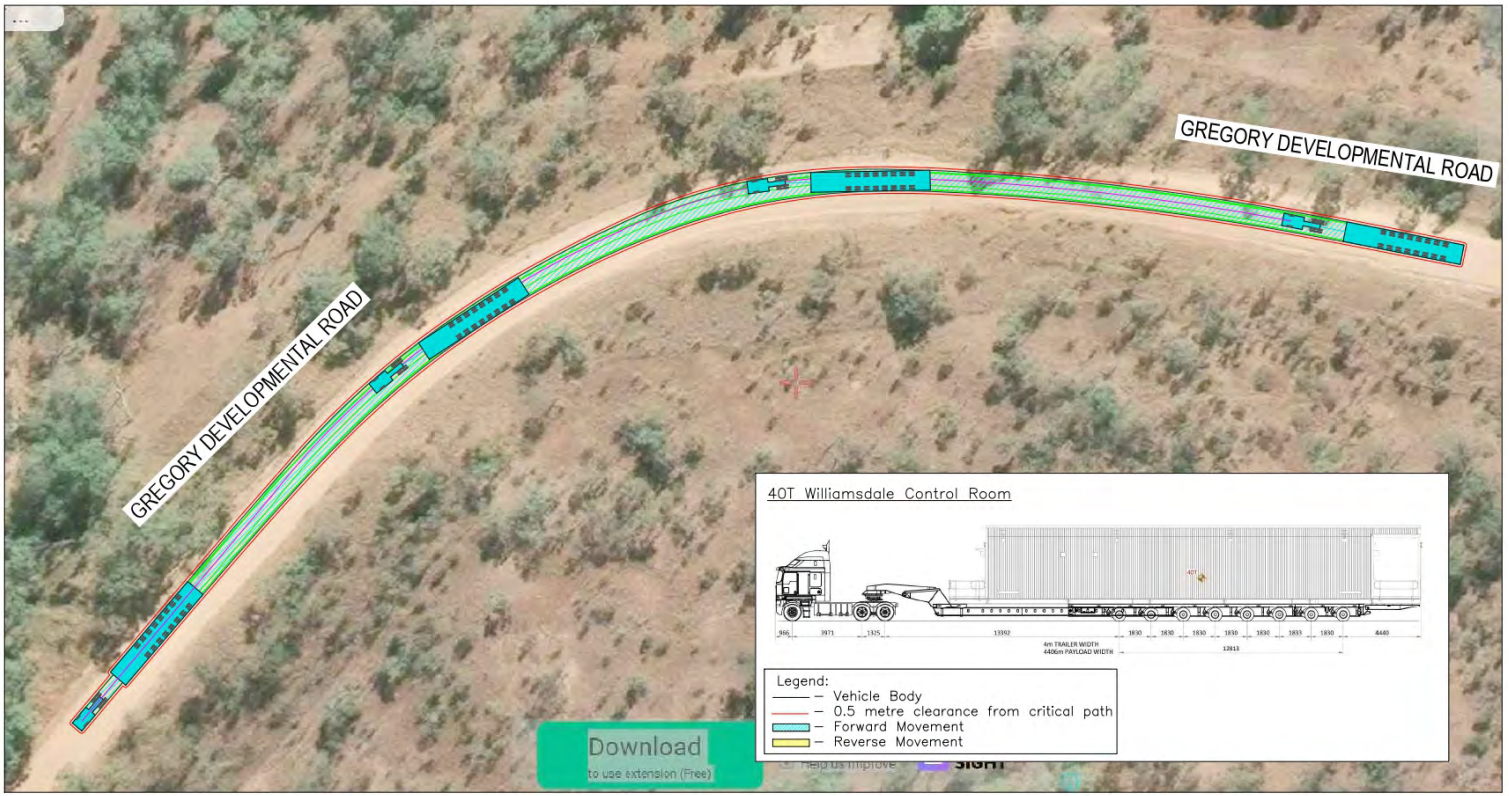
Intersection of Gregory Developmental Rd and Kennedy Developmental Rd



Kennedy Developmental Rd onto Gregory Developmental Rd

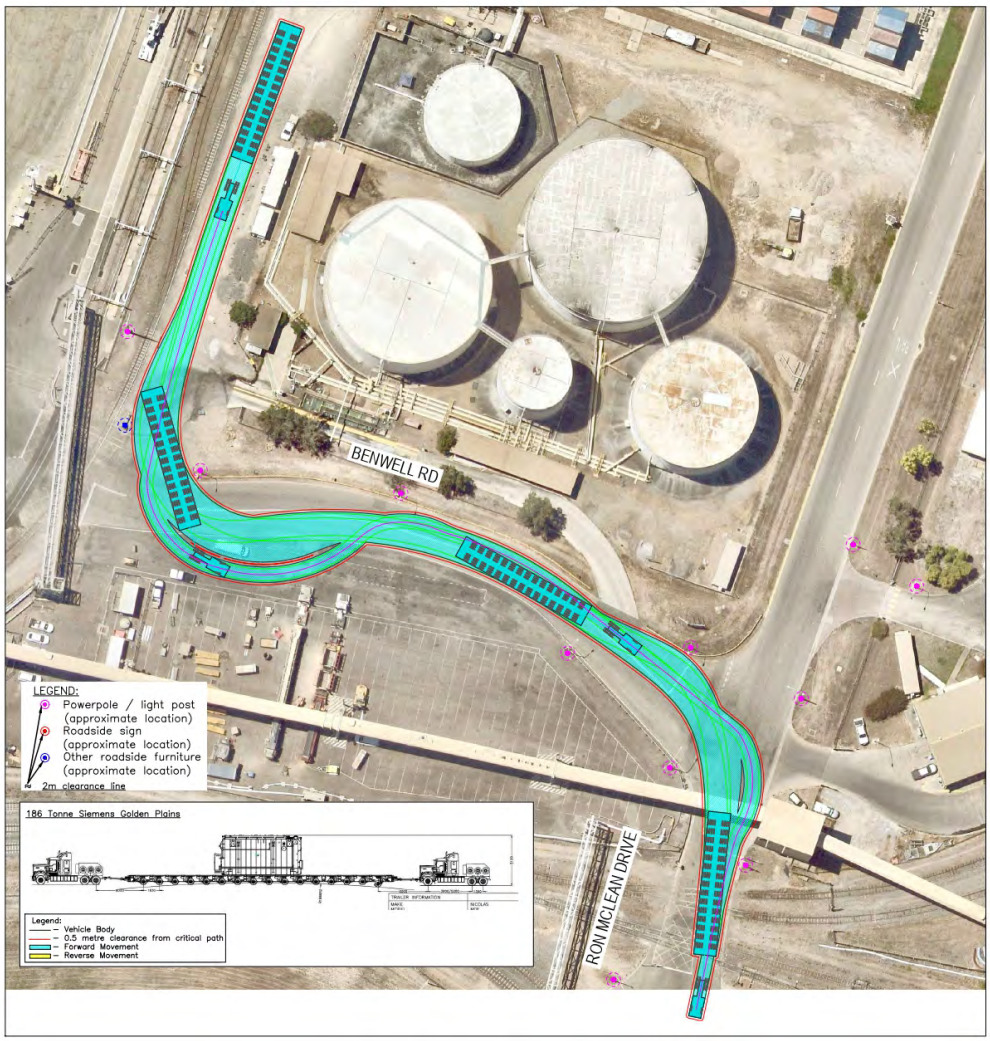


Bend on Gregory Developmental Rd

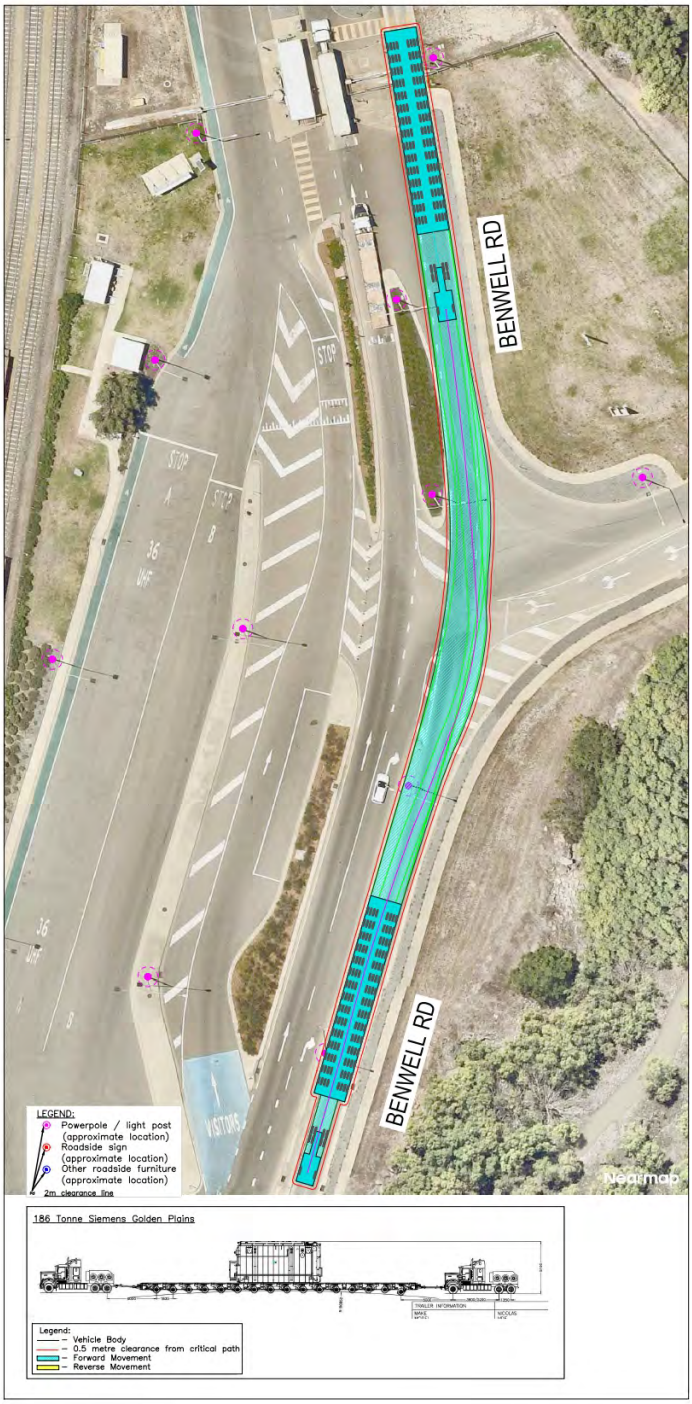


APPENDIX F – OSOM VEHICLE SWEPT PATHS (200T TRANSFORMER LOAD)

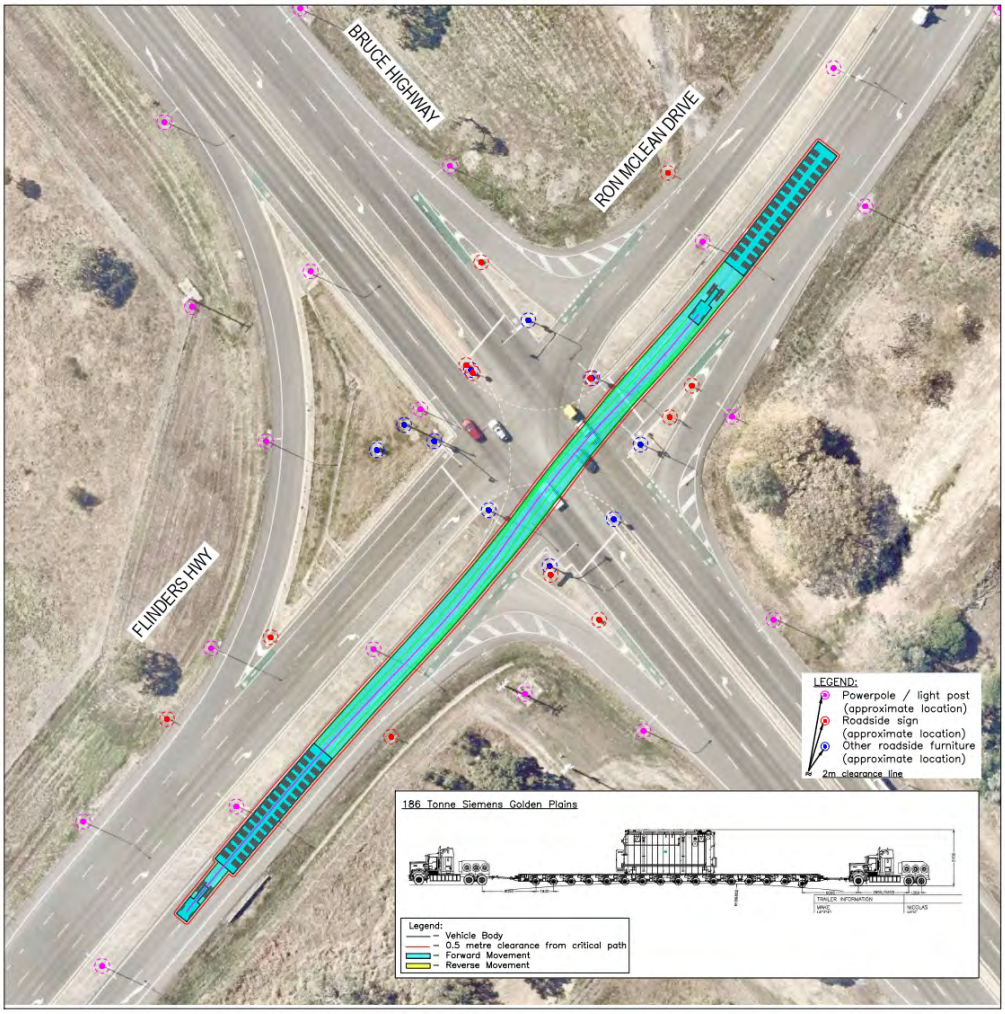
Benwell Rd onto Centenary Drive



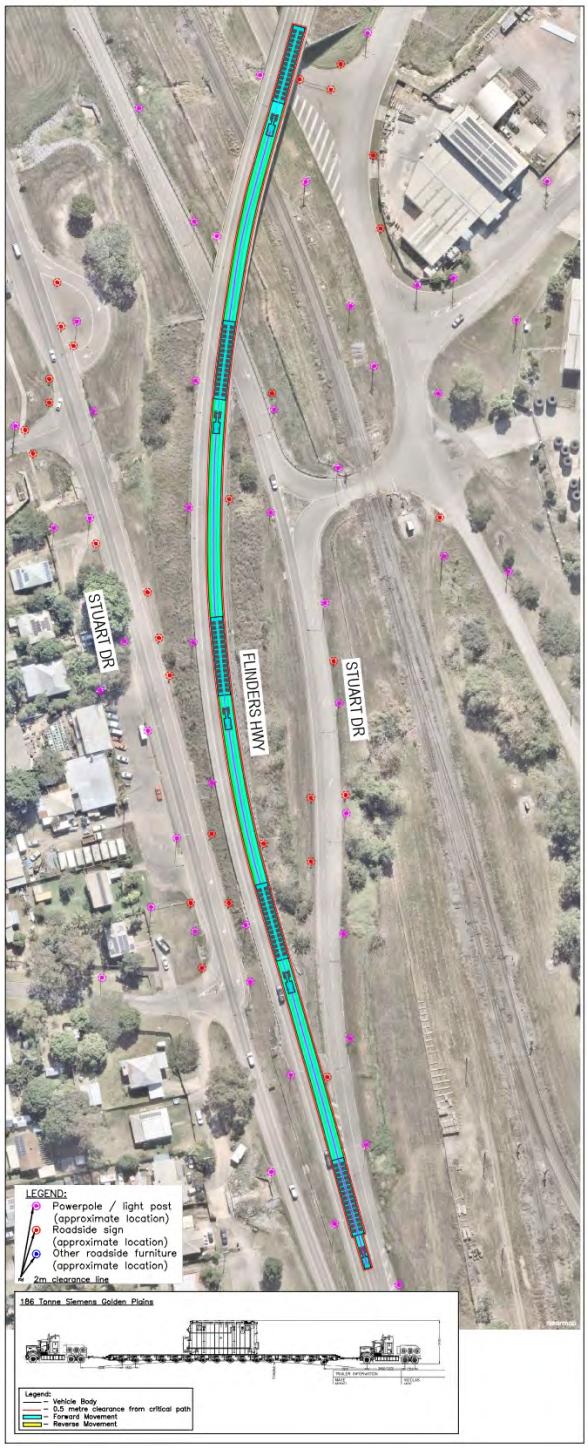
Port Access Gates on Benwell Rd



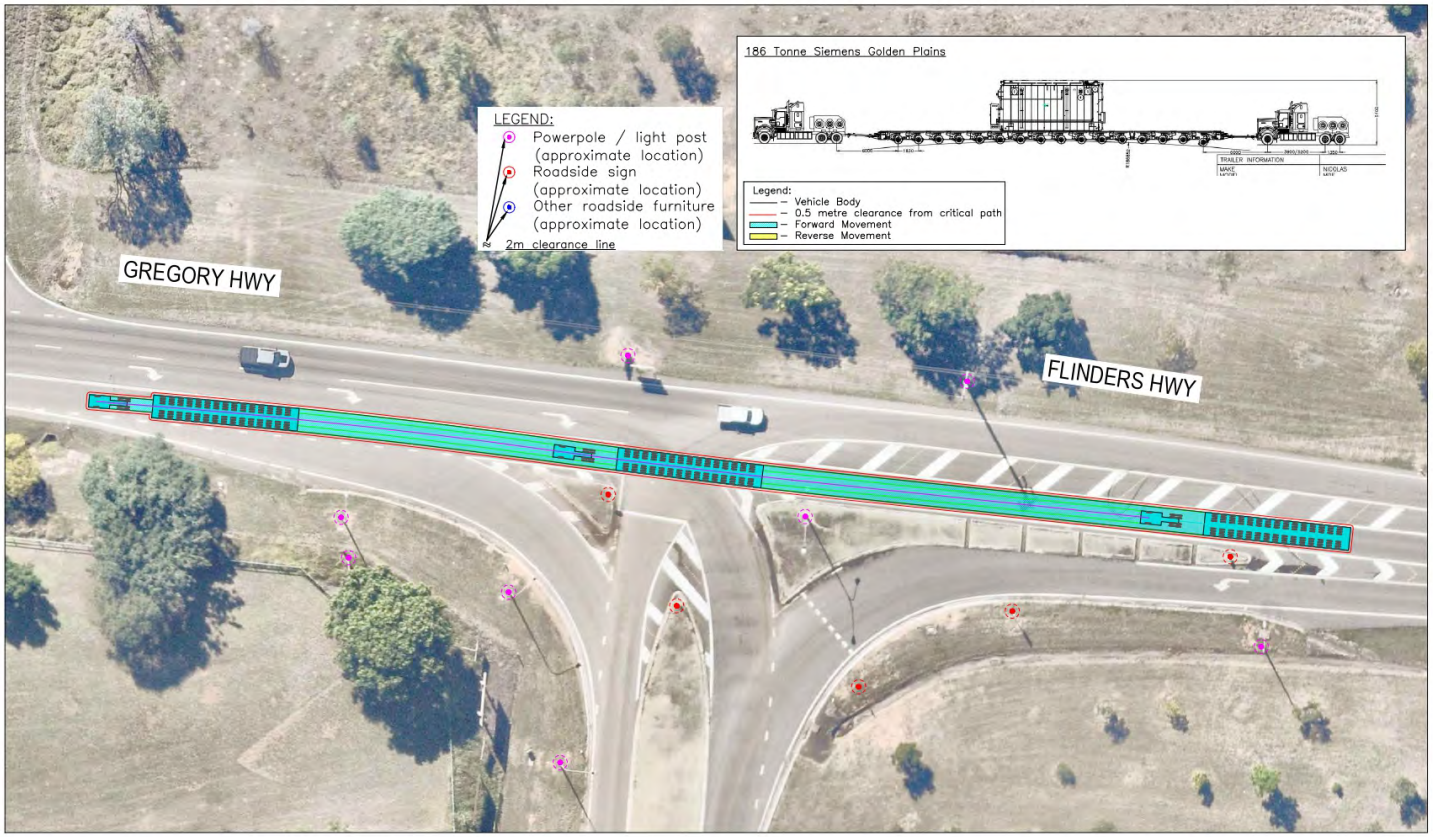
Ron McLean Drive onto the Flinders Hwy



Along Flinders Highway

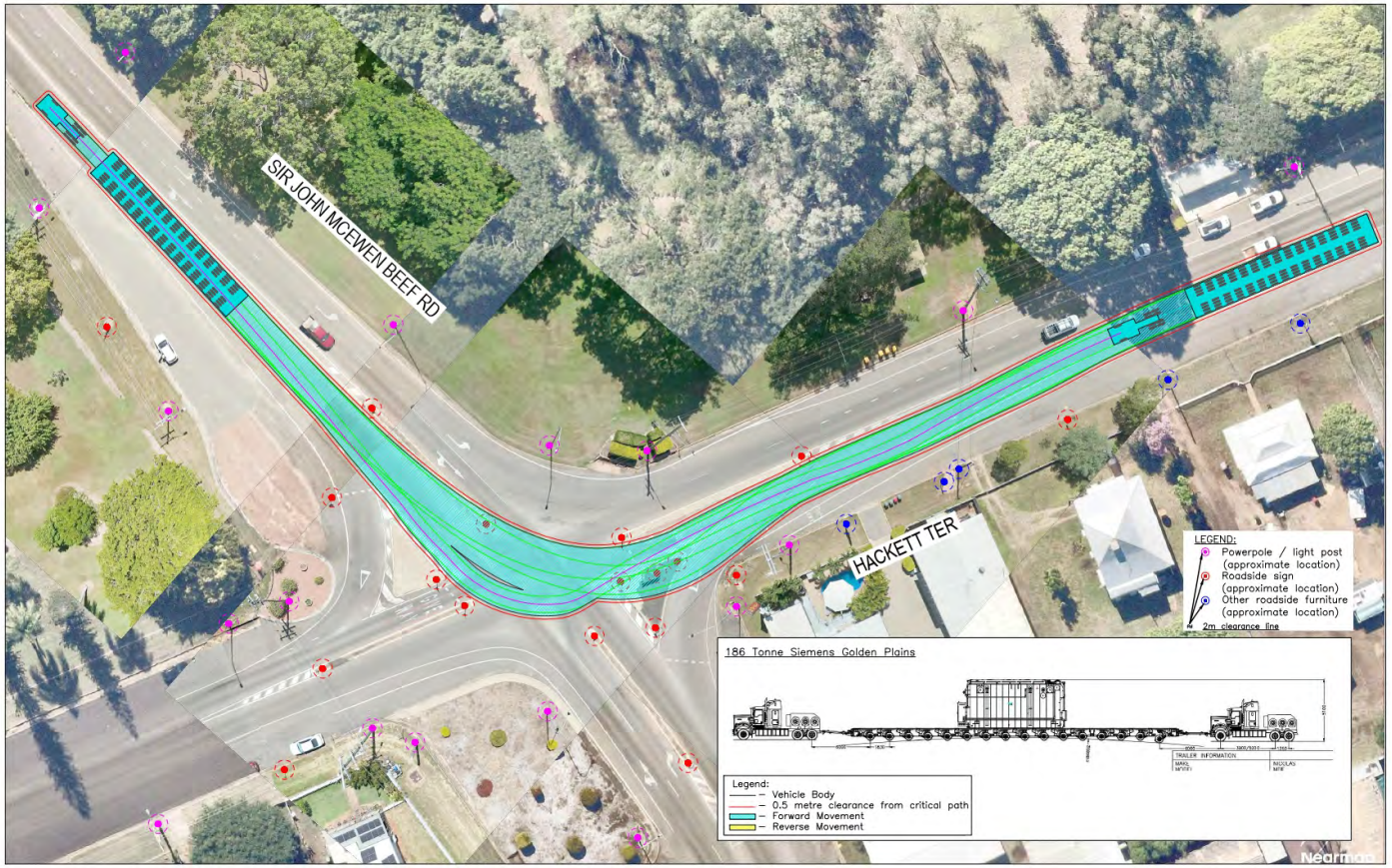


Flinders Hwy onto Gregory Hwy

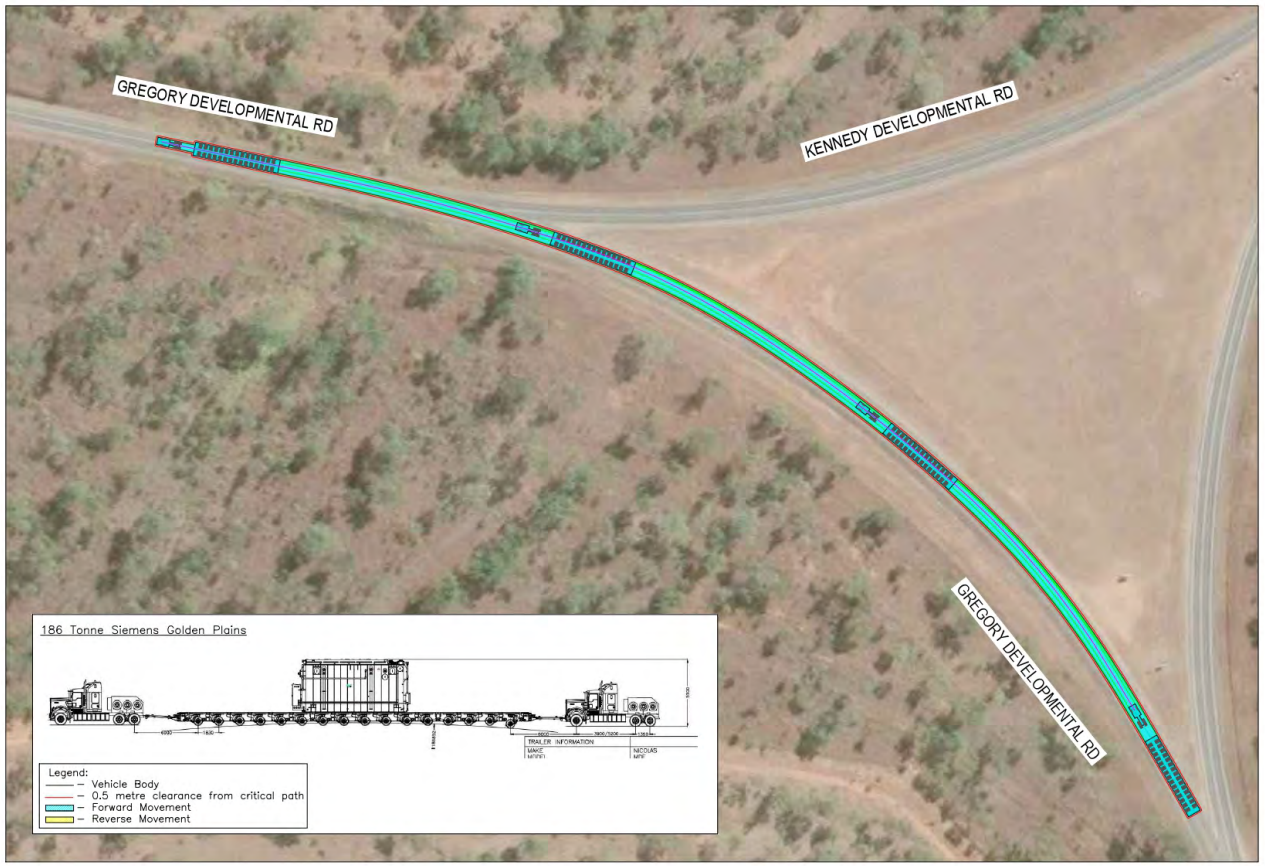


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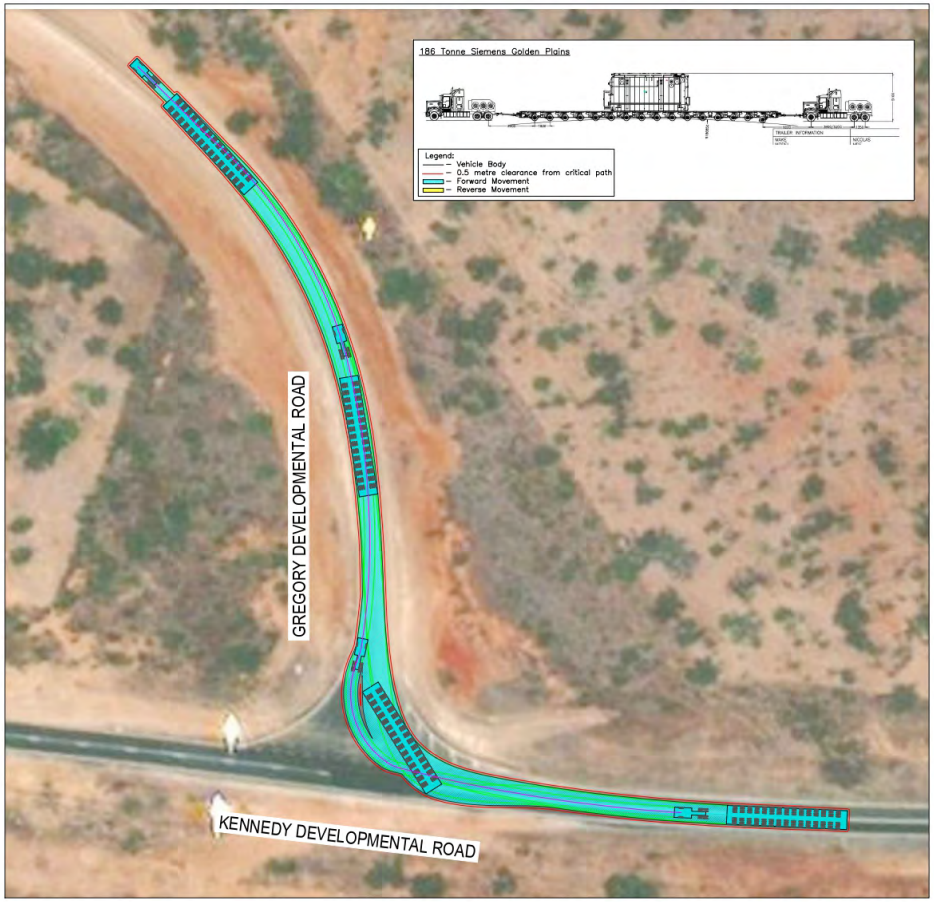
Hackett Ter onto Sir John McEwen Beef Rd



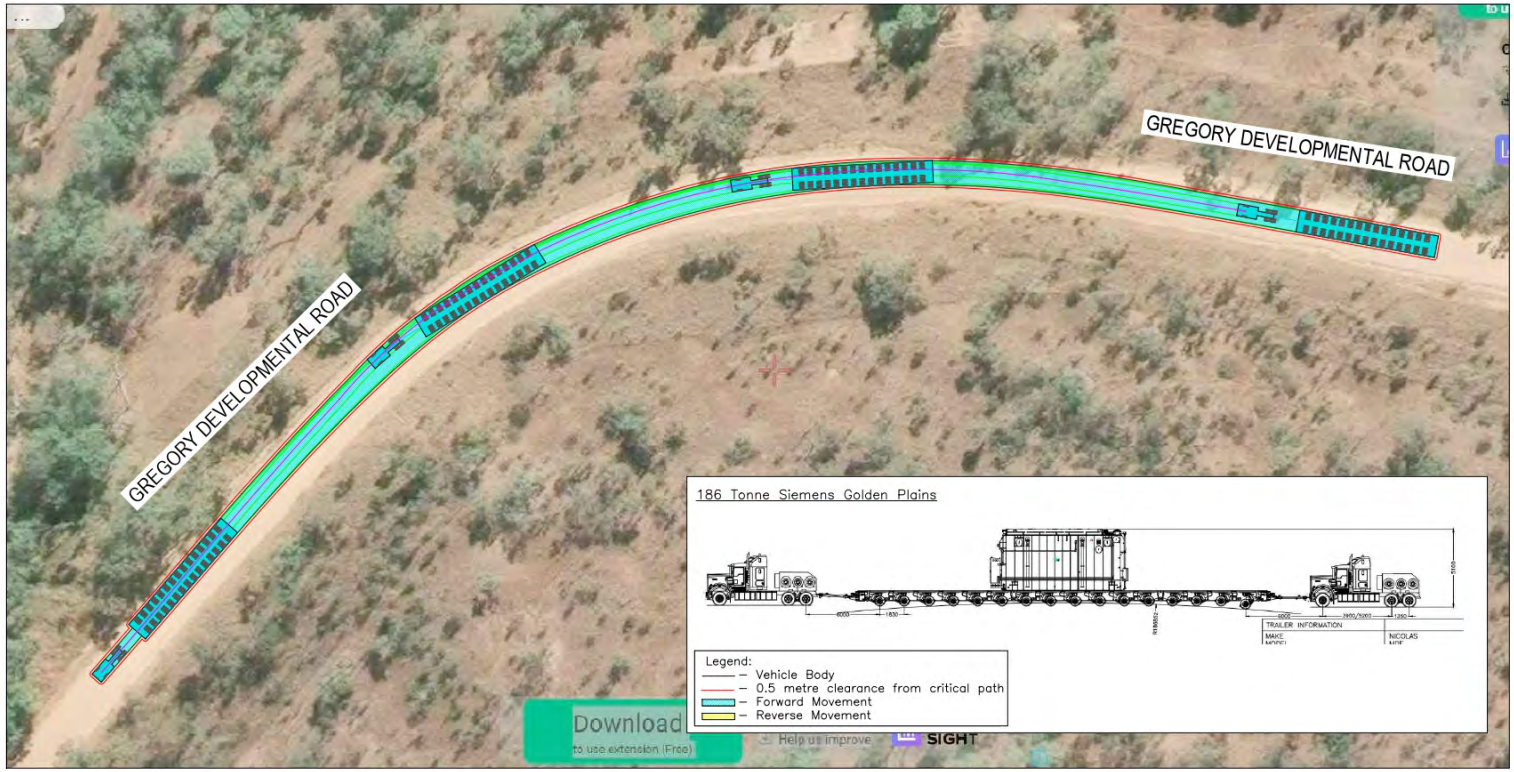
Intersection of Gregory Developmental Rd and Kennedy Developmental Rd



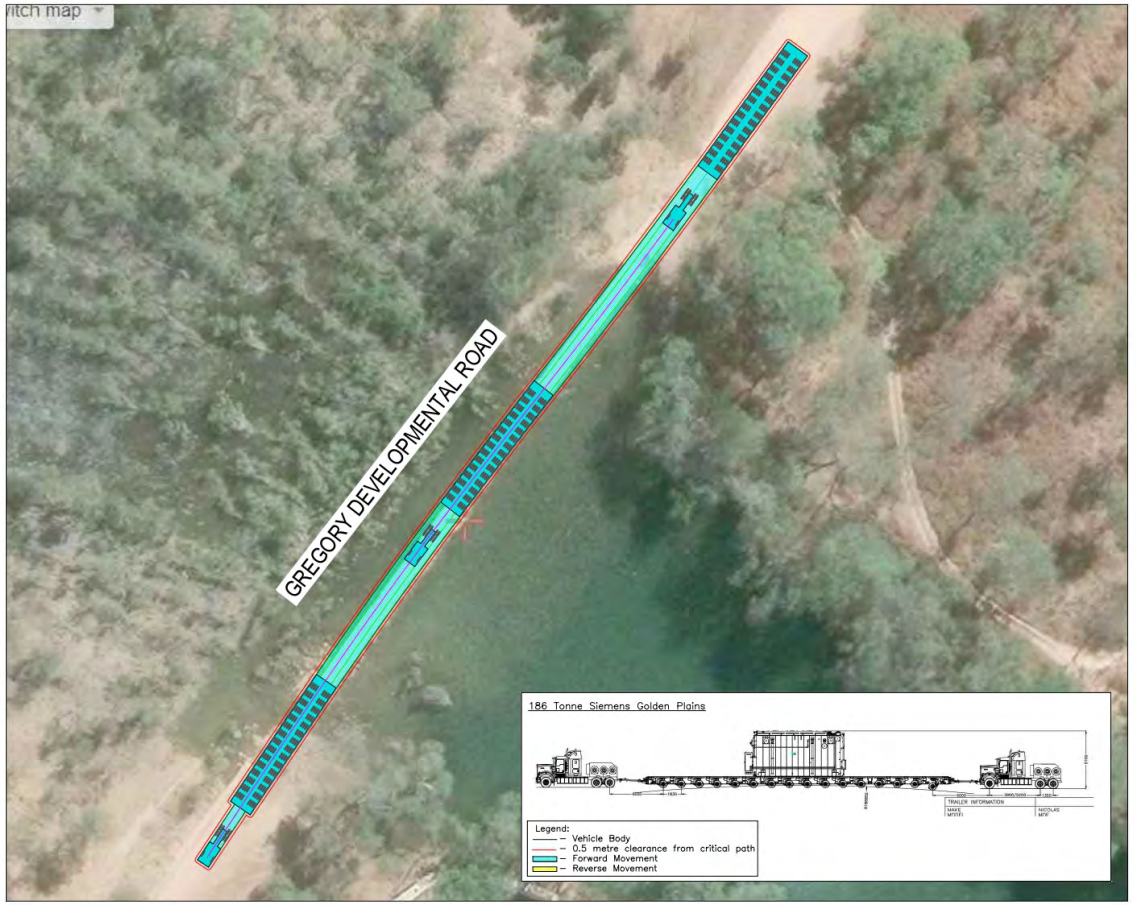
Kennedy Developmental Rd onto Gregory Developmental Rd



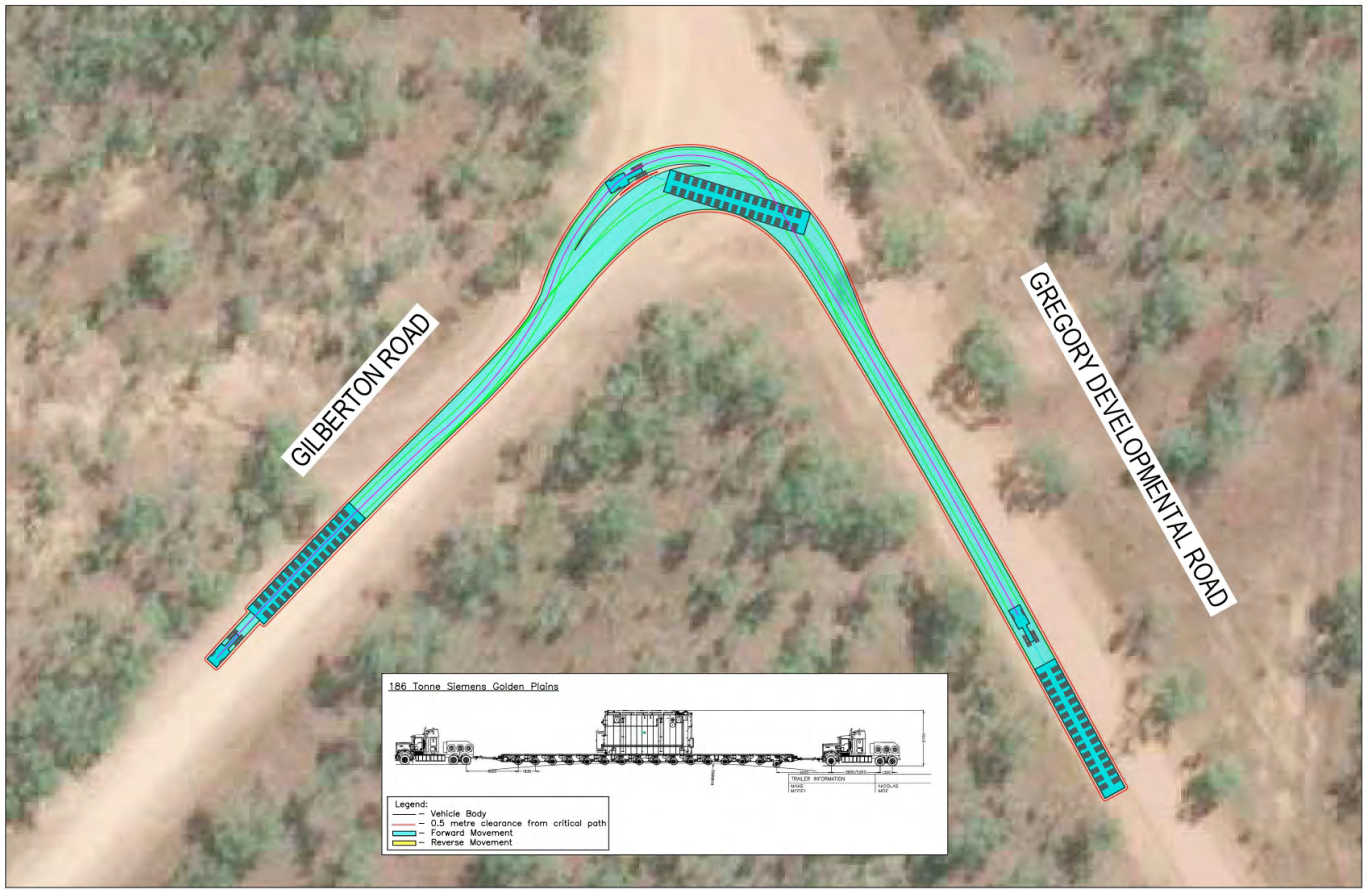
Bend on Gregory Developmental Rd



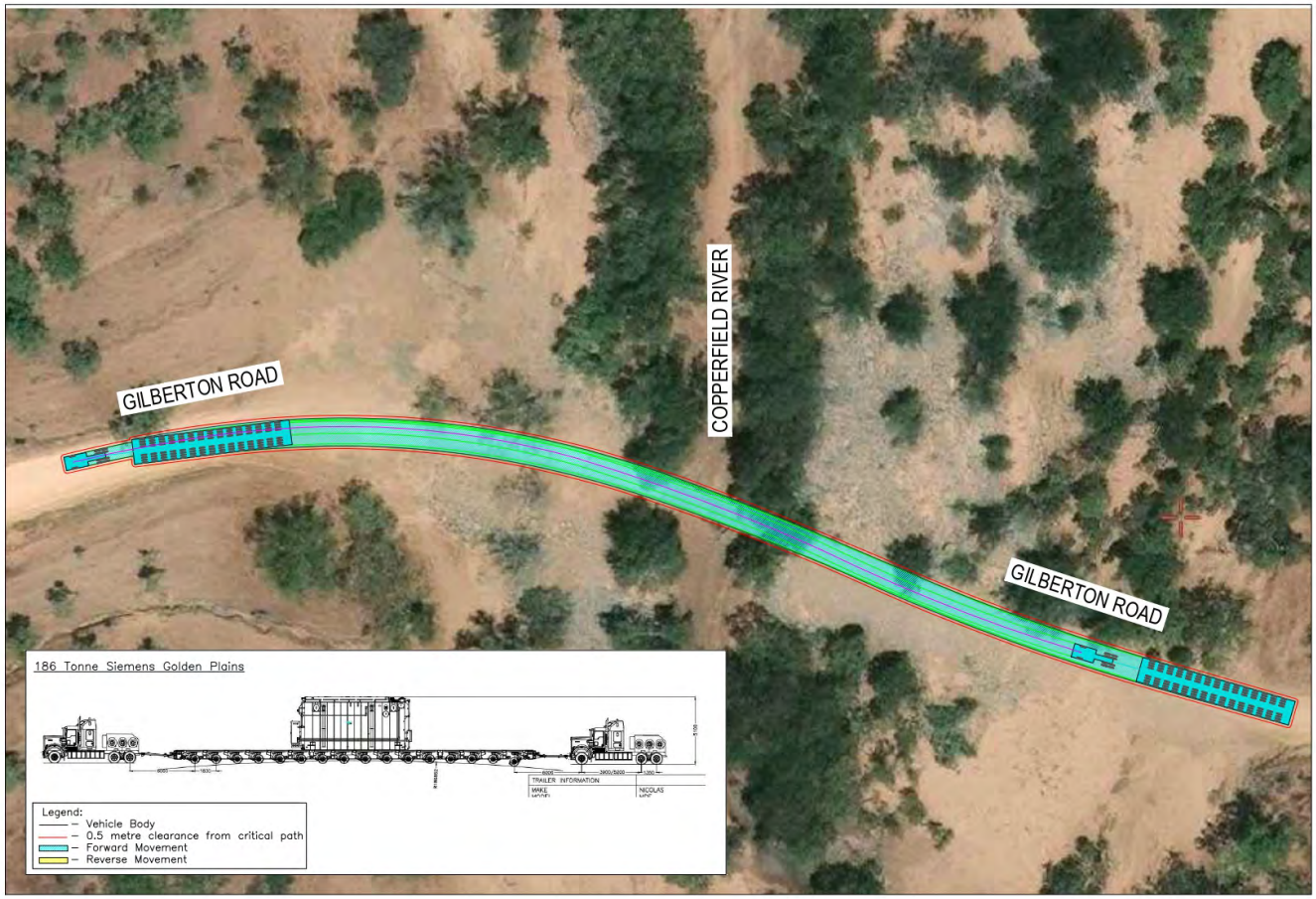
Gregory Hwy over the Einasleigh River



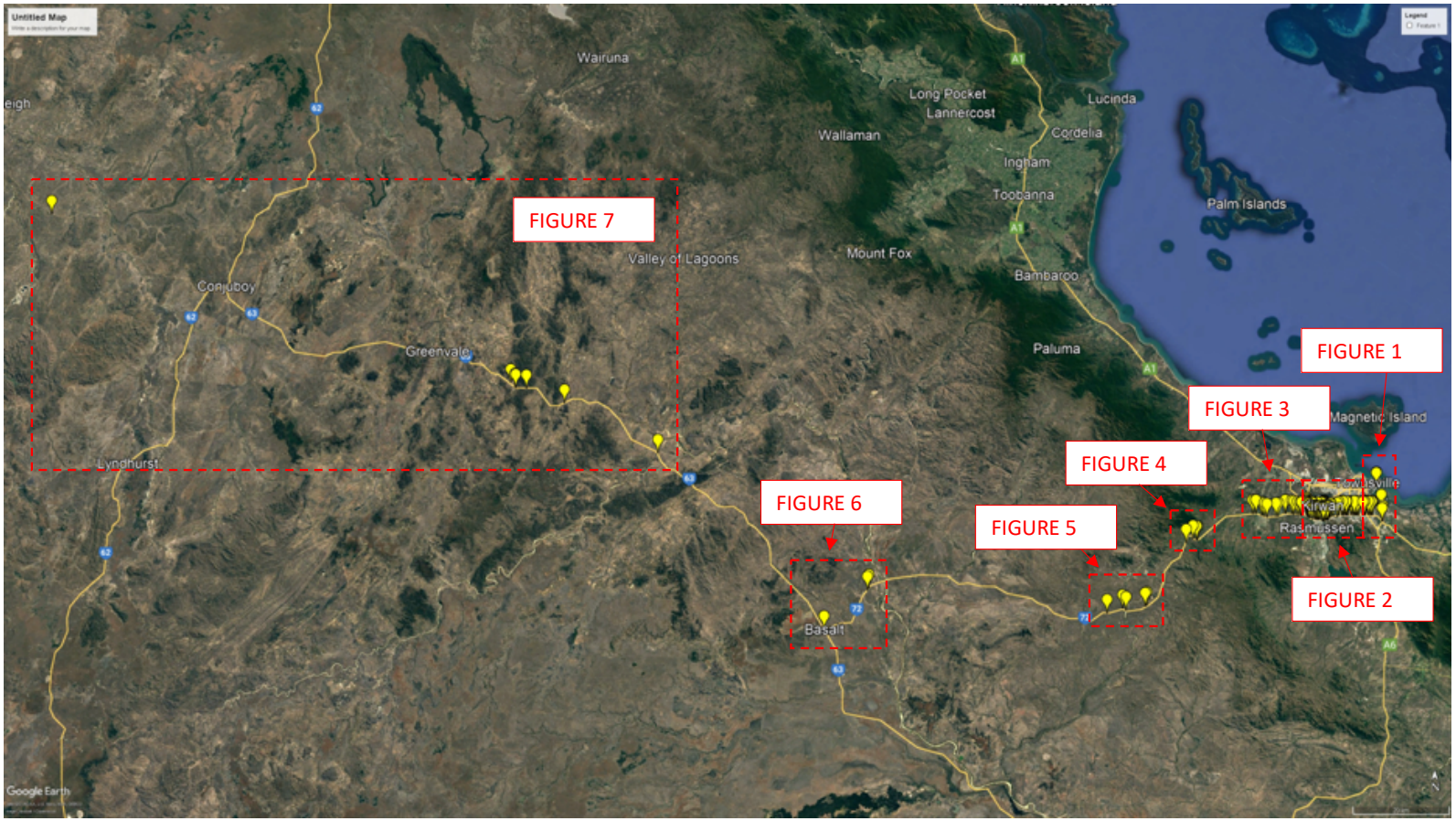
Gregory Developmental Rd onto Gilberton Rd

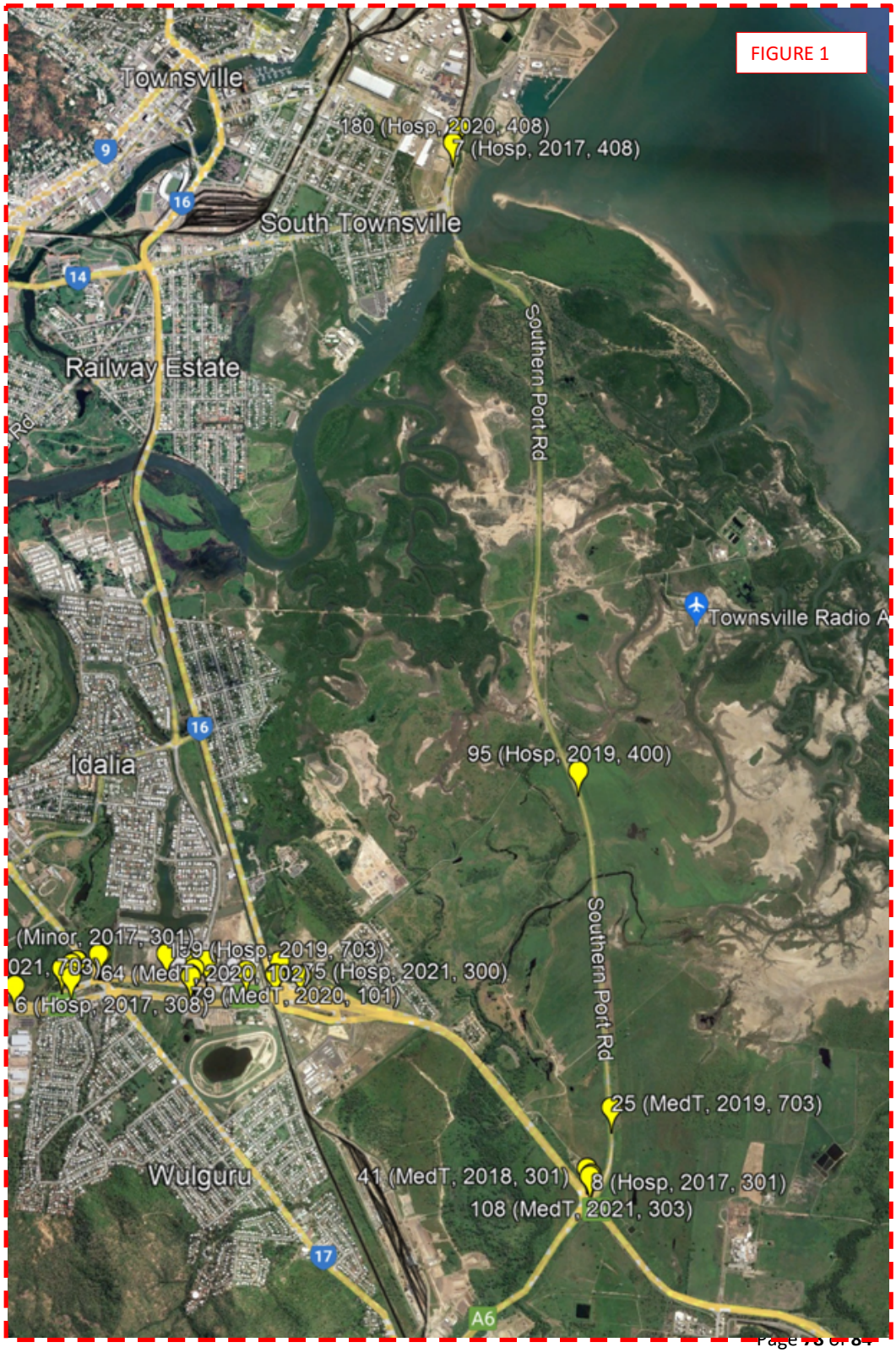


Gilberton Rd at Copperfield River



APPENDIX G – CRASH DATA RESULTS


FIGURE 7
FIGURE 1
FIGURE 3
FIGURE 4
FIGURE 6
FIGURE 5
FIGURE 2
Wairuna
Long Pocket
Lannercost
Lucinda
Wallaman
Cordelia
Ingham
Toobanna
Palm Islands
Mount Fox
Valley of Lagoons
Bambaroo
Paluma
Conjuboy
Greenvale
Lynghurst
Magnetic Island
Rasmussen
Basalt
Google Earth


FIGURE 1
Townsville
South Townsville
Railway Estate
Idalia
Wulguru
Townsville Radio A
Southern Port Rd
Southern Port Rd
180 (Hosp, 2020, 408)
7 (Hosp, 2017, 408)
95 (Hosp, 2019, 400)
(Minor, 2017, 301)
(Hosp, 2019, 703)
64 (MedT, 2020, 102)
5 (Hosp, 2021, 300)
79 (MedT, 2020, 101)
6 (Hosp, 2017, 308)
25 (MedT, 2019, 703)
41 (MedT, 2018, 301)
8 (Hosp, 2017, 301)
108 (MedT, 2021, 303)
9
16
14
16
17
A6

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FIGURE 3

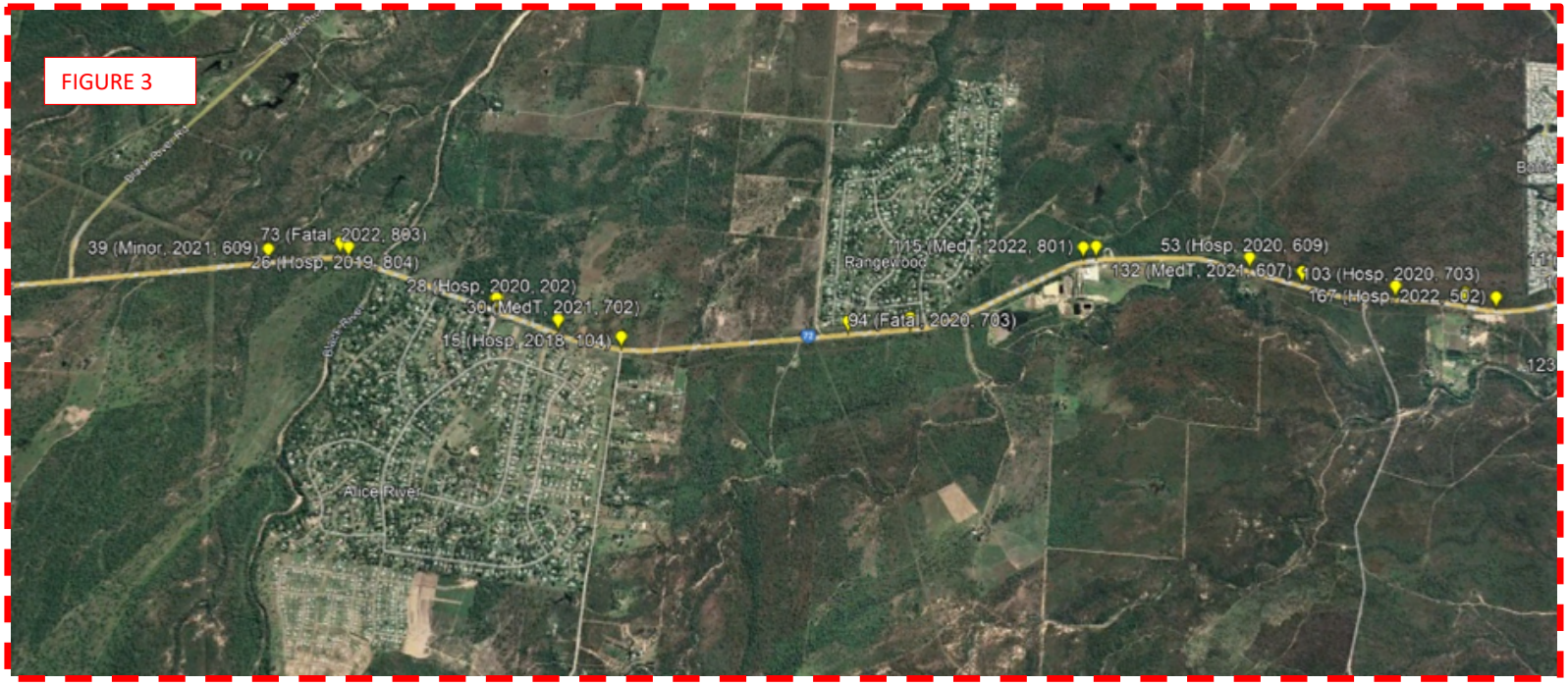

39 (Minor, 2021, 609)
73 (Fatal, 2022, 803)
26 (Hosp, 2019, 804)
28 (Hosp, 2020, 202)
30 (MedT, 2021, 702)
15 (Hosp, 2018, 104)
115 (MedT, 2022, 801)
Rangewood
53 (Hosp, 2020, 609)
132 (MedT, 2021, 607)
103 (Hosp, 2020, 703)
167 (Hosp, 2022, 502)
94 (Fatal, 2020, 703)
Alice River

FIGURE 4

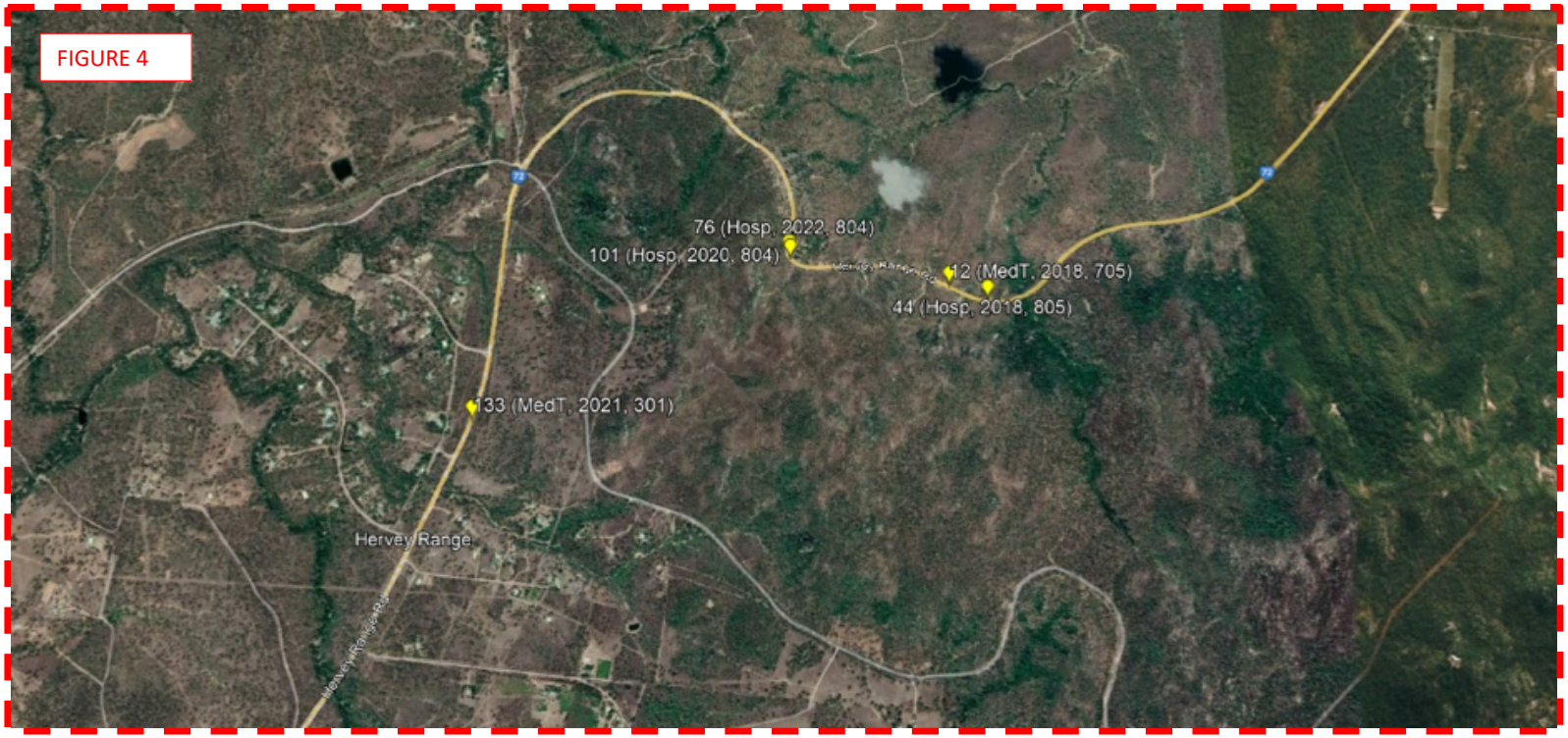

76 (Hosp, 2022, 804)
101 (Hosp, 2020, 804)
12 (MedT, 2018, 705)
44 (Hosp, 2018, 805)
133 (MedT, 2021, 301)
Hervey Range
Hervey Range Rd

FIGURE 5

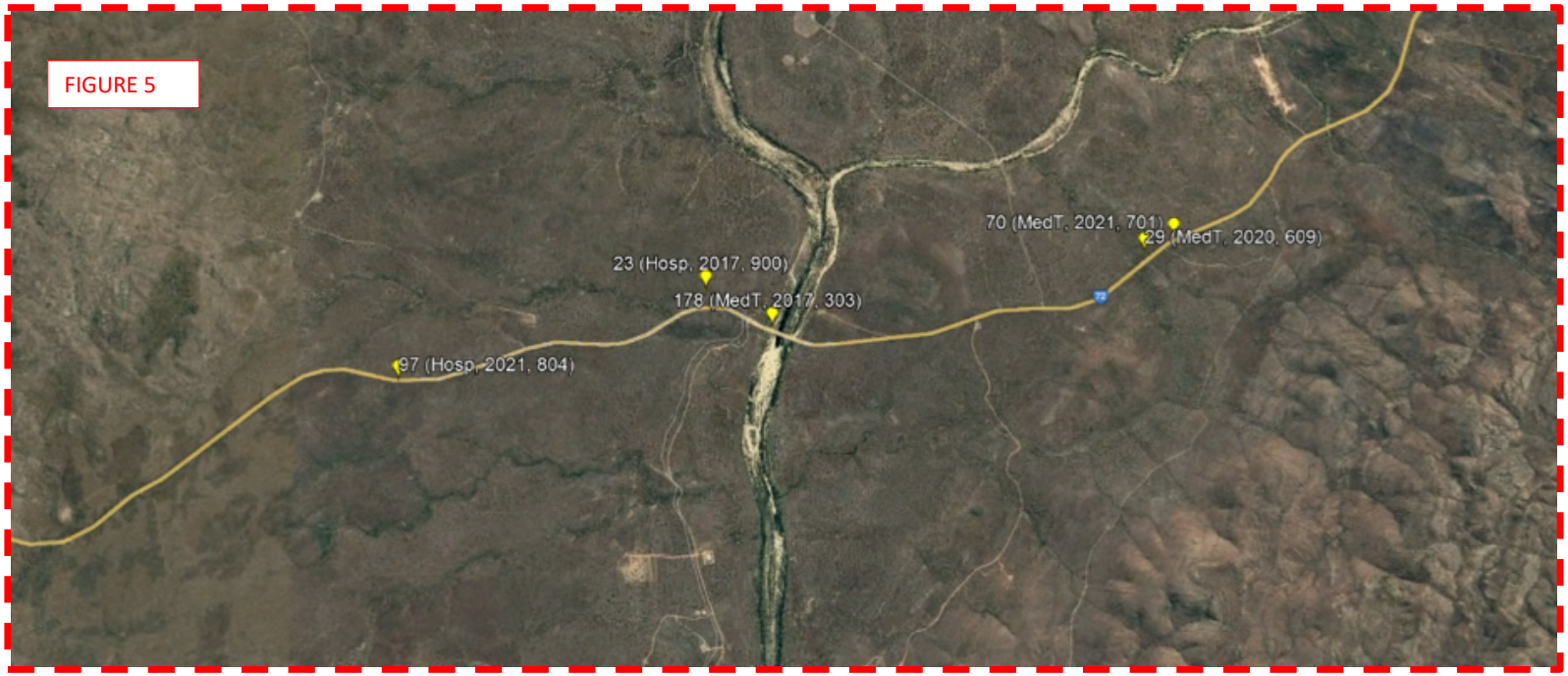
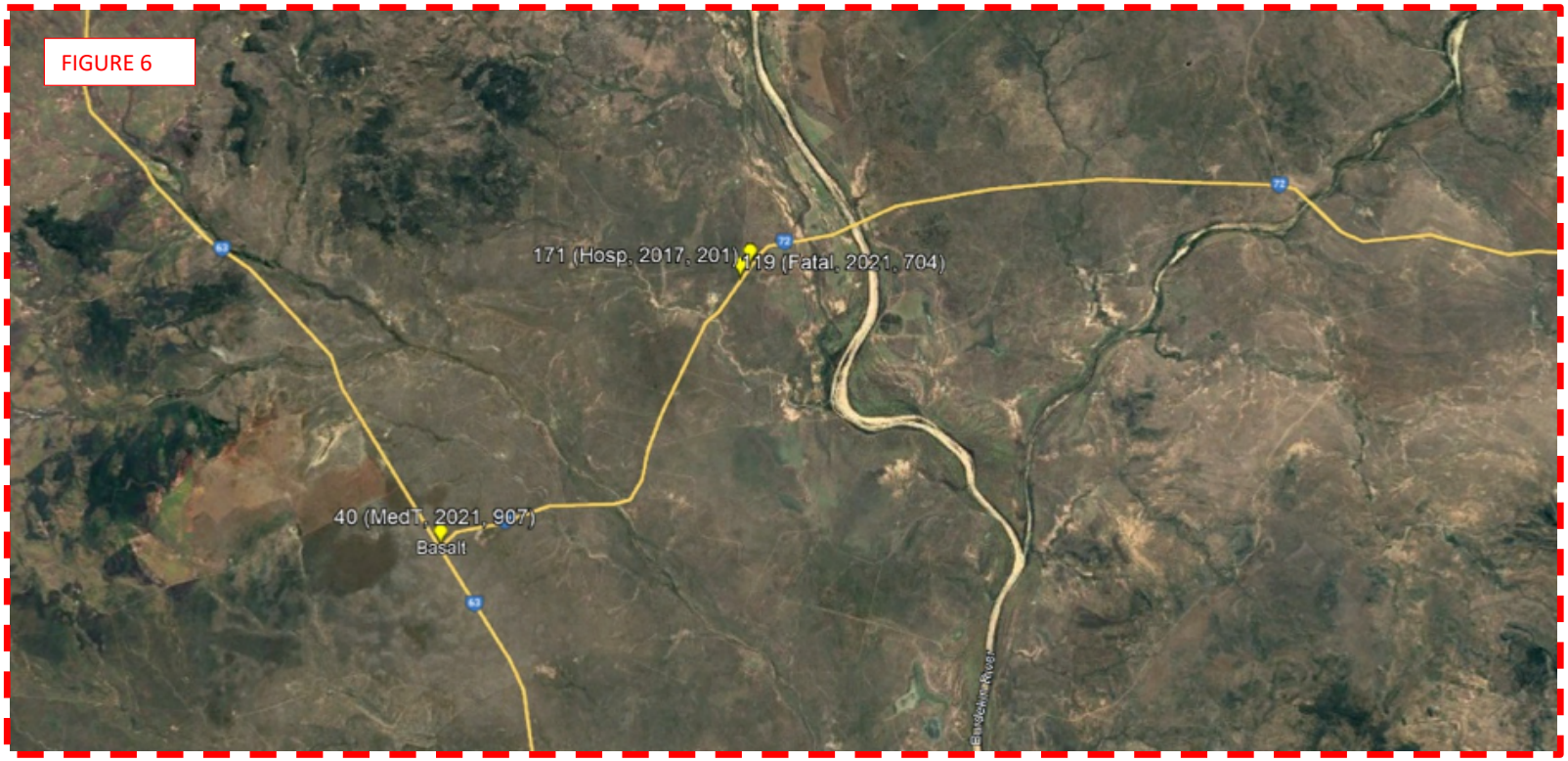
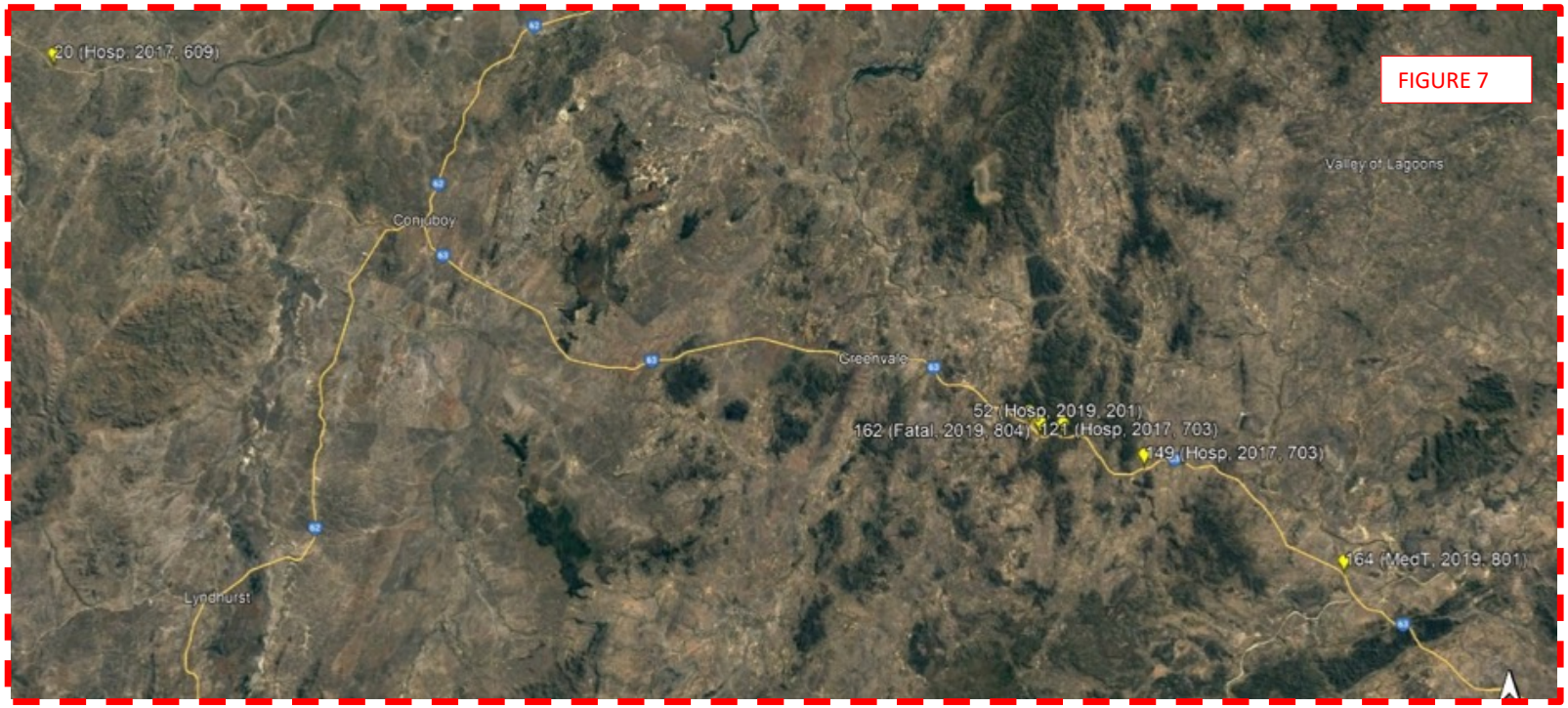

70 (MedT, 2021, 701)
29 (MedT, 2020, 609)
23 (Hosp, 2017, 900)
178 (MedT, 2017, 303)
97 (Hosp, 2021, 804)

FIGURE 6

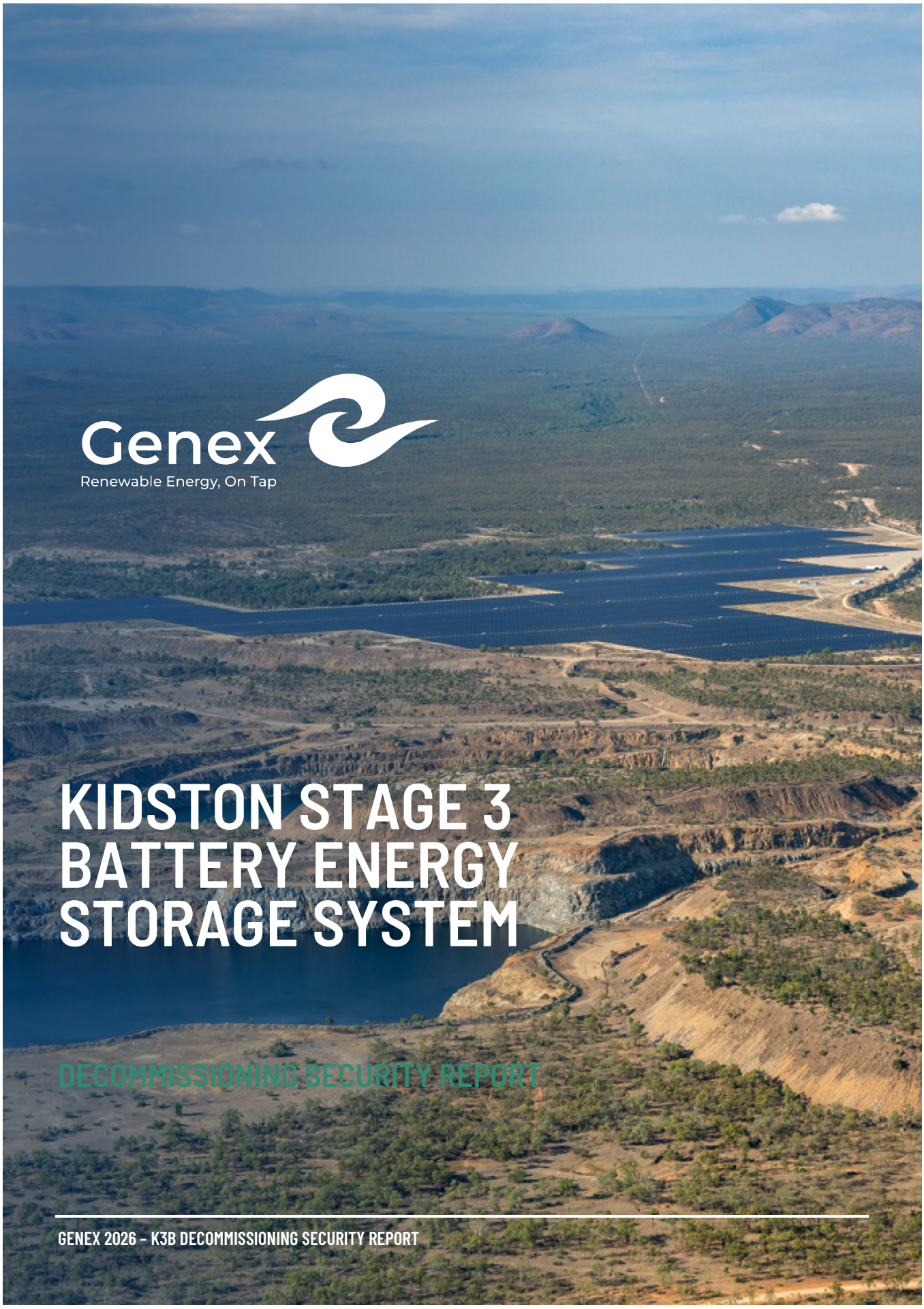


TRAFFIC IMPACT ASSESSMENT
KIDSTON BESS PROJECT
RTE REF: 25381

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Appendix O Decommissioning Security Report


Genex
Renewable Energy, On Tap
KIDSTON STAGE 3
BATTERY ENERGY
STORAGE SYSTEM
DECOMMISSIONING SECURITY REPORT
GENEX 2026 – K3B DECOMMISSIONING SECURITY REPORT

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1. INTRODUCTION

1.1 Purpose

This Decommissioning Security Report has been prepared to support the Development Application for the Kidston Stage 3 Battery Energy Storage System (the "Project"), proposed by Genex Power Pty Ltd and K3W Project Co Pty Ltd as Trustee for the K3W Project Trust. Development approval is sought from the State Assessment and Referral Agency (SARA) as the assessment manager under the *Planning Act 2016* for a Material Change of Use (MCU) for a Battery Storage Facility (BSF). The Project is assessable under State Code 27 of the State Development and Assessment Provisions.

The purpose of this Decommissioning Security Report is to address Performance Outcome 35 of State Code 27, which requires a Decommissioning Security Report to be submitted with the Development Application to provide evidence of the proposed financial security that will ensure compliance of decommissioning at end of construction and at end of operations at no cost to the community, landowners or the government.

1.2 Project Description

The Project is part of the Kidston Clean Energy Hub, which currently comprises the 50 MW Kidston Solar Project, operating since 2017, and the 250 MW and 2,000 MWh Kidston Pumped Storage Hydro project, currently under construction. The Project will provide utility-scale energy storage to support the National Electricity Market (NEM) and enhance regional grid stability. Once developed, the Clean Energy Hub will be labelled as a world first integration of pumped hydro, solar and battery storage.

The Project comprises a new standalone grid forming BSF of up to approximately 250 Megawatts (MW) and 1,250 Megawatt Hours (MWh), in the town of Kidston, near Einasleigh, Far North Queensland. The BSF, and associated grid connection, is proposed to be constructed in the northern section of the Kidston Solar Farm lot, directly adjacent to the Aurumfield Substation and will connect from a private project substation into the Aurumfield Substation at 275 kilovolts (kV) (refer to Figure 1).

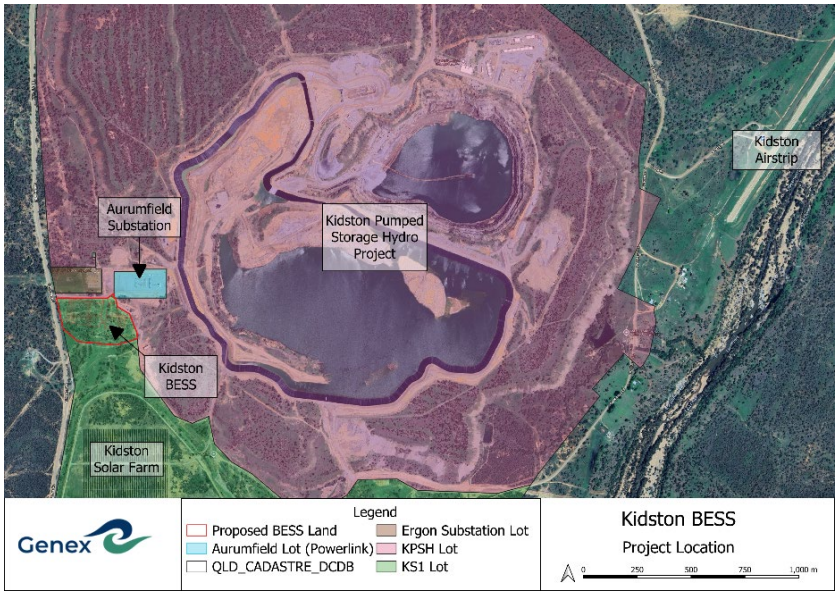


Figure 1: Site Location

The Project site consists of previously disturbed and cleared land associated with the historical Kidston Gold Mine, being located on the rehabilitated South Pond area of the now-decommissioned mine processing facility, and is co-located with existing and proposed renewable energy developments as mentioned above. Specifically, the BSF and subsequently the proposed new lot will be located on the decommissioned South Pond area of the Processing Facility that was part of the Kidston Gold Mine. All land within the Kidston Clean Energy Hub is owned in freehold by Genex Power's subsidiary project entities.

1.3 Regulatory Framework - State Code 27

The Development Application is made under the *Planning Act 2016* for a MCU for a BSF. BSF developments are regulated by *State Code 27: Battery Storage Facilities*, with SARA as the assessment manager. This Decommissioning Security Report is required for the Project to comply with Performance Outcome (PO) 35 of State Code 27, specifically:

PO35 *Decommissioning plans are secured by bonds or financial guarantees or other mechanism/s to safeguard compliance.*

2. PROJECT DECOMMISSIONING STRATEGY

2.1 End of Construction Decommissioning Strategy

It is the intention of the Project to demobilise and remove all facilities and equipment no longer required for the ongoing operation of the Project upon completion of the commissioning phase. As the Project forms part of the Kidston Clean Energy Hub, where possible any facilities or equipment that can be utilised for the ongoing operation of the broader Hub will be retained or repurposed. The following table provides a summary of the anticipated strategies for the key construction facilities and equipment associated with the Project:

ITEM	STRATEGY	DESCRIPTION
Heavy equipment	Demobilise	To be repurposed by Primary Contractor on future projects
Construction laydowns	Retain and repurpose	To be retained for use during O&M of the KCEH
Site office and construction compound	Retain and repurpose	To be retained for use during O&M of the KCEH
Workforce Accommodation	Demobilise and repurpose	To be handed back to owner following Project construction
Concrete batching plant	Demobilise	To be rehabilitated and removed
Waste materials	Recycle and dispose	To be sorted, packaged and treated per the waste hierarchy

An End of Construction Decommissioning Management Plan will be prepared in consultation with the Primary Contractor prior to the commissioning phase of the Project. This plan will identify the methodology to remove all construction-related equipment and facilities no longer required during the operational phase of the Project.

2.2 End of Operations Decommissioning Strategy

The Preliminary Battery Recycling Strategy also included as part of this Development Application identifies the anticipated approach to the recycling of the BSF equipment at the end of useful life. A Battery Recycling Strategy will be prepared prior to the end of operations to reflect a recycling approach that will leverage the

reuse opportunities or recycling technologies available at the time, which will define the approach to be adopted for the decommissioning of the remainder of the Project facilities and equipment.

All land associated with the Kidston Clean Energy Hub is owned by Genex, through its project entities, with Freehold tenure. This ownership will continue beyond the decommissioning of each project, and therefore the obligation to appropriately manage the land will survive with this ownership. At the end of life of the Project, an assessment will be made to determine whether the life of the project can be extended through replacement or refurbishment of assets, or whether a new project could be developed in its place. Genex is committed to the utilisation of the Aurumfield substation for a period of 40 years from the commissioning of the neighbouring KPSH project, having entered an agreement with Powerlink to repay the capital cost of its construction over this period of time. Accordingly it is in Genex's interest to leverage the Kidston BSF site, its approvals and its infrastructure over the long term to offset the associated grid costs. The relevant assessment and approvals processes at the time will be followed should this option be pursued.

If the Project is fully decommissioned at the end of life, it is anticipated that all above ground infrastructure will be removed from the site, and appropriately disposed of. All ground-level or subsurface infrastructure, such as foundations, cable trenches and cables, access tracks and hardstand, is anticipated to remain in situ to prevent further disturbance to the land. The adjacent Kidston Pumped Storage Hydro project has an anticipated operational life in excess of 100 years and as such will continue operating beyond the end of operations of the Project, and accordingly the decommissioned site will continue to be managed in accordance with the O&M strategy for that site beyond the Project's decommissioning.

A Project Decommissioning Management Plan will be prepared in consultation with the decommissioning contractor at least 6 months prior to the end of operations of the Project. This plan will identify the methodology to decommission and remove the relevant Project infrastructure, and will address recycling opportunities in an associated Battery Recycling Strategy.

3. APPLICABILITY OF DECOMMISSIONING FINANCIAL SECURITY

Genex is the 100% owner of the Project Co, and the Project Co will retain 100% ownership of the new Lot 1 on SP361228 on which the project will be located, to be registered upon reaching Development Approval for the project. The Project is unique in that the Project Co is also landowner, and the parent company is also owner of the neighbouring projects and land for both the Kidston Solar Farm and the KPSH project. There is therefore no separate landowner risk exposure resulting from the proposed project configuration and ownership structure.

In this circumstance, the decommissioning obligation remains with the related parties to the Project Co. The parent structure of the Project Co retains a direct and ongoing interest in managing the land appropriately, preserving the value and future use of the site, and ensuring that any decommissioning or rehabilitation activities are undertaken in accordance with its regulatory obligations.

An appropriate decommissioning security mechanism would be applicable if the land ownership structure changes, resulting in the Project Co no longer being a related party to the landowner. Therefore, if through a sale or novation the Project Co becomes an unrelated party to the landowner, the financial security framework described in this report will be implemented.

Genex has an operational portfolio of 150MW, comprising both solar PV and BSF technologies, and is currently constructing Australia's first pumped hydro facility in more than 40 years in the KPSH. This $1.2Bn portfolio will

grow by a further 1,000MW and $1.4Bn through the completion of the Kidston BSF project and the Bulli Creek hybrid project in South East Queensland over the coming years.

As of July 2024, Genex became a wholly owned subsidiary of Electric Power Development Co., Ltd ("J-Power"). J-Power is headquartered in Tokyo, Japan, and is listed on the Tokyo stock exchange with a market cap of approximately $5.4B (AUD), 12-month revenues exceeding $13B and credit ratings of A (S&P) and A3 (Moody's). With a total generating capacity exceeding 25,000MW in its global operating portfolio, it operates more than twice the capacity of Australia's largest generating portfolio in AGL.

Genex demonstrates through its operating footprint, financial capability and the backing of J-Power it has the experience, intent and financial capability to deliver and maintain the Project through to decommissioning.

4. DECOMMISSIONING SECURITY MECHANISM

4.1 Estimation of Decommissioning Costs

The cost of decommissioning will be calculated on a net-cost basis at each phase of the Project lifecycle, considering the anticipated inherent salvage value of BSF equipment (such as copper in cabling and transformers, and the rare minerals in battery cells and other electrical equipment). An independent Quantity Surveyor (or professional of similar capability) will be engaged to calculate the net cost of decommissioning to inform the security value required at each phase increment as further detailed in Section 4.2 below and the Decommissioning Financial Security Framework in Section 5.

4.2 Phasing of Financial Securities Relative to Risk

The objective of the decommissioning security is to ensure governments, landowners and communities are protected from the risk of asset abandonment by the Project operator. Accordingly, the security mechanism is proposed to be phased to be commensurate with the risk of abandonment throughout the Project's lifecycle.

During the construction phase, the decommissioning liability relates to the cost of removal of stranded assets, less the inherent sale value of the newly installed or otherwise committed equipment.

Once commissioned, the revenue earned under fixed term offtake contracts and through trading on the National Electricity Market (NEM) will be used to pay for the low operating expenses and repay the large upfront capital expenditure. Therefore, the risk of abandonment is virtually nil in the initial 15 years of operation. As the project approaches its design life of 25 years, the repair and operating costs increase.

If Project Co ceases to be a related party to the landowner, or if another circumstance arises that creates a third-party landowner exposure, a phased security program would apply throughout the Project's lifecycle to recognise this risk profile, as described in the following table:

PHASE	SECURITY VALUE
Construction phase	100% of the estimated net decommissioning cost
Commercial Operation Date to end of year 10	10% of the estimated end of life net decommissioning cost in present value dollars
Year 11 to end of year 15	25% of the estimated end of life net decommissioning cost in present value dollars
Year 16 to end of year 20	50% of the estimated end of life net decommissioning cost in present value dollars
Year 21 to end of decommissioning	100% of the estimated end of life net decommissioning cost in present value dollars

While Project Co is a related party to the landowner, no security is required to be established or released under this phased program. If the ownership structure changes, each applicable security would be established for the duration of the relevant phase and released at the end of that phase at the time a new security is raised for the following phase, if applicable. The applicable security for each operational phase would be established on or before the relevant anniversary of the Commercial Operation Date of the Project.

4.3 Security Instrument and Custodianship

The appropriate decommissioning security instrument for each phase will be determined at the time each security is triggered, being a legally enforceable instrument such as:

- A cash security held in trust; or
- A bank guarantee or letter of credit; or
- A Parent Company Guarantee.

While Project Co is a related party to the landowner, there is no separate custodian for a decommissioning financial security and no security instrument is required. If Project Co ceases to be a related party to the landowner, or if a third-party landowner exposure otherwise arises, the applicable financial security instrument would be provided by Project Co to the landowner, which may be drawn by the landowner in the event of a breach by Project Co, including default, insolvency or abandonment.

4.4 Security Reporting

A Phase Decommissioning Security Report will be provided to the Queensland Department of State Development, Infrastructure and Planning (DSDIP) prior to the end of each phase of operations (i.e. by the end of construction, year 10, year 15 and year 20). The reports will identify the results of the decommissioning cost estimate completed at the time, details of the release of prior security, and details of the new security to be raised for the following phase (if applicable).

4.5 Release of Security

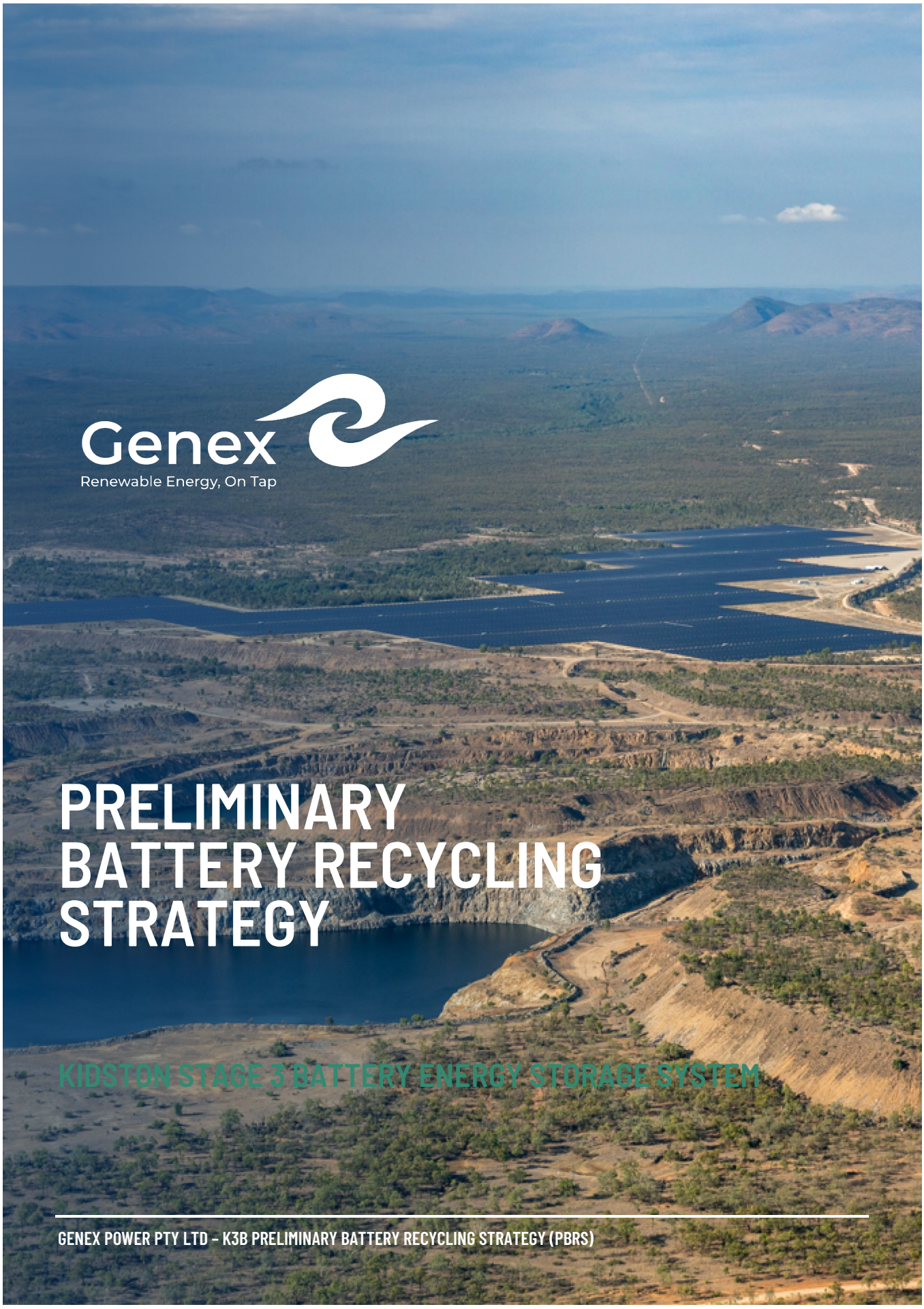
As described in Section 4.2, the security for each intermediate phase of operations will be valid for the period of that phase (i.e. 5 years), to be released at the time the security for the following phase is raised. The security for the final phase (year 21 to the end of decommissioning) will be released in full upon completion of the decommissioning activities that will be defined by and in accordance with the Project Decommissioning Management Plan, to be prepared a minimum of 6 months prior to the end of operations of the Project.

5. DECOMMISSIONING FINANCIAL SECURITY FRAMEWORK

The following table summarises the Decommissioning Financial Security Framework. The framework applies only if Project Co ceases to be a related party to the landowner, the Project is transferred to an operating entity that does not own the land, or another circumstance arises that creates a third-party landowner exposure:

PHASE	INSTRUMENTS	CUSTODIAN	SECURITY ACCESS TRIGGER	ESTIMATION METHODOLOGY	REVIEW
Construction	Cash security, bank guarantee, letter of credit or PCG	Third-party landowner	Default, Project Co insolvency, or Project abandonment	100% of the estimated net decommissioning cost.	Review before construction if a third-party landowner exposure arises
COD to end of year 10	Cash security, bank guarantee, letter of credit or PCG	Third-party landowner	Default, Project Co insolvency, or Project abandonment	10% of the estimated end of life net decommissioning cost in present value dollars.	Review before end of year 10 if a third-party landowner exposure arises
Year 11 to end of year 15	Cash security, bank guarantee, letter of credit or PCG	Third-party landowner	Default, Project Co insolvency, or Project abandonment	25% of the estimated end of life net decommissioning cost in present value dollars.	Review before end of year 15 if a third-party landowner exposure arises
Year 16 to end of year 20	Cash security, bank guarantee, letter of credit or PCG	Third-party landowner	Default, Project Co insolvency, or Project abandonment	50% of the estimated end of life net decommissioning cost in present value dollars.	Review before end of year 20 if a third-party landowner exposure arises
Yr 21 to end of decommissioning	Cash security, bank guarantee, letter of credit or PCG	Third-party landowner	Default, Project Co insolvency, or Project abandonment	100% of the estimated end of life net decommissioning cost in present value dollars.	Review before commencement of decommissioning if a third-party landowner exposure arises

Appendix P Preliminary Battery Recycling Strategy


Genex
Renewable Energy, On Tap
PRELIMINARY BATTERY RECYCLING STRATEGY
KIDSTON STAGE 3 BATTERY ENERGY STORAGE SYSTEM
GENEX POWER PTY LTD – K3B PRELIMINARY BATTERY RECYCLING STRATEGY (PBRS)

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1. INTRODUCTION

This Preliminary Battery Recycling Strategy (**PBRS**) has been prepared in support of a Development Application (**DA**) by Genex Power Pty Ltd (**Genex** or **the Principal**) to the State Assessment and Referral Agency (**SARA**). The DA refers to the Kidston Stage 3 Battery Energy Storage System (**BESS**) Project (**K3B** or **the Project**), an up to 250MW / 1,250MWh BESS, which will complete stage 3 of the Kidston Clean Energy Hub (**Energy Hub**), located in Kidston.

The recently introduced State Code 27 requires developers to meet decommissioning related Performance Outcomes (**PO**). PO34 relates to the PBRS and Battery Recycling Strategy (**BRS**), and is defined in the Queensland Governments guidance material as follows, where italicised text demonstrates specifically how this PBRS satisfies each requirement:

"As part of decommissioning the project sustainability, the reuse, recycling and recovery of battery components must also be planned to demonstrate compliance with PO34. A BRS will be conditioned as part of the approval, and should incorporate the following information:

- Details of a qualified professional to assist with deinstallation of batteries

  Section 3(a) of this PBRS demonstrates the due diligence that will be performed on:

  - *The contractor:*
    - *Supplied deinstallation experience with the relevant BESS chemistry;*
    - *Has the appropriate accreditations in safety procedures and processes that relate to the Projects deinstallation; and*
    - *Is familiar with the Original Equipment Manufacturers (**OEM**)-specific procedures issued by the supplier.*

- Any risks associated with deinstallation of batteries, in particular management steps necessary to contain harmful and dangerous battery materials and any direction provided from the supplier regarding an 'end-of-life' plan

  Section 3(b) of this PBRS demonstrates that:

  - *An end of operation decommissioning management plan will be procured to detail the project-specific end-of-life risks and management measures; and*
  - *Damaged modules will be segregated immediately and stored and transported in approved safe collection containers.*

- Whether the battery system contains recycled content and if it is recyclable

  *Section 3(c) of this PBRS demonstrates the recyclable materials of a Lithium Iron Phosphate (**LFP**) chemistry-based BESS.*

- Itemised breakdown of materials to be reused, recycled and/or recovered. Additionally, this should detail what happens to other system components associated with the decommissioned BSF.

  Section 3(c) of this PBRS demonstrates the itemised breakdown of the materials of a LFP chemistry-based BESS, and highlights each materials reusability, recyclability and recoverability. Further, a description and figure have been provided to demonstrate how the recycling process then proceeds, separating ferrous and non-ferrous metals and plastics, and their recoverability and use, or their further recycling and recoverability processes downstream.

At the time of lodgement, a PBRS should be submitted for assessment. It is acknowledged the strategy may change over the operation period of the Battery Storage Facility (**BSF**) as new technologies and recycling processes emerge. The conditioned BRS is intended to account for these changes and incorporate best practice at the time decommissioning of the BSF occurs."

By utilising the above guidance, as well as advice received from a representative of the Queensland Government's Department of State Development, Infrastructure and Planning, this PBRS has been procured to specifically address PO34.

2. PROJECT DESCRIPTION

a. Site Location

Kidston is located ~380km NW of Townsville City. Refer Figure 1 for a locality plan, and Figure 2 for the Project location within the Energy Hub.

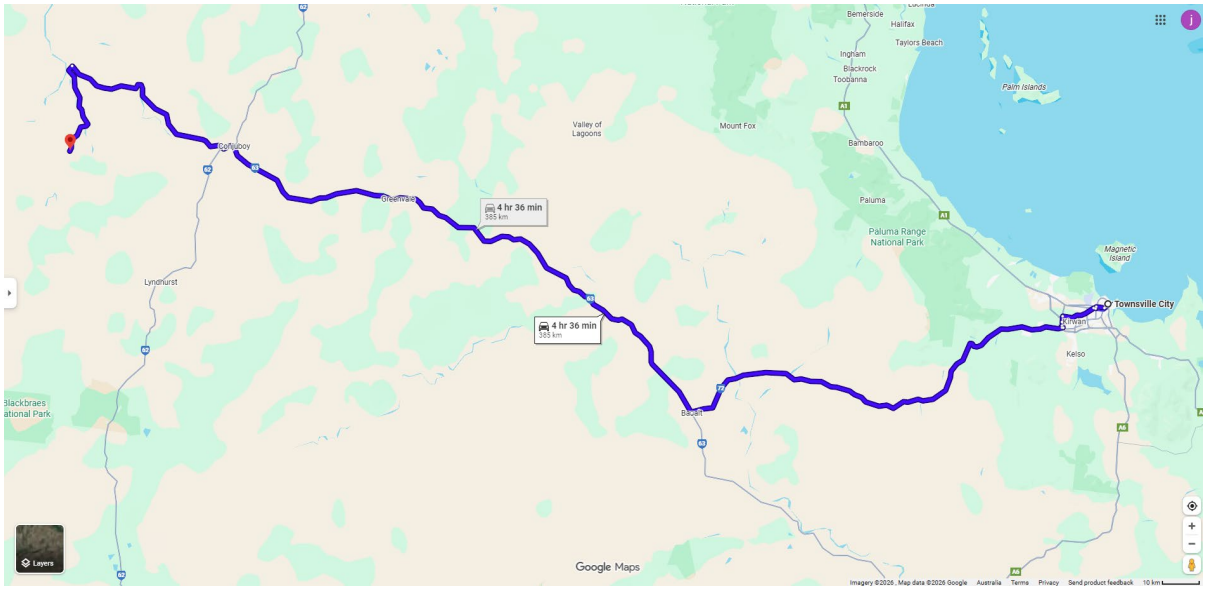


Figure 1 - Kidston Locality Plan

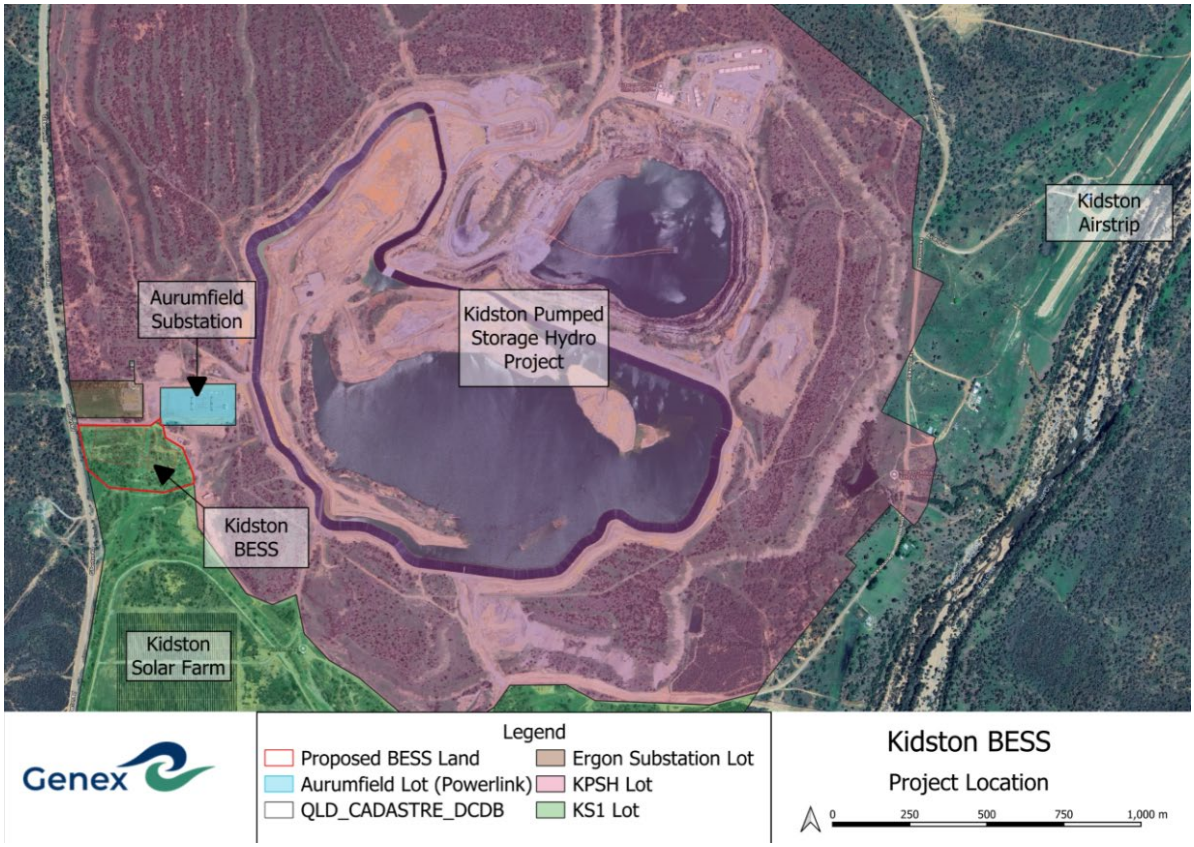


Figure 2 - Project location within the Energy Hub

b. Stakeholders

The Project considers a split contract configuration during construction, where the supply of the BESS equipment and the Balance of Plant (**BoP**) Contractor will be managed separately by the Principal. A list illustrating the Project's key stakeholder structure has been provided below.

i. BESS equipment supplier (**the Supplier**)

ii. BoP Contractor

iii. The Principal

iv. The Principal's parent company

v. The relevant Council

vi. The First Nations Party

It is intended that the operations phase will be managed through a dedicated and experienced Operations and Maintenance contractor, with oversight by the Principal, and in coordination with the operations of the other independent projects forming the balance of the Energy Hub.

c. Timeline

At the time of preparation of this report as a supporting document to the DA (CY H1 2026), the Project is in the mid-development phase. Development workstreams will continue to evolve the detailed design of the project, which is intended to be completed at the time of the target financial investment decision and the Project's financial close in 2027. With an approximate construction and commissioning duration of 19 and 6 months, respectively, the Project is planned to achieve commercial operations in 2029. The planned operational life for the Project is 25 years, seeing this PBRS and the subsequently defined BRS coming into effect during the decommissioning phase, commencing CY H2 2054.

d. Technology

The system will utilise LFP lithium-ion battery chemistry and provides a nominal total nameplate energy capacity of up to 1,250 MWh**.**

The battery cells are assembled into modules and mounted within steel battery racks**,** which are then integrated into a factory-assembled battery enclosure that meets contemporary international safety and quality certification standards**.** Each containerised unit incorporates the battery racks along with associated thermal management, safety, and monitoring systems.

3. PRELIMINARY BATTERY RECYCLING STRATEGY

This strategy outlines the safe, compliant, and environmentally responsible end-of-life management of the proposed LFP BESS based on contemporary practice and limited onshore recycling capabilities. It addresses deinstallation planning and execution, safe handling and transport, and the recycling, reuse, or disposal of battery components in accordance with applicable regulatory, environmental, and work health and safety requirements, while recognising that at the time of decommissioning the recycling environment is likely to have matured substantially and therefore is likely to offer substantially different and improved recycling opportunities.

a. Battery deinstallation professionals

Deinstallation will be undertaken by suitably qualified and experienced battery decommissioning contractors, engaged by the asset owner.

To be deemed appropriate for the scope, contractors will be required to demonstrate that they:

- Have proven deinstallation experience with LFP BESS;
- Have accreditations in:

- HV electrical Isolation;
- Hazardous materials handling; and
- Dangerous goods transport; and

- Are familiar with OEM-specific procedures issued by the Supplier.

The Supplier will:

- Provide a disassembly guide;
- Provide an 'end-of-life' plan; and
- Be consulted on module handling, packaging, and warranty.

The de-energisation and de-installation procedures will align with supplier-specific end-of-life guidance.

b. Battery deinstallation approach

The anticipated sequence to deinstallation of the BESS is as follows:

i. Pre-deinstallation preparation
   a. Development, in collaboration with the supplier and the OEM specific end-of-life plan, of a detailed End of Operation Decommissioning Management Plan and detailed BRS, confirming:
      i. Battery state of health
      ii. Hazard classification
      iii. Project-specific end-of-life decommissioning risks and management measures
   b. Engagement with the Supplier to confirm:
      i. Warranty-approved shutdown sequence and procedure
      ii. End-of-life handling requirements

ii. Electrical isolation and de-energisation
   a. Safe shutdown of the BESS
   b. Electrical isolation from the grid and other systems
   c. Confirming zero energy / power prior to physical removal

iii. Physical removal

a. In progressive stages, commence the removal of modules/racks, then containers, then remaining infrastructure on site

b. Batteries are to be removed using the Supplier's approved lifting and handling methods

c. Damaged, and so potentially dangerous and harmful, modules are to be segregated immediately

iv. Packaging and transport

a. Batteries are to be packaged in approved containers, in fire and impact resistant packaging

b. Batteries are to be transported to licenced and approved recycling facilities (or equivalent at the time of decommissioning), or licenced and approved interim storage facilities, meeting Sedex Members Ethical Trade Audit (SMETA) standards.

c. Recyclability

The decommissioning phase will prioritise the maximisation of material and metal recovery. Table 1 illustrates the current material make-up and recyclability of a LFP BESS based on contemporary technologies and use cases.

Table 1 – Material recyclability

MATERIALS	REUSABLE	RECYCLABLE	RECOVERABLE
Electrochemical materials (LFP)	N	Y	Y
Metals (steel, aluminium, copper)	Y	Y	Y
Electronics	N	Y	Y
Coolant	N	Y*	Y
Plastics	N	Y*	Y

**Recyclability subject to the condition of the material*

Following the deinstallation and de-energisation process, the BESS materials will be disassembled and transported by a licensed dangerous goods transporter operating in accordance with the Environmental Protection Act 1994 (Qld) and dangerous goods transport requirements.

The cells are then discharged and milled, separating the ferrous and non-ferrous metal casings and plastics leaving a non-ferrous rich black mass. The black mass is exported for further downstream separation and recovery.

The recovered ferrous and non-ferrous metals from the complete recycling process are further processed and used in manufacture of metal-based products. Plastics depending on quality can be granulated further and sent to local plastic recyclers.

A simple flow chart to better depict the workflow has been provided below in Figure 3.

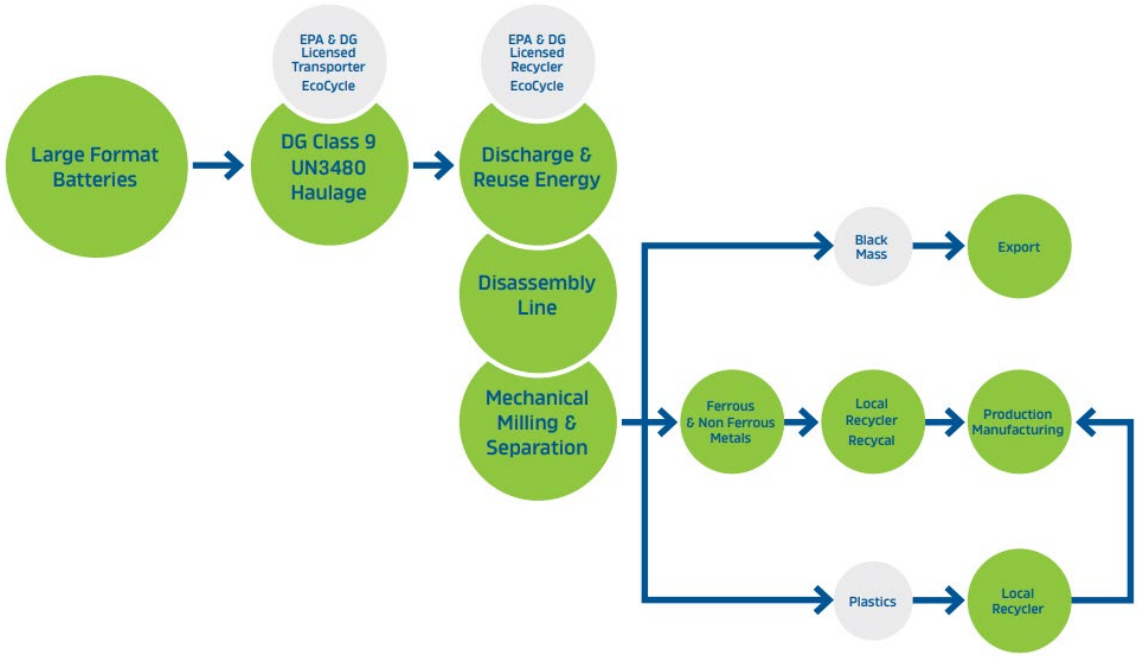


Figure 3 - Recycling workflow

4. BATTERY RECYCLING STRATEGY

To streamline the process and guided by the Queensland Government's State Code 27 planning guideline, Genex will prepare and submit the conditioned BRS six months prior to the ceasing of the Project's operations along with the End of Operation Decommissioning Management Plan. This plan will reflect the recycling capabilities available in the domestic market at the time of decommissioning and will be submitted to SARA for endorsement prior to commencement of decommissioning activities.

Appendix Q Community Benefit Agreement

K3W Project Co. Pty Ltd as trustee for the K3W Project Trust

Etheridge Shire Council

Community Benefit Agreement

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This Agreement is made on _____

Parties

1	**K3W Project Co. Pty Ltd ACN 664 467 092 as trustee for the K3W Project Trust** of Suite 12.03, Level 12, 35 Clarence Street, Sydney, New South Wales 2000 (the **Proponent**).
2	**Etheridge Shire Council** of 41 St George Street, Georgetown, Queensland 4871 (the **Council**).

Recitals

A	The Proponent proposes to undertake the Project on the Land located within the Council's local government area.
B	The Proponent has prepared the Social Impact Assessment Report for the Project as required under the Planning Act.
C	The Proponent proposes to lodge the MCU Development Application and has lodged the ROL Development Application to seek approval for the Project.
D	The Proponent has agreed to make an annual financial contribution to the Council and the Council has agreed to use the annual financial contribution to deliver community benefits as set out in this Agreement.

It is agreed as follows.

1 Definitions and interpretation

1.1 Definitions

(a) The following definitions apply unless the context requires otherwise.

Administration Payment means the amount calculated in accordance with the formula in Item 8 of Schedule 1.

Agreement means this Community Benefit Agreement, including all schedules.

Annual Financial Contribution means the amount calculated in accordance with the formula in Item 6 of Schedule 1, which is the sum of the Base Component and the Top Up Component.

Base Component means the sum calculated by reference to Item 6 of Schedule 1.

Battery Storage Facility has the meaning given to that term in the Planning Regulation.

Bank Guarantee means an irrevocable and unconditional undertaking by an Australian trading bank or other Australian financial institution, to pay an amount or amounts of money to the Council on demand.

Business Day means a day which is not a Saturday, Sunday or a public holiday in Georgetown.

Chief Executive means the chief executive under the Planning Act.

Commencement Date means the date the last party signs this Agreement.

Construction Commencement Date means the date that both of the following have occurred:

(i) each of the Development Approvals has taken effect under section 71 of the Planning Act for the Project; and

(ii) either:

(A) the Proponent has issued an unconditional notice to proceed to its lead contractor or contractors to commence construction of the Project; or

(B) the Council has given a Notice to the Proponent stating that it is satisfied, acting reasonably, that construction of the Project has commenced.

Corporations Act means the *Corporations Act 2001* (Cth).

Council means the local government stated in Item 2 of Schedule 1.

Council's Bank Account means the bank account, details of which are contained in Item 3 of Schedule 1, or as otherwise notified by Council in writing from time to time.

CPI means the Consumer Price Index for Brisbane (All Groups) published from time to time by the Australian Bureau of Statistics.

Development Application means the MCU Development Application and the ROL Development Application.

Development Approval means a development permit granted under the Planning Act in respect of each of the Development Applications.

Dispute has the meaning given under clause 8.

Eligible Property means a property that Council determines, as at the time an Energy Rebate is intended to be remitted:

(i) is rateable land; and

(ii) is located in the Host Community; and

(iii) is not vacant land; and

(iv) contains a principal place of residence for a person.

Council's determination of the above criteria will be made in Council's discretion and by reference to the information contained in Council's land record and rates record.

Energy Rebate means the total sum of $25,000 per annum, which forms part of the Annual Financial Contribution and which sum is to be applied in a specific way by Council pursuant to clause 5.3(f).

End Date means the earlier of:

(i) the date the Proponent gives a Notice to the Council stating that the Project has been decommissioned in accordance with the conditions of the Development Approval for the MCU Development Application; or

(ii) the date this Agreement is terminated in accordance with clause 7.

Financial Close means the date on which the Proponent has secured all debt, equity or other funding required to construct and commission the Project and all conditions precedent to the first drawdown of that funding have been satisfied or waived.

Force Majeure means an event or cause beyond the reasonable control of the party claiming force majeure. It includes each of the following, to the extent it is beyond the reasonable control of that party:

(i) act of God, lightning, storm, flood, fire, earthquake or explosion, cyclone, tidal wave, landslide or adverse weather conditions;

(ii) strike, lockout or other labour difficulty;

(iii) act of public enemy, war (declared or undeclared), terrorism, sabotage, blockade, revolution, riot, insurrection, civil commotion or epidemic;

(iv) the effect of any applicable laws, orders, rules or regulations of any government or other competent authority;

(v) embargo, inability to obtain any necessary materials, equipment, facilities or qualified employees, power or water shortage or lack of transportation; and

(vi) breakage or accident or other damage to machinery.

Government Agency means any government or any governmental, semi-governmental or judicial entity or authority. It also includes any self-regulatory organisation established under statute or any stock exchange.

Guaranteed Usable Energy Capacity of the Project, means the aggregate energy storage capacity of the Project, expressed in megawatt hours (MWh), that is verified prior to the commencement of a Payment Year in accordance with the battery manufacturer's standard test procedures and evidenced in the manufacturer's annual performance testing report, being the energy capacity the Battery Storage Facility is capable of charging or discharging at the point of connection to the Power Grid, after allowing for auxiliary loads, operational limitations and other losses within the Battery Storage Facility.

Host Community means all communities within the Etheridge local government area (and the Etheridge local government area generally).

Index Number means:

(i) the CPI; or

(ii) if the CPI is suspended or discontinued or the basis of calculating that index is changed substantially the index published at the relevant indexation date by the Australian Bureau of Statistics which most closely reflects fluctuations in the cost of living in Brisbane, which will be:

(A) as agreed by the parties; or

(B) if the parties are unable to agree within 10 Business Days after one of the parties proposes an index, as may be determined, at the request of any party, by a suitably qualified person nominated by the President of the Australian Institute of Valuers, whose determination will be final and binding on the parties (and whose cost will be shared by the parties equally). In making the determination, the person will act as an expert and not as an arbitrator.

Land means the land described in Item 4 of Schedule 1.

Law means any statute, regulation, order, rule, subordinate legislation or other document enforceable under any statute, regulation, rule or subordinate legislation.

MCU Development Application means a development application made under the Planning Act to the Chief Executive for a development permit for a material change of use for the Project.

Multiplier means the amount stated in Item 7 of Schedule 1.

Notice has the meaning given under clause 11.

Payment Year means:

(i) For the first Payment Year, the period that commences on the Construction Commencement Date and ends on the day before the first anniversary of the Construction Commencement Date;

(ii) For the second and each subsequent Payment Year, the period that commences on the yearly anniversary of the Construction Commencement Date and ends on the day before the next yearly anniversary of the Construction Commencement Date.

Planning Act means the *Planning Act 2016* (Qld).

Planning Regulation means the *Planning Regulation 2017* (Qld).

Power Grid means Powerlink's electricity transmission network.

Powerlink means Queensland Electricity Transmission Corporation Limited ACN 078 849 233, trading as Powerlink Queensland, a government owned corporation.

Project means the project described in Item 5 of Schedule 1.

Proponent means the proponent stated in Item 1 of Schedule 1.

Related Body Corporate has the meaning given to related body corporate in the Corporations Act.

ROL Development Application means a development application made to the Council under the Planning Act for a development permit for reconfiguring a lot (Lot 12 SP345756) to create Lots 1 and 2 SP361228 and Easement BG in Lot 1 SP361228.

Social Impact Assessment Report means the *Social Impact Assessment: Kidston Battery Storage Facility* prepared by NGH and dated July 2026 (Version Final V1.1), being a social impact assessment report for the purpose of section 106V of the Planning Act.

Term has the meaning given under clause 3.

Top Up Component means the sum calculated by reference to Item 6 of Schedule 1.

(b) A term or expression which is not defined in this Agreement but is defined in the Planning Act or the Planning Regulation has the meaning given in the Planning Act or the Planning Regulation.

1.2 Interpretation

(a) Headings are for convenience only and do not affect interpretation.

(b) Mentioning anything after includes, including, for example, or similar expressions, does not limit what else might be included.

(c) Nothing in this Agreement is to be interpreted against a party solely on the ground that the party put forward this Agreement or a relevant part of it.

(d) The following rules apply unless the context requires otherwise.

(i) The singular includes the plural, and the converse also applies.

(ii) A gender includes all genders.

(iii) If a word or phrase is defined, its other grammatical forms have a corresponding meaning.

(iv) A reference to a person includes a corporation, trust, partnership, unincorporated body or other entity, whether or not it comprises a separate legal entity.

(v) A reference to a clause or Schedule is a reference to a clause of, or Schedule to, this Agreement.

(vi) A reference to an Item is a reference to an item in Schedule 1.

(vii) A reference to an agreement or document (including a reference to this Agreement) is to the agreement or document as amended, supplemented, novated or replaced,

except to the extent prohibited by this Agreement or that other agreement or document.

(viii) A reference to writing includes any method of representing or reproducing words, figures, drawings or symbols in a visible and tangible form.

(ix) A reference to a party to this Agreement or another agreement or document includes the party's successors, permitted substitutes and permitted assigns (and, where applicable, the party's legal personal representatives).

(x) A reference to legislation or to a provision of legislation includes a modification or re-enactment of it, a legislative provision substituted for it and a regulation or statutory instrument issued under it.

(xi) A reference to conduct includes an omission, statement or undertaking, whether or not in writing.

(xii) A reference to an *agreement* includes any undertaking, deed, agreement and legally enforceable arrangement, whether or not in writing, and a reference to a *document* includes an agreement (as so defined) in writing and any certificate, notice, instrument and document of any kind.

(xiii) A reference to *dollars* or *$* is to Australian currency.

(xiv) A reference to a right or obligation of any two or more people comprising a single party confers that right, or imposes that obligation, as the case may be, on each of them severally and each two or more of them jointly. A reference to that party is a reference to each of those people separately (so that, for example, a representation or warranty by that party is given by each of them separately).

(xv) A reference to property or an asset includes any real or personal, present or future, tangible or intangible property or asset (including intellectual property) and any right, interest, revenue or benefit in, under or derived from the property or asset.

(xvi) A reference to an amount for which a person is contingently liable includes an amount that that person may become actually or contingently liable to pay if a contingency occurs, whether or not that liability actually arises.

(xvii) A *month* means a calendar month.

(xviii) A reference to *year* is a reference to each successive period of 12 months, commencing on the Construction Commencement Date.

2 Community Benefit Agreement

(a) The Project is a development requiring social impact assessment under the Planning Act and the Planning Regulation.

(b) This Agreement is a community benefit agreement for the Project within the meaning of that term under section 106Y of the Planning Act and entered into under section 106Z(1)(a) of the Planning Act.

(c) This Agreement is about providing a benefit to the Host Community to address the social impact of the Project as that term is defined in section 106R of the Planning Act.

(d) If the requirement for a community benefit agreement as defined in section 106Y of the Planning Act is repealed by legislation, the Proponent's obligations under this Agreement nevertheless continue as set out in this Agreement.

(e) The parties agree that the responsibilities under this Agreement are not affected by a change in the ownership of the Land.

3 Term

(a) This Agreement commences on the Commencement Date and ends on the End Date.

4 Condition Precedent

(a) The parties agree that clause 5 of this Agreement is not binding on the parties and of no effect until:

(i) each of the Development Approvals has effect under section 71 of the Planning Act; and

(ii) either:

(A) the Proponent has issued an unconditional notice to proceed to its lead contractor or contractors to commence construction of the Project; or

(B) the Council has given a Notice to the Proponent stating that it is satisfied, acting reasonably, that construction of the Project has commenced; and

(iii) the Proponent has achieved Financial Close for the Project.

5 Community Benefits

5.1 Notification

(a) The Proponent must give a Notice to the Council stating:

(i) the Construction Commencement Date for the Project; and

(ii) the Guaranteed Usable Energy Capacity of the Project in megawatt hours on the Construction Commencement Date,

no later than 5 Business Days after the Construction Commencement Date to allow the Council and the Proponent to calculate the first Annual Financial Contribution.

(b) The Proponent must give a Notice to the Council of any increase or decrease in the Guaranteed Usable Energy Capacity of the Project in megawatt hours no later than 5 Business Days prior to the Annual Financial Contribution becoming payable to allow the Council and the Proponent to recalculate the Annual Financial Contribution.

(c) A Notice given pursuant to subclause (a) or (b) must take the form of a statutory declaration, made under the *Oaths Act 1867* (Qld) by a duly authorised officer of the Proponent.

(d) The Proponent agrees to give Council access to so much of the Proponent's books and records as Council reasonably requires to verify the contents of a Notice given under this clause. That access is provided for the sole purpose of Council verifying the matters required to be disclosed under this clause and for no other purposes, and is subject to the confidentiality obligations in Clause 12.

5.2 Other Obligations Continue to Apply

(a) The Proponent acknowledges that the Annual Financial Contribution does not:

(i) offset payments that the Proponent may otherwise be required to make in connection with the Development Approvals, including:

(A) payments under any infrastructure agreements;

(B) infrastructure charges levied under any infrastructure charges notices;

(C) payments required by a condition of the Development Approvals; or

(D) payments to Government Authorities under any Laws;

(ii) offset rates and charges for the Land under the *Local Government Act 2009* (Qld);

(iii) offset payments under a private agreement between the Proponent and owner of the Land;

(iv) replace management measures identified in Appendix D, Table D-1 SIMP Framework of the Social Impact Assessment Report; and

(v) negate or replace existing obligations or agreements with First Nations Peoples in relation to the Project.

5.3 Annual Financial Contribution

(a) The Proponent must pay to the Council the Annual Financial Contribution.

(b) The Annual Financial Contribution is the sum of the Base Component and the Top Up Component.

(c) The Annual Financial Contribution is payable in the following way:

(i) the Base Component will be paid within 7 days of commencement of a Payment Year;

(ii) the Top Up Component will be paid within 7 days of the end of the same Payment Year;

(iii) if this Agreement ends before the end of a Payment Year, the Top Up Component will be paid within 7 days of the End Date.

(d) The Proponent must pay to the Council the Annual Financial Contribution by means of electronic funds transfer into the Council's Bank Account.

(e) The Council must apply the Annual Financial Contribution in a manner that Council determines, acting reasonably, is directed towards benefitting the Host Community and is informed by the Social Impact Assessment Report. The purposes for which Council may apply the Annual Financial Contribution can include (without limitation, and in no specific order of priority):

(i) construction, maintenance and upgrading of local government roads;

(ii) providing training and employment opportunities for residents;

(iii) providing energy supply to residents;

(iv) providing community transport for residents;

(v) funding community organisations;

(vi) facilitating telecommunications and digital connectivity for residents;

(vii) providing services for the health and social wellbeing of residents;

(viii) funding community events, and

(ix) any other purposes identified in the Social Impact Assessment Report.

(f) In applying the Annual Financial Contribution in accordance with clause 5.3(e), the Council must:

(i) comply with all applicable internal policy and governance requirements that apply to the Council; and

(ii) comply with all applicable Laws.

(iii) for the first 10 years following the Construction Commencement Date, the Council must distribute the Energy Rebate for the benefit of owners of Eligible Property, either as:

(A) a payment of a proportion of the Energy Rebate; or

(B) an annual discount to the rates and charges payable to the Council by each owner of Eligible Property;

provided that the Annual Financial Contribution paid by the Proponent in a relevant year exceeds the total amount of the Energy Rebate required to be paid in the same year, and with the payment made or annual discount applied by the Council pursuant to subclause (A) or (B) to reflect a proportion of the Energy Rebate having regard to the numbers of Eligible Properties in the Etheridge local government area.

(g) The Council may carry forward unused funds in any given year to future years.

(h) When the Council applies the Annual Financial Contribution under clause 5.3(e), the Council must publicly acknowledge the Proponent's contribution in funding the relevant project or investment in a way that is agreed between the Council and the Proponent.

(i) Subject to clause 6(g), the payments made by the Proponent to the Council under this clause are not refundable.

(j) The Council agrees and acknowledges that it bears the risk and sole responsibility for all actions, events and activities in connection with applying the Annual Financial Contribution.

(k) The Council releases the Proponent from all claims, actions, demands, proceedings and liability which it may have or claim to have or but for this release might have had against the Proponent for all actions, events and activities in connection with applying the Annual Financial Contribution.

(l) The Council indemnifies the Proponent against any claim, loss, damage, liability, cost and expense that may be incurred or sustained by the Proponent caused by or arising out of any act, matter or thing done, permitted or omitted to be done by the Council or its employees in relation to all actions, events and activities in connection with applying the Annual Financial Contribution.

5.4 Administration Payment

(a) The Proponent must pay to the Council the Administration Payment.

(b) The Administration Payment must be paid by the Proponent to the Council at the same time as each component of the Annual Financial Contribution is paid.

(c) The Proponent must pay the Administration Payment to the Council by means of electronic funds transfer into the Council's Bank Account.

(d) The Council agrees to apply the Administration Payment for the purpose of administration, monitoring and reporting under this Agreement.

5.5 Reporting

(a) The Council must manage and disperse funds received from the Proponent and prepare reports about the management and dispersal of those funds in accordance with its

obligations under the *Local Government Act 2009* (Qld) and the *Local Government Regulation 2012* (Qld).

5.6 Bank Guarantee

(a) Prior to the Construction Commencement Date, the Proponent must deliver to the Council a Bank Guarantee:

(i) for the amount of $279,300;

(ii) having an expiry date not less than twenty years after the Construction Commencement Date;

(iii) state that it is security for performance of the Proponent's obligations under this Agreement;

(iv) be payable:

(A) either in whole or in part;

(B) on written demand from or on behalf of the Council without reference or prior notice to the Proponent;

(C) despite any notice given to the issuer not to pay to the Council any amount payable under the Bank Guarantee; and

(v) be irrevocable.

(b) The Proponent must ensure that Bank Guarantee is current and enforceable at all times during the period referred to in clause 5.6(a)(ii).

(c) If the Proponent fails to comply with any of its obligations under this Agreement, the Council may demand payment under the Bank Guarantee to compensate the Council for the loss suffered by the Council as a result of the Proponent's default.

(d) The Council's right to call on the Bank Guarantee is not in substitution for or derogation from any other rights the Council may have under this Agreement or at law.

(e) The Council must return to the Proponent the Bank Guarantee provided by the Proponent under this clause within five Business Days after the earlier of:

(i) the expiry date referred to in clause 5.6(a)(ii);

(ii) the End Date; or

(iii) the date on which a replacement Bank Guarantee is provided under clause 5.6(h).

(f) The Council must not call on the Bank Guarantee:

(i) without first giving the Proponent not less than 10 Business Days written notice of its intention to call on the Bank Guarantee; and

(ii) without there being a failure by the Proponent to comply with its obligations under this Agreement.

(g) If Council calls on the Bank Guarantee, the Proponent must replenish the Bank Guarantee to the full amount of the Bank Guarantee required to be provided under this clause within fourteen (14) days of the date Council calls on the Bank Guarantee.

(h) If at any time during the currency of the Bank Guarantee the Proponent assigns, transfers or otherwise disposes of its rights and obligations under this Agreement, the Proponent must procure from the assignee, transferee or disponee (as applicable) and provide to the Council a replacement Bank Guarantee.

6 CPI Clause — Index Point Change

(a) This clause applies to an amount in this Agreement which is stated to be indexed in accordance with this clause.

(b) On each anniversary of the Construction Commencement Date up to and including the 10th anniversary of the Construction Commencement Date, the Multiplier is to be indexed in accordance with the following formula:

$$P = \frac{A \times B}{C}$$

where:

P means the Multiplier for the following year;

A means the Multiplier for the year just ended;

B means the Index Number last published before the expiration of the year just ended; and

C means the Index Number last published before the commencement of the year just ended.

For the avoidance of doubt the Multiplier will not be indexed prior to 1 January 2029.

(c) On the 11th anniversary after the Construction Commencement Date, the Multiplier is to be indexed in accordance with the following formula:

$$P = \frac{A \times B}{C}$$

where:

P means the Multiplier for the 11th anniversary of the Construction Commencement Date;

A means $163;

B means the Index Number last published before the 11th anniversary of the Construction Commencement Date; and

C means the Index Number last published before 1 January 2029.

(d) On each anniversary of the Construction Commencement Date on and after the 12th anniversary of the Construction Commencement Date, the Multiplier is to be indexed in accordance with the following formula:

$$P = \frac{A \times B}{C}$$

where:

P means the Multiplier for the following year;

A means the Multiplier for the year just ended;

B means the Index Number last published before the expiration of the year just ended; and

C means the Index Number last published before the commencement of the year just ended.

(e) If the Index Number is the CPI and that Index Number is revised or corrected by the Australian Bureau of Statistics after the Annual Financial Contribution has been calculated, then that Annual Financial Contribution will be revised in accordance with the revised or corrected Index Number applied to the Multiplier.

(f) If the Annual Financial Contribution has been paid, then a cash adjustment will be made between the parties, within 10 Business Days of the revision or correction, as required.

(g) If the percentage change in the Index Number for a relevant period is zero or negative, the Multiplier for that year will remain the same as the Multiplier in the immediately preceding year except that this does not apply to the change to the Multiplier at the 11th anniversary of the Construction Commencement Date.

7 Termination

(a) The Proponent may terminate this Agreement by giving a Notice to the Council if:

(i) the MCU Development Application is not lodged, is withdrawn or is refused;

(ii) the MCU Development Approval does not take effect, lapses or is cancelled;

(iii) the Proponent decides it does not wish to act on the Development Approval for the MCU Development Application; or

(iv) the Project permanently ceases commercial operations and is decommissioned in accordance with the conditions of the Development Approval for the MCU Development Application.

(b) Termination of this Agreement does not affect any accrued rights or remedies of any party.

(c) The parties agree that a breach of this Agreement by a party will not give any other party a right to terminate this Agreement, however, any other party may exercise any other remedy available to it in respect of the breach.

8 Dispute Resolution

8.1 Negotiation

If there is a dispute or difference (***Dispute***) between the parties arising out of or in connection with this Agreement, then within five Business Days of a party notifying the other party in writing of the Dispute, a senior representative from each party must meet and use all reasonable endeavours acting in good faith to resolve the Dispute by joint discussions.

8.2 Mediation

(a) If the Dispute is not settled within five Business Days of notification under clause 8.1, the parties will, if mutually agreed, submit the Dispute to mediation administered by the Australian Disputes Centre (***ADC***).

(b) The mediator will be an independent person agreed between the parties from a panel suggested by the Chief Executive Officer of ADC or, failing agreement, a mediator will be appointed by the Chief Executive Officer of the ADC.

(c) Any mediation meetings and proceedings under this clause will be held in a location agreed by the parties.

(d) All communications during the mediation are confidential and must be treated as made in the course of compromise and settlement negotiations for the purposes of the applicable rules of evidence and any professional secrecy protections provided by applicable law.

8.3 Court proceedings and other relief

A party may not start court proceedings in relation to a Dispute until it has exhausted the procedures in this clause, unless the party seeks injunctive or other interlocutory relief.

8.4 Continuation of rights and obligations

Despite the existence of a dispute or difference each party must continue to perform this Agreement.

9 Force Majeure

9.1 Event of Force Majeure

(a) If a party is prevented in whole or in part from carrying out its obligations under this Agreement (other than an obligation to pay money) as a result of Force Majeure, it must promptly give a Notice to the other party that complies with clause 9.2.

(b) Following the giving of this Notice, and while the Force Majeure continues, the obligations which cannot be performed (other than an obligation to pay money) because of the Force Majeure will be suspended if the party giving the Notice has taken all proper precautions, due care and reasonable alternatives with the intention of avoiding the delay or failure and of carrying out its obligations under this Agreement.

9.2 Force Majeure notice

A Notice given under clause 9.1 must:

(a) specify the obligations a party cannot perform;

(b) fully describe the event of Force Majeure;

(c) estimate the time during which the Force Majeure will continue; and

(d) specify the measures proposed to be adopted to remedy or abate the Force Majeure.

9.3 Remedy of Force Majeure

The party that is prevented from carrying out its obligations under this Agreement as a result of Force Majeure must remedy the Force Majeure to the extent reasonably practicable and resume performance of its obligations as soon as reasonably possible.

9.4 Mitigation

The party that is prevented from carrying out its obligations under this Agreement as a result of Force Majeure must take all action reasonably practicable to mitigate any loss suffered by the other party as a result of its failure to carry out its obligations under this Agreement.

9.5 No requirement to settle labour dispute

A party is not required, under clauses 9.1, 9.2 or 9.3, to settle any labour dispute against its will or to test the validity or refrain from testing the validity of Federal, State or local law, order, rule or regulation.

9.6 Exclusion from Force Majeure

Any legislation, regulation or other act of any Queensland governmental, semi-governmental or other public or statutory authority will not constitute Force Majeure affecting the Council unless and except to the extent that the legislation, regulation or other act:

(a) applies generally in the State of Queensland; and

(b) is made in good faith and not for the purpose of affecting the obligations of the Council under this Agreement.

10 GST

10.1 Recovery of GST

If GST is payable, or notionally payable, on a supply made under or in connection with this Agreement, the party providing the consideration for that supply must pay as additional consideration an amount equal to the amount of GST payable, or notionally payable, on that supply (the ***GST Amount***). Subject to the prior receipt of a tax invoice, the GST Amount is payable at the same time that the other consideration for the supply is provided. If a tax invoice is not received prior to the provision of that other consideration, the GST Amount is payable within 10 days of the receipt of a tax invoice. This clause does not apply to the extent that the consideration for the supply is expressly stated to be GST inclusive or the supply is subject to reverse charge.

10.2 Liability net of GST

Where any indemnity, reimbursement or similar payment under this Agreement is based on any cost, expense or other liability, it shall be reduced by any input tax credit entitlement, or notional input tax credit entitlement, in relation to the relevant cost, expense or other liability.

10.3 Adjustment events

If an adjustment event occurs in relation to a supply made under or in connection with this Agreement, the GST Amount will be recalculated to reflect that adjustment and an appropriate payment will be made between the parties.

10.4 Survival

This clause will not merge upon completion and will continue to apply after expiration or termination of this Agreement.

10.5 Definitions

Unless the context requires otherwise, words and phrases used in this clause that have a specific meaning in the GST law (as defined in the *A New Tax System (Goods and Services Tax) Act 1999* (Cth)) shall have the same meaning in this clause.

11 Notices

Any notice, demand, consent or other communication (a ***Notice***) given or made under this Agreement:

(a) must be in writing and signed by the sender or a person duly authorised by the sender (or in the case of email, set out the first and last name and position or title of the sender or person duly authorised by the sender);

(b) subject to clause 11(c), must be delivered to the intended recipient by prepaid post (if posted to an address in another country, by registered airmail) or by hand or email to the address or email address most recently notified by the intended recipient to the sender. Until further notice, that recipient, address and email address is as below:

(a)	to K3W Project Co. Pty Ltd as trustee for the K3W Project Trust:	Address: Suite 12.03, L12, 35 Clarence Street, Sydney NSW 2000 Email: jb@genexpower.com.au Attention: James Birkmanis

(b)	to Etheridge Shire Council:	Address: 41 St George St, Georgetown, Queensland 4871 Email: louisek@etheridge.qld.gov.au Attention: The Chief Executive Officer

(c) will be taken to satisfy the obligations in clause 11(b) if:

(i) where a party changes its address and fails to notify the other party of the new address, the Notice is delivered to the intended recipient at that new address; and

(ii) where an individual named in clause 11(b) ceases to work in the relevant role or ceases to work for the relevant party and the relevant party fails to notify the other party in accordance with this clause 11 of an alternative individual to whom Notices should be addressed (and, if relevant, an alternative email address to which Notices should be sent), the Notice is addressed to (and, if relevant, delivered to the email address of) an individual in the same or equivalent role as the intended recipient; and

(d) will be conclusively taken to be duly given or made and received:

(i) in the case of delivery in person, when delivered;

(ii) in the case of delivery by express post, to an address in the same country, two Business Days after the date of posting;

(iii) in the case of delivery by any other method of post, six Business Days after the date of posting (if posted to an address in the same country) or 10 Business Days after the date of posting (if posted to an address in another country); and

(iv) in the case of email, at the earliest of:

(A) the time that the sender receives an automated message from the intended recipient's information system confirming delivery of the email;

(B) the time that the intended recipient confirms receipt of the email by reply email; and

(C) three hours after the time the email is sent (as recorded on the device from which the sender sent the email) unless the sender receives, within that three hour period, an automated message that the email has not been delivered,

but if the result is that a Notice would be taken to be given or made and received:

(v) in the case of delivery by hand or post, at a time that is later than 5pm;

(vi) in the case of delivery by email, at a time that is later than 5pm; or

(vii) on a day that is not a Business Day,

in the place specified by the intended recipient as its postal address under paragraph 11(b), it will be conclusively taken to have been duly given or made and received at the start of business on the next Business Day in that place.

12 Confidentiality

12.1 Confidentiality

(a) The contents of this Agreement are not confidential.

(b) Subject to clause 12.2, a party must not disclose, or use for a purpose other than contemplated by this Agreement, any information or documents supplied by the other party in connection with the negotiation, execution and implementation of this Agreement that are not in the public domain (***Confidential Information***).

12.2 Permitted disclosure

A party may disclose any Confidential Information:

(a) to the other party to this Agreement;

(b) under corresponding obligations of confidence as imposed by this clause, to persons which control or are controlled by or are under common control with the party within the meaning of the Corporations Act, and the employees, legal advisors or consultants of such persons;

(c) which is at the time lawfully in the possession of the proposed recipient of the Confidential Information through sources other than the other party, or a Related Body Corporate of the other party, to this Agreement;

(d) in enforcing this Agreement or in a proceeding arising out of or in connection with this Agreement or to the extent that disclosure is regarded by the other party as necessary to protect its interests;

(e) if required under a binding order of a Governmental Agency or under a procedure for discovery in any proceedings;

(f) if required under any Law or any administrative guideline, directive, request or policy whether or not having the force of law;

(g) as required or permitted by this Agreement;

(h) to its legal advisers, its insurers and its consultants; or

(i) with the prior written consent of the other party to this Agreement.

12.3 Survival of obligation

This clause survives the termination of this Agreement.

13 Amendment

This Agreement may be amended only by another agreement executed by all the parties.

14 Assignment

14.1 No assignment by Council

(a) The Council cannot assign, transfer or otherwise dispose of its rights and obligations under this Agreement.

14.2 Assignment by Proponent

(a) The Proponent agrees that if it proposes to assign, transfer or otherwise dispose of its rights and obligations under this Agreement, it will procure from the assignee, transferee or disponee (as applicable) a deed in which that person agrees to be bound by the same terms as contained in this Agreement.

(b) Subject to the Proponent complying with clause 14.2(a), the Proponent shall be released and discharged from:

(i) any obligations under this Agreement and performance of the terms of this Agreement on and from the date of assignment, transfer or disposal;

(ii) all claims and demands in connection with this Agreement arising after the date of assignment, transfer or disposal,

provided that the Proponent is responsible for any claims or demands with respect to its obligations under this Agreement and its performance of this Agreement for the period prior to the date of assignment, transfer or disposal.

15 Costs and Duty

(a) The Proponent shall pay the Council's reasonable fees for the negotiation, preparation and execution of this Agreement as invoiced by the Council. If the fees are to exceed $15,000, the Council must provide evidence of all reasonable costs for the prior approval by the Proponent.

(b) All duty (including stamp duty and any fines, penalties and interest) payable on or in connection with this Agreement and any instrument executed under or any transaction evidenced by this Agreement must be borne by the Proponent.

(c) Except as mentioned in clauses 15(a) and 15(b), the parties must bear their own costs arising out of the negotiation, preparation and execution of this Agreement.

16 Further Assurances

At the reasonable request of a party, each party must do anything necessary or desirable (including executing agreements and documents) to give full effect to this Agreement and the transactions contemplated by it.

17 Entire Agreement

This Agreement contains the entire agreement between the parties with respect to its subject matter. It sets out the only conduct, representations, warranties, covenants, conditions, agreements or understandings (collectively ***Conduct***) relied on by the parties and supersedes all earlier Conduct by or between the parties in connection with its subject matter. None of the parties have relied on or are relying on any other Conduct in entering into this Agreement and completing the transactions contemplated by it.

18 No Waiver

A failure to exercise or a delay in exercising any right, power or remedy under this Agreement does not operate as a waiver. A single or partial exercise or waiver of the exercise of any right, power or remedy does not preclude any other or further exercise of that or any other right, power or remedy. A waiver is not valid or binding on the party granting that waiver unless made in writing

19 Severability of Provisions

Any provision of this Agreement that is prohibited or unenforceable in any jurisdiction is ineffective as to that jurisdiction to the extent of the prohibition or unenforceability. That does not invalidate the remaining provisions of this Agreement nor affect the validity or enforceability of that provision in any other jurisdiction.

20 No Agency or Partnership

Nothing in this Agreement is to be construed as constituting an agency, partnership, joint venture, or any other form of association between the parties in which one party may be liable for the acts or omissions of the other party. No party has the authority to incur any obligation or make any representation or warranty on behalf of, or to pledge the credit of, the other party.

21 Governing Law and Jurisdiction

This Agreement is governed by the laws of Queensland. In relation to it and related non-contractual matters each party irrevocably submits to the non-exclusive jurisdiction of courts with jurisdiction there, and waives any right to object to the venue on any ground.

22 Execution and counterparts

(a) This Agreement may be executed electronically and may be executed in counterparts.

(b) Where a person signs this Agreement electronically, the electronic signature is an effective binding signature, and the electronic document containing it can be an effective electronic counterpart of this Agreement. In addition, the person intends that any print out of the signature by a party, first made by that party will also constitute an effective original signature, so that the print out will also be an executed original counterpart of this Agreement.

23 Joint and Several Obligations

In this Agreement a reference to a right or obligation of any two or more persons confers that right, or imposes that obligation, as the case may be, jointly and severally.

24 No fetter

(a) The Proponent acknowledges that the Council has statutory rights and obligations under the Planning Act and the Planning Regulation.

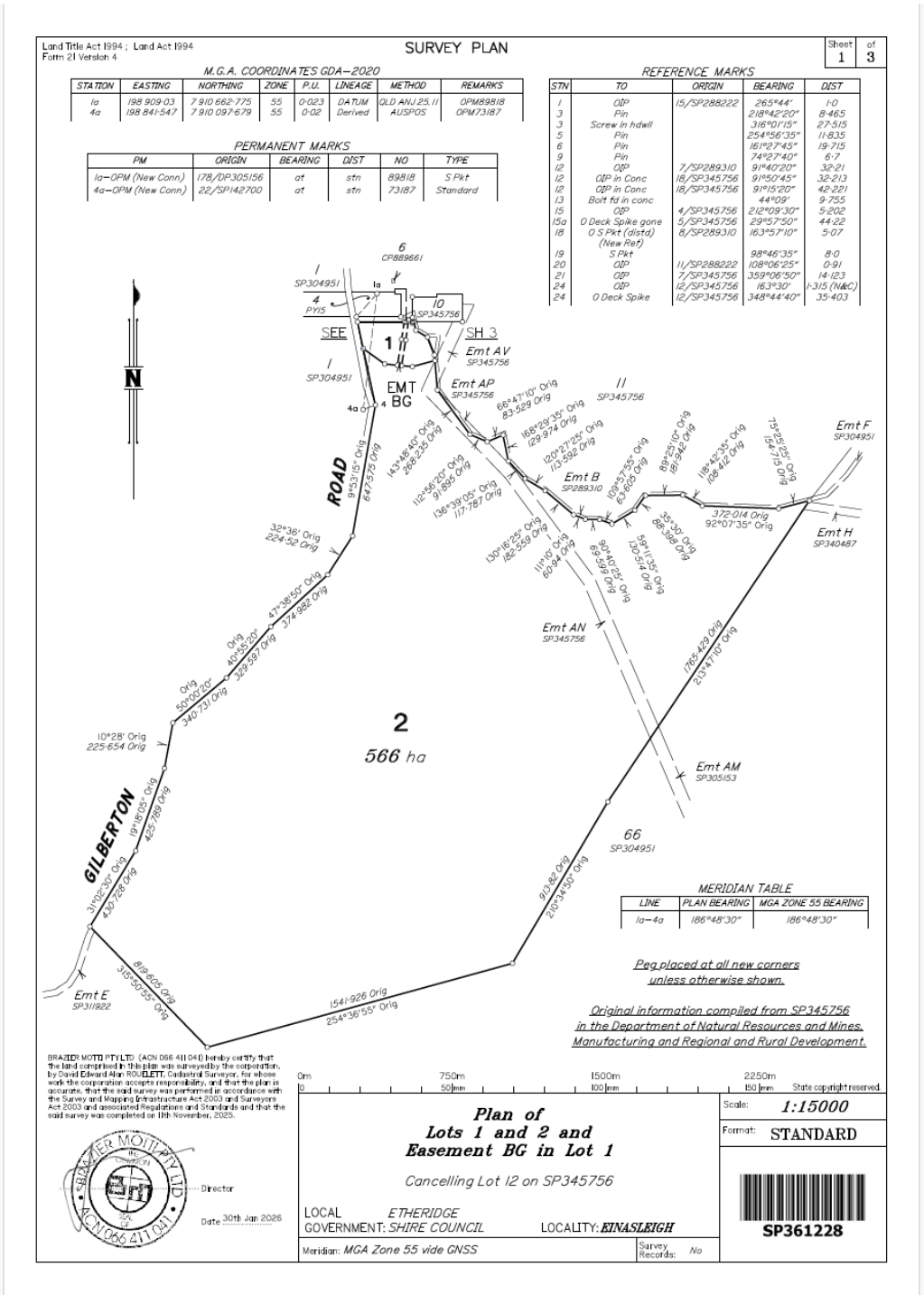
(b) This Agreement is not intended to operate and shall not operate to fetter the ability of the Council to exercise its statutory rights and obligations under the Planning Act or the Planning Regulation.

(c) This Agreement shall not be construed as requiring the Council to do anything that would cause it to be in breach of its obligations under the Planning Act or the Planning Regulation.

Schedule 1 – Reference Schedule

Item	Term	Description
1	Proponent	K3W Project Co. Pty Ltd ACN 664 467 092 as trustee for the K3W Project Trust
2	Council	Etheridge Shire Council
3	Council's Bank Account	Account Name: Etheridge Shire Council BSB No: 633000 Account No: 128914769
4	Land	The land described as proposed Lot 1 SP361228, being part of Lot 12 SP345756, as shown on the deposited survey plan in Schedule 2.
5	Project	To construct, operate and decommission a standalone Battery Storage Facility, forming part of the Kidston Clean Energy Hub, with a capacity of up to 250MW / 1,250 MWh, together with ancillary substation, switchgear room, control room, warehouse, filter bank, parking and grid connection.
6	Annual Financial Contribution	(a) A dollar amount equal to the sum of the Base Component and the Top Up Component. (b) The Base Component is 720 MWh multiplied by the Multiplier (in $). (c) The Top Up Component is C multiplied by the Multiplier (in $). *where* C is the Guaranteed Usable Energy Capacity of the Project in megawatt hours during the relevant Payment Year as notified by the Proponent, minus 720 MWh. If the Top Up Component is a number that is less than 0, the Top Up Component is $0.
7	Multiplier	$194 per megawatt hour: ■ for the first 10 years after the Construction Commencement Date; ■ indexed after 1 January 2029 in accordance with clause 6, but so as not to exceed a maximum increase of 5% per annum. $163 per megawatt hour: ■ from the 11th anniversary after the Construction Commencement Date and for the balance of the Term; ■ indexed after 1 January 2029 in accordance with clause 6, but so as not to exceed a maximum increase of 5% per annum.
8	Administration Payment	5% of the Annual Financial Contribution

Schedule 2 – Lot 1 SP361228



Land Title Act 1994 ; Land Act 1994
Form 21B Version 2

(Dealing No.)

WARNING : Folded or Mutilated Plans will not be accepted. Plans may be rolled. Information may not be placed in the outer margins.

Sheet 2 of 3

4. Lodged by

(Include address, phone number, email, reference, and Lodger Code)

1. Existing		Created		
Title Reference	Description	New Lots	Road	Secondary Interests
51391845	Lot 12 on SP345756	1 and 2		Easement BG

MORTGAGE ALLOCATIONS

Mortgage	Lots Fully Encumbered	Lots Partially Encumbered
717877673	1 and 2	–
719806131	1 and 2	–

EXISTING LEASE ALLOCATIONS

Lease	Lots to be Encumbered
717877676	1 and 2

BENEFIT EASEMENT ALLOCATIONS

Easement	Lots Fully Benefited	Lots Partially Benefited
717620881 (Emt B on SP289310)	1 and 2	–
719713200 (Emt F on SP304951)	1 and 2	–
719713200 (Emt G on SP304951)	1 and 2	–

ENCUMBRANCE EASEMENT ALLOCATIONS

Easement	Lots to be Encumbered
724227178 (Emt AN on SP345756)	2
724227180 (Emt AW on SP345756)	1

EXISTING ADMINISTRATIVE ADVICE ALLOCATIONS

Administrative Advice	Lots to be Encumbered
716101553	1 and 2

Easement BG does affect Lease 717877676 as at 5/01/2026.

This plan to register before SP361229 and SP361230.

REINSTATEMENT REPORT

Plans searched:
PY10, PY15, SP142700, SP258871, SP257047, SP287774, SP287796, SP288222, SP289310, SP304951, SP311922 & SP345756.

The majority of the original corners were fixed by original corner and/or reference marks with the following differences observed:
Distance 1– 4 measured 30mm short compared to SP288222, this was left in the longer line 2–4. 1–20 measured 6mm short and 2–18 measured 20mm long compared to SP288222. Angle 4–2–18 measured +10" and angle 4–1–20 measured –25" compared to SP288222. The OSPKT at 18 was found disturbed and has been re–referenced.

Stn 15 was reinstated by the OP and OIP, then stn 15a was reinstated by original occupation. 15a – 24 measured +15mm compared to SP345756 and 15a–21 agreed. Original angle 24–15a–21 was maintained. Stn 14 was then reinstated at original distance (SP345756) from 15a. The OIP at 24 disagreed with the OP & ODeck Spike and is shown as n&c.
Stn16 – 18 measured –23mm compared to SP345756.

The distance 9 – 12 measured 33mm short overall compared to SP345756 which was distributed to stn 11, 12–13 measured +7mm.
Distance 9 – 10 measured 17mm long compared to SP345756.

GNSS RTK was used for initial datum connection, MGA meridian and coordinates were confirmed vide GNSS Static and AUSPOS for GIS data outputs.

Lots	Orig
1 and 2	Lot 2 on SP275047

2. Orig Grant Allocation :

3. References :
Dept File :
Local Govt :
Surveyor : 43570/005–01 – 43507_002A.dwg – BM – 12/2025 – V0

5. Passed & Endorsed :
By : BRAZIER MOTTI PTY LTD
Date : 30th Jan 2026
Signed :
Designation : Cadastral Surveyor

6. Building Format Plans only.
I certify that :
* As far as it is practical to determine, no part of the building shown on this plan encroaches onto adjoining lots or road
* Part of the building shown on this plan encroaches onto adjoining *lots and road

Cadastral Surveyor/Director * Date
*Delete words not required

7. Lodgement Fees :

Survey Deposit	$.....
Lodgement	$.....
.....New Titles	$.....
Photocopy	$.....
Postage	$.....
TOTAL	$.....

8. Insert Plan Number SP361228

Each person executing this Agreement on behalf of a party states that they have no notice of revocation or suspension of their authority.

Executed in accordance with section 127 of the *Corporations Act 2001* by K3W Project Co. Pty Ltd as trustee for the K3W Project Trust:

Director	~~Director~~/Secretary
Craig Francis	Ana Gomiero-Guthrie
Print Name	Print Name

Executed by Etheridge Shire Council in accordance with section 236 of the *Local Government Act 2009 (Qld)*:

gbethel	
Signature of Witness	Signature of Authorised Officer
GEMMA BETHEL	Louise Knol
Name of Witness	Name of Authorised Officer
	CEO
	Office Held

Appendix R Pre-lodgement Meeting Minutes

PA6-L

DELIVERING FOR QUEENSLAND | Queensland Government

Department of
State Development,
Infrastructure and Planning

SARA reference: 2512-49857 SPL

29 January 2026

K3W Project Co Pty Ltd
c/- NGH Consulting
qldprojects@nghconsulting.com.au

Dear Amylee Quirk,

SARA Pre-lodgement advice – Battery storage facility at Kidston

I refer to your pre-lodgement meeting held on 28 January 2026 (**Attachment 1**) in which you sought pre-lodgement advice from the State Assessment and Referral Agency (SARA) regarding the proposed development at the above address.

This notice provides advice on aspects of the proposal that are of relevance to SARA that is based on the documentation uploaded into MyDAS2 on 12 December 2025.

Development details

Summary of proposal:	The proposed development is for a Battery storage facility (BSF) with a storage capacity which consists of a standalone Grid Forming BESS of up to approximately 250 Megawatt (MW)/1,000 Megawatt Hour (MWh), near the town of Kidston, near Einasleigh, Far North Queensland. It is proposed to be constructed in the northern section of the Kidston Solar Farm lot, directly adjacent to the Aurumfield Substation and will connect from a private project substation into the Aurumfield Substation at 275 kilovolts (kV). The Project is part of the Kidston Clean Energy Hub (Clean Energy Hub) which currently comprises the 50 MW Kidston Solar Project, operating since 2017, and the 250 MW / 2,000 MWh Kidston Pumped Storage Hydro Project (K2-Hydro), currently under construction. The Project will provide utility-scale energy storage to support the National Electricity Market and enhance regional grid stability. Once developed, the Clean Energy Hub will be labelled as a world first integration of pumped storage hydro, solar and battery storage.
SARA role:	Assessment manager
Description:	Development permit for Material change of use for BSF
Street address:	Kidston (Etheridge Shire Council)

Real property description:	Lot 12 on SP345756

Pre-lodgement advice

SARA provides the following pre-lodgement advice:

- Table 1: SARA advice in response to applicant's request
- Table 2: Additional SARA advice

Table 1: SARA advice in response to applicant's request	
1.	**Advice requested:** Is a Fire Safety Study (FSS) / Strategy required at the development application (DA) stage, or is it appropriately conditioned, noting conflicting guidance in the Planning Guideline?
	SARA advice: A FSS should be prepared and lodged with an application to demonstrate compliance with Performance Outcomes (PO) PO2-PO7 of State code 27 of the State Development Assessment Provisions (SDAP). The FSS should identify hazards and fire prevention strategies prepared in line with the information on Fire Safety for Battery Energy Storage Systems available at Queensland Fire Department's Renewable Energies webpage, available at https://www.fire.qld.gov.au/compliance-and-planning/renewable-energies. Conditions will be imposed requiring the preparation of a separate FSS to ensure that construction and operational workforces, surrounding sensitive receptors and existing facilities exposure to the potential risks from the use is mitigated where it cannot be avoided.
2.	**Advice requested:** Where no ecological values are identified, is a full Ecological Assessment Report (EAR) required, or is a planning justification sufficient?
	SARA advice: Evidence from a suitably qualified environmental consultant needs to be provided to demonstrate that no environmental values will be impacted (protected wildlife / areas of high ecological value). Where impacts are minor and there are no mapped constraints, this can usually be addressed as a concise environmental section within the planning / technical report rather than a separate EAR, provided explicit confirmation of the absence of mapped values and low impact.
3.	**Advice requested:** Where agricultural impacts are not triggered, can this be addressed by statement rather than a standalone assessment?
	SARA advice: Given the low-risk nature of the proposal, SARA acknowledges a comprehensive ALA may not be required in this instance. If the ALA is addressed within the planning report, the report must adequately demonstrate that the development: • avoids unacceptable loss of high-quality agricultural land (PO9) • avoids land fragmentation, ensuring land connectivity to support ongoing agricultural use (PO10) will maintain soil fertility and productivity (avoiding irreversible impacts on soil quality), and will allow for restoration to pre-construction values after operations cease (PO11) • if on or near a stock route network, does not compromise its primary purpose for moving stock (PO12).

4.	**Advice requested:** Where no pipelines or relevant infrastructure are present, can this be addressed within the planning report without a separate technical report?
	SARA advice: Where searches and mapping show there are no pipelines or resource activities, this can be addressed within the planning report by citing search outcomes and confirming there is no impact.
5.	**Advice requested:** Is a decommissioning security or financial assurance required where the landowner is also the project operator?
	SARA advice: State code 27 of the SDAP does not provide an exemption for this scenario. SARA is currently preparing additional guidance on the requirements of the Decommissioning Security Report, including timing of provision of this security and the management of commercially in confidence information. Once finalised, SARA will coordinate this guidance with you.
6.	**Advice requested:** What are the triggers for a Visual Impact Assessment (VIA), and is it required where the site is not within a scenic amenity overlay and has no sensitive receptors nearby?
	SARA advice: Where a BSF is not in an area identified with scenic amenity/landscape values, is well set back from sensitive receptors and is largely screened by topography/vegetation, visual impacts can be addressed in a qualitative visual/amenity section of the report, ensuring the development meets PO22 of State code 27 (with supporting evidence including photo viewpoints), rather than a full specialist Visual Impact Assessment Report (VIAR).
7.	**Advice requested:** Can hydrology be assessed separately from a broader natural hazards assessment where relevant?
	SARA advice: It is acceptable to assess hydrology (including stormwater quantity/quality, drainage, flood) in a separate technical report from broader natural hazards, provided both are clearly cross-referenced and together, can clearly demonstrate compliance with the relevant PO's.
8.	**Advice requested:** Are there prescribed setbacks for transmission lines under State code 27 of the SDAP, or are setbacks performance-based?
	SARA advice: It is recommended that you consult with the relevant transmission network service provider (i.e. Powerlink) as part of the application process to determine adequate setback requirements. It is recommended the relevant transmission network service provider design and safety standards (e.g. easements, clearances, access corridors) are confirmed and referenced within the application material to demonstrate compliance. As part of the assessment process, SARA will also seek advice from energy service providers.
9.	**Advice requested:** Is assessment limited to State code 27 of the SDAP and State interests, or must local planning scheme overlays and codes also be addressed?
	SARA advice: SARA must have regard to prescribed matters (including elements of relevant planning schemes and common material). You can briefly detail how the relevant assessment benchmarks comply within the planning report to be submitted with the application.
10.	**Advice requested:** How are existing preliminary approvals and change applications for approved solar farms with capacity for BSF treated under State code 27 of the SDAP?

	SARA advice: Minor change applications will need to be assessed by the Council. Other change applications will need to be submitted to SARA and assessed under State code 27 of the SDAP. A preliminary approval is not considered a development permit, as it does not authorise the commencement of development. For renewable energy projects, a preliminary approval may provide a framework for future development but does not, by itself, authorise the development to proceed.

Note: Advice relating to vegetation clearing may be shared separately.

The following additional advice outlines aspects that are relevant from the jurisdiction of SARA:

Table 2: Additional SARA advice	
State Development Assessment Provisions (SDAP)	
1.	You are encouraged to review State Code 27 of the SDAP. This is the assessment benchmark which SARA will have regard to in its assessment of the proposed change. There is also guidance material available to assist applicant's in addressing each of the PO's in State Code 27 of the SDAP.
Community benefit system	
2.	The department's website contains useful information on its community benefit system and its relationship to renewable energy projects. This website provides information for proponents on how the community benefit system works and the requirement for renewable energy proponents to conduct a social impact assessment and enter into a community benefit agreement with the local government (as a minimum) before lodging a development application.

This advice is provided in good faith and is:

- based on the material and information provided to SARA
- current at the time of issue
- not applicable if the proposal is changed from that which formed the basis of this advice.

This advice does not constitute an approval or an endorsement that SARA supports the development proposal. Additional information may be required to allow SARA to properly assess the development proposal when a formal application has been lodged.

If you require further information please contact Alex Ponomarev, on (07) 5644 3200 or via email alexandra.ponomarev@dsdip.qld.gov.au who will be pleased to assist.

Yours sincerely



Thomas Gardiner
Principal Planning Officer

Attachment 1 — Pre-lodgement meeting details

Meeting date	28 January 2026
Meeting location	Microsoft Teams
Meeting chair	Thomas Gardiner

Meeting attendees:

Name	Position	Organisation
Thomas Gardiner	Principal Planning Officer	Department of State Development, Infrastructure and Planning (DSDIP)
Amylee Quirk	Technical Lead	NGH Consulting
Jane Mills	General Manager of Planning and Environmental Management	NGH Consulting
James Birkmanis	Senior Project Manager	Genex Power
Jordan Newbound	Assistant Project Manager	Genex Power
Ben Williams	General Manager – Development and Construction	Genex Power

Appendix S Assessment Manager Decision

Deputy Premier
Minister for State Development, Infrastructure and Planning and Minister for Industrial Relations
BRIEFING NOTE FOR DECISION

Our ref: MBN26/891
Date: 5 August 2026

SUBJECT Determination of Assessment Manager – Material change of use for Battery Storage Facility – Kidston Clean Energy Hub

☑ Approved ☐ Not approved ☐ Noted ☐ Further information required (see comments) ***This briefing note is considered draft until signed***	Signed..... Date. 10/8/26 Hon Jarrod Bleijie MP, Deputy Premier, Minister for State Development, Infrastructure and Planning and Minister for Industrial Relations Comments:

ACTION REQUIRED BY There is no specific timeframe required.

RECOMMENDATION

It is recommended that you:

- **note** that you must decide whether the Chief Executive of the *Planning Act 2016* (the Planning Act) (the Chief Executive) or the Etheridge Shire Council (the Council) is the assessment manager for a material change of use development application for Battery Storage Facility (BSF) for the Kidston Clean Energy Hub (the project)
- **approve** the Chief Executive as the assessment manager for the project involving a development permit for material change of use for a BSF, in accordance with section 48(6) of the Planning Act
- **approve** that the Council is a referral agency (power limited to advice only), in accordance with section 48(7) of the Planning Act
- **sign** the attached letter to Ms Amylee Quirk, Technical Lead – Environmental Assessment and Approvals, NGH, on behalf of K3W Project Co Pty Ltd as trustee for the K3W Project Trust (the applicant) (**Attachment 1**) and provide a copy of the letter to the affected Council, advising of your decision.

BACKGROUND

- On 12 December 2025, the Planning (Battery Storage Facilities) and Other Legislation Amendment Regulation 2025 (the Amendment Regulation) commenced which amended the way BSFs are regulated. The intent was to nominate that the Chief Executive is the assessment manager for BSFs.
- Despite this intent, there is unintended ambiguity in the Planning Regulation 2017 (the Planning Regulation) on who is the assessment manager for BSFs because of the changes brought about by the Amendment Regulation. Specifically, section 21(5)(b) of the Planning Regulation can be read that, where a BSF is assessable under the Planning Regulation and a Local Government planning scheme, the Planning Minister must decide who is the assessment manager.
- A BSF is also assessable under the *Etheridge Shire Council Planning Scheme 2020* with the Council as the assessment manager. Therefore, the Chief Executive and the Council can both be an assessment manager for the project.
- The result of this unintended ambiguity mandates the need for the assessment manager determination.

Deputy Premier
Minister for State Development, Infrastructure and Planning and Minister for Industrial Relations
BRIEFING NOTE FOR DECISION

Our ref: MBN26/891
Date: 5 August 2026

- On 22 July 2026, the applicant wrote to you requesting a determination of assessment manager for the proposed development application (**Attachment 2**). The applicant requested that you determine the assessment manager for the development application is the Chief Executive.

- To facilitate the project, the applicant seeks to develop Lot 12 on SP345756, Einasleigh as follows:
  - development permit for a material change of use for a BSF (including ancillary infrastructure).

- The local context plan and proposal plan are provided (**Attachment 3**).

- It is understood the proponent is yet to execute the Community Benefit Agreement with the Council for the project.

KEY ISSUES

- The recommendation to appoint the Chief Executive as the assessment manager for the application is consistent with the intent of the Amendment Regulation. This approach seeks to ensure consistent assessment requirements and outcomes for BSF development, as reflected in the assessment benchmarks of State code 27: Battery storage facility development of the State Development Assessment Provisions.

- It is recommended the Council be a referral agency in an advice-only capacity, as this reflects the future intent for Local Government involvement as a third-party advice agency for BSFs.

- The Department of State Development, Infrastructure and Planning's Assessment Report (**Attachment 4**) provides a detailed assessment of the proposal.

RESULTS OF CONSULTATION

- On 21 July 2026, the Council advised the applicant that the Chief Executive should be the assessment manager for the development application. The Council advised it would appreciate the opportunity to review the application (**Attachment 5**).

RESOURCE/FINANCIAL IMPLICATIONS

- There is no resource (e.g. staffing) or financial implications associated with this briefing note.

HUMAN RIGHTS ACT

- You are a public entity under the *Human Rights Act 2019* (the HR Act). Under section 58(1) of the HR Act, it is unlawful for you:
  - to act or make a decision in a way that is not compatible with human rights; or
  - in making a decision, to fail to give proper consideration to a human right relevant to the decision.

- **Attachment 6** is a human rights compatibility assessment for the decision which you should review. If you agree with the contents of the assessment, you can be satisfied that the decision is compatible with human rights under the HR Act because it limits a human right only to the extent that is reasonable and demonstrably justified in accordance with section 13 of the HR Act.

Author	Approved by (Dir/Exec Dir)	Approved by (DDG)	A/Director-General Endorsement
Name: Brendan Standen Position: Principal Planning Officer Unit: Planning Services Tel/Mob No: 3035 2085 Date: 30 July 2026	Name: Kaye Atkins Position: Executive Director Branch: Planning Services Tel/Mob No: 3452 7737 Date: 31 July 2026	Name: Peta Harwood Division: Planning Group Tel/Mob No: 3244 9383 Date: 4 August 2026	Name: Shaun Ferris Signed: Date ...../...../.....

This briefing note is considered draft until signed.

NGH Pty Ltd

NSW • ACT • QLD • VIC

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Building 1, 30 Chancellor Village Boulevard
Sippy Downs QLD 4556

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Surry Hills NSW 2010

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Townsville QLD 4810

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T. (02) 6971 9696

WODONGA

Unit 2, 83 Hume Street
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T. (02) 6067 2533

Item No: **10.4**

Subject: **Councillor Workshop Policy**

Classification: **Open**

Author: **Louise Knol, Chief Executive Officer**

EXECUTIVE SUMMARY

A review of Council's existing arrangements for Councillor workshops has identified an opportunity to strengthen governance, transparency, accountability and role clarity through the adoption of a formal Councillor Workshop Policy. The proposed policy replaces the existing workshop Terms of Reference and establishes clear governance requirements relating to workshop purpose, attendance, conduct, conflict of interest management, confidentiality, meeting records and workshop administration.

The policy reinforces that Councillor Workshops are non-decision-making forums intended to inform Councillors, facilitate strategic discussion and assist future decision-making through formal Council meetings. Any decisions requiring Council authority must continue to be determined at an Ordinary or Special Meeting of Council.

To ensure consistency across Council's governance framework, the Council Monthly Meeting Framework has also been updated to formally recognise Councillor Workshops as a recurring monthly activity and reinforce that Council Meetings remain the sole decision-making body of Council.

RECOMMENDATION

That Council:

1. Adopt the ESC-C068 Councillor Workshop Policy as presented with this report;
2. Resolve that the existing Briefing and Strategic Workshop Terms of Reference be superseded upon commencement of the policy;
3. Note the updated Council Monthly Meeting Framework, incorporating Councillor Workshops as a standing component of Council's governance framework; and
4. Authorise the Chief Executive Officer to undertake any administrative updates required to implement the adopted policy and associated governance documents.

BACKGROUND

Council has historically conducted Briefing and Strategic Workshops to provide opportunities for information sharing between Councillors and officers, discussion of strategic matters and consideration of complex issues prior to formal decision-making. These workshops have operated under the existing Briefing and Strategic Workshop Terms of Reference.

While the existing Terms of Reference establish that workshops are not decision-making bodies and have no delegated authority, they do not provide the comprehensive governance framework expected under contemporary local government governance practices.

To address this, a new Councillor Workshop Policy has been developed to provide greater clarity regarding:

- workshop purpose and status;
- governance expectations;
- standards of conduct;
- confidentiality obligations;
- conflicts of interest;

- attendance requirements;
- workshop administration; and
- recordkeeping practices.

The proposed policy establishes a formal governance framework for Councillor Workshops and informal briefings. The policy confirms workshops are intended to:

- brief Councillors on complex and strategic matters;
- provide opportunities to ask questions and seek clarification;
- receive presentations from external parties;
- provide strategic guidance; and
- support future reports and decision-making processes without making Council decisions.

The policy clearly states that workshops are not formal meetings of Council and that any matter requiring a decision must be referred to a formal Council meeting for determination.

The proposed Councillor Workshop Policy incorporates and expands upon the governance intent of the existing Terms of Reference. The current arrangements relating to workshop purpose, information sharing, agenda management and non-decision-making status have been retained and strengthened through the introduction of improved governance provisions. Accordingly, adoption of the policy will render the existing Terms of Reference redundant, and it is proposed they be formally superseded.

The Council Monthly Meeting Framework has been amended to align with the proposed policy and clearly identify the role of Councillor Workshops within Council's governance structure. The framework:

- confirms Council Meetings as the only decision-making forum;
- distinguishes workshops as information-sharing and strategic discussion forums;
- incorporates Councillor Workshops as a standing monthly activity generally held on the last Wednesday of each month; and
- continues to recognise other workshops, including budget workshops, as required.

The framework describes Councillor Workshops as: *"Workshops for briefings, presentations, provision of strategic guidance without making (or appearing to make) decisions outside of a formal council meeting."*

The proposed policy supports the local government principles contained within the *Local Government Act 2009*, including:

- transparent and effective processes;
- decision-making in the public interest;
- good governance;
- ethical and legal behaviour; and
- meaningful community engagement.

The policy also supports Council's ongoing commitment to strengthening governance practices and maintaining a clear distinction between strategic discussion and formal decision-making.

LINK TO CORPORATE PLAN

Corporate Plan Aim No. 5: Best practice corporate governance and organisational excellence.
Corporate Outcome No 5.2: Council operations support quality service provision and good governance.
Corporate Outcome No 5.3: Council provides community leadership through financial sustainability and an open and accountable governance structure.

BUDGET & RESOURCE CONSIDERATIONS

There are no significant financial implications associated with the adoption of the policy. Any implementation activities will be undertaken within existing operational resources.

LEGAL CONSIDERATIONS

The proposed policy supports compliance with governance principles contained within the *Local Government Act 2009.*

POLICY IMPLICATIONS

The proposed policy and changes to the Council Monthly Meeting Framework complements Council's existing governance framework, including Standing Orders, Councillor conduct obligations, and conflict of interest requirements.

CONSULTATION

Internal Consultation: Internal consultation through Councillor Workshop.

RISK ASSESSMENT

Risk Assessment Outcome: Low

ATTACHMENTS

1. ESC - C068 Councillor Workshop Policy [**10.4.1**]
2. ESC - Council Meeting Framework Sept 2026 Final [**10.4.2**]
3. ESC - Briefing and Strategic Workshop Terms of Referenece Superseded [**10.4.3**]

ETHERIDGE SHIRE COUNCIL



ESC – C068 COUNCILLOR WORKSHOP POLICY

POLICY VERSION AND REVISION

Version History	Meeting date	
	14th October 2026	
	Resolution number	
	26.10.	
Approval by CEO		
Effective date	**Review date**	
14th October 2026	**October 2028**	
Policy Author		
Louise Knol – Chief Executive Officer		
Current incumbent		
Louise Knol		
Implementation Officer		
Chief Executive Officer		
Current incumbent	**Contact number**	**Official file no.**
Louise Knol	**4079 9090**	**ESC – C068**

ETHERIDGE SHIRE COUNCIL



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ETHERIDGE SHIRE COUNCIL



1. PURPOSE

The purpose of this policy is to set consistent procedures for the planning, conduct, and recording of Councillor Workshops (also referred to as informal meetings / briefings / workshops) so Councillors can:

a) be briefed on complex or strategic matters;
b) ask questions and seek clarification of officer advice; and
c) provide strategic guidance to inform future reports—without making (or appearing to make) Council decisions outside a formal Council meeting.

This policy supports good governance and transparency consistent with the local government principles under the Local Government Act 2009 (the Act).

2. LOCAL GOVERNMENT PRINCIPALS

The local government principles apply to this policy (Local Government Act s4(2)) –

a) transparent and effective processes, and decision-making in the public interest; and
b) sustainable development and management of assets and infrastructure, and delivery of effective services; and
c) democratic representation, social inclusion and meaningful community engagement; and
d) good governance of, and by, local government; and
e) ethical and legal behaviour of councillors, local government employees and councillor advisors.

3. SCOPE

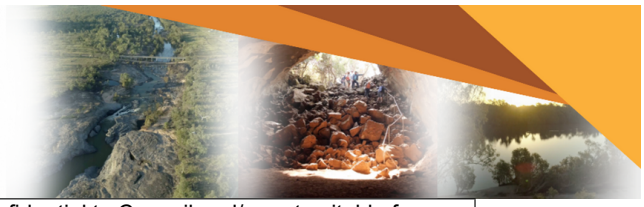
This policy applies to:

a) all Councillors;
b) the CEO and all Council employees attending or presenting at a Councillor Workshop; and
c) invited external attendees (e.g., consultants, agency representatives) when present.

This policy does not replace Council's statutory meeting procedures (Standing Orders / Meeting Procedures) which apply to formal Council and committee meetings under the Local Government Regulation 2012 (the Regulation).

4. DEFINITIONS

Term	Definition
Councillor Workshop (Workshop)	A non-statutory, non-decision-making forum convened for information exchange, briefings, strategic discussion, and guidance.
Formal meeting	A local government meeting (Council/committee) conducted under the *Local Government Regulation 2012*, including public availability of agendas and open meeting requirements, subject to lawful closed-session resolutions.
Decision	A resolution, vote, or determination of Council (or a committee) that binds Council or directs action requiring Council authority.



Confidential information	Information that is confidential to Council and/or not suitable for public release (e.g., legal advice, negotiations, personnel matters), consistent with applicable legislation and Council policy.

5. STATUS OF WORKSHOPS

Workshops are not formal meetings of Council. A formal decision must not be made at a Workshop, and any matter requiring a Council decision must be taken to a formal meeting for determination.

Where a Workshop results in a clear preferred option or direction that will later require Council resolution, the matter must be progressed through a Council report and decided at a formal meeting by resolution.

6. CONVENING WORKSHOPS

Workshops may be scheduled:

a) as part of an adopted annual/biannual meeting calendar; or
b) as needed by agreement of the Mayor and CEO (or delegate).

The CEO (or delegate) will coordinate Workshop dates, times, location, and logistics with the Workshops usually being held monthly on the last Wednesday of the month

Urgent Workshops may be called where required to brief Councillors on time-critical/emergent matters. Where possible, provide reasonable notice and supporting papers.

7. CHAIR

The Chair of a Workshop will be the Mayor or the CEO (or another officer nominated by the CEO), as determined by Council practice and/or meeting procedures.

The Chair is responsible for:

a) maintaining order and respectful conduct;
b) keeping discussion within the scope of the agenda;
c) ensuring no decisions are made; and
d) managing declarations of conflict of interest.

8. ATTENDANCE AND PARTICIPATION

- Typical attendees: all Councillors, CEO, Executive Leadership Team, and presenting officers.
- External attendees may attend by invitation of the Mayor/CEO and must only be present for the relevant agenda item(s). Their name/organisation should be listed on the agenda.
- Councillors should advise the CEO's office as early as possible if they are unable to attend.
- Attendance may be via a digital platform such as MS Teams or Zoom.

9. WORKSHOP NOTICE, AGENDA AND PAPERS

- An agenda will be prepared for each Workshop. As a minimum, a Workshop should include an agenda, participants, allocated time, and relevant papers/presentations.
- Unless urgent, the agenda and supporting papers should be distributed to Councillors at least 2 business days prior to the Workshop.



10. REQUESTING AGENDA ITEMS

- Councillors may request items be placed on a future Workshop agenda by written request to the CEO at least 10 business days prior, unless urgent.
- The CEO determines final agenda content, having regard to relevance, readiness, and resourcing.
- Late items may be raised with the permission of the Chair but time may prevent a full briefing being provided on the matter by an officer

11. PUBLIC ACCESS AND TRANSPARENCY

- Workshops are not formal Council meetings. Unless Council determines otherwise, workshops are not open to the public (including live-streaming), except where the Mayor/CEO invites attendance for a specific purpose.

To support transparency, Council will:

a) ensure all decisions are made at formal meetings (open to the public unless properly closed under Local Government Regulation 2012); and
b) publish formal meeting agendas/minutes in accordance with legislative requirements for formal meetings.

12. CONDUCT AND CONFIDENTIALITY

12.1. REQUIRED STANDARDS OF CONDUCT

All participants must conduct themselves in a way that supports good governance and respectful, productive discussion. This includes:

a) acting in a manner consistent with the local government principles and good governance obligations under the Local Government Act 2009;
b) treating all participants with respect and courtesy;
c) listening without interruption and allowing each Councillor a reasonable opportunity to ask questions;
d) focusing discussion on the agenda item, strategic issues, and clarification of officer advice;
e) avoiding personal criticism of Councillors, staff, or community members; and
f) maintaining confidentiality especially where information is confidential or commercially sensitive.

12.2. ROLE OF THE CHAIR

The Chair is responsible for ensuring:

a) orderly proceedings and adherence to the agenda and time allocations;
b) balanced participation (including managing repeated contributions);
c) respectful conduct; and
d) that the Workshop remains a non-decision-making forum and does not become a substitute for a formal meeting.

12.3. SPEAKING PROTOCOL

a) Councillors will generally speak through the Chair.
b) Presenting officers will be invited by the Chair to provide briefings, answer questions, and note follow-up actions.
c) Where discussion becomes circular or outside scope, the Chair may close discussion and direct that the matter be taken on notice or progressed to a formal report.

.



12.4. STRATEGIC GUIDANCE VERSUS DECISIONS

a) Workshops are for briefing, exploration of options, and strategic guidance only.
b) A Workshop must not be used to seek or record votes, consensus determinations, or commitments.
c) Any required decision must be taken at a formal Council/Committee meeting.

12.5. REQUEST TO STAFF AND DIRECTIONS

a) Councillors may request additional information, analysis, or a report through the Chair.
b) Councillors must not direct staff to undertake work outside established instructions, delegations, or adopted work programs.
c) Where a request has operational, resource, risk, or policy implications, the CEO may:
   - place the item on a future Workshop agenda;
   - refer it to the Executive Leadership Team for consideration; or
   - recommend it be progressed to a formal meeting.

12.6. CONFIDENTIALITY, INFORMATION HANDLING AND COMMUNICATIONS

a) Where confidential, legally privileged, negotiation-sensitive, or personnel-related matters are discussed, participants must maintain confidentiality and comply with Council's information security, privacy and records obligations.
b) Participants must not disclose Workshop material externally or on social media.
c) Public statements must not be made to imply a Council decision has been made.

12.7. ELECTRONIC DEVICES, RECORDING AND MEETING ETIQUETTE

a) Mobile phones should be on silent.
b) Audio or video recording by Councillors or attendees is not permitted unless authorised by the CEO for governance/recordkeeping purposes.
c) The Chair may direct a recess where conduct is impacting the orderly running of the Workshop.

12.8. MANAGING DISRUPTIVE CONDUCT

If a participant's behaviour is disruptive or inconsistent with this clause, the Chair may:

a) Call the participant to order and request that the behaviour cease;
b) require the participant to withdraw from discussion on an item;
c) direct a short adjournment/recess; and/or
d) in serious or repeated cases, close the Workshop or request the participant leave (with the Chair to follow-up in accordance with relevant conduct processes).

12.9. CONFLICTS OF INTEREST

- Councillors must manage conflicts of interest consistent with the *Local Government Act 2009* conflict provisions and Council's conflicts process.
- Where a Councillor identifies a conflict in a matter being discussed at a Workshop, the Councillor must:
  a) disclose the conflict to the Chair/CEO;
  b) not improperly influence other Councillors in relation to the matter; and
  c) absent themselves from the discussion where appropriate, or comply with any lawful participation pathway that applies to formal decision-making.

- The CEO (or delegate) will ensure a record is kept of disclosed interests at Workshops Records and outcomes



Workshops do not take formal minutes and do not record resolutions as no decisions are made.

For each Workshop, the CEO (or delegate) will maintain a Workshop Record containing at least:

a) date/time/location;
b) attendees/apologies;
c) topics discussed (high-level);
d) declared interests/conflicts (names and matter); and
e) an Action Register (tasks, responsible officer, timing).

Where a matter is to proceed to a formal meeting for decision, the subsequent Council report should note (where relevant) that the matter was the subject of a Councillor Workshop briefing.

12.10. USE OF WORKSHOP OUTCOMES IN DECISION MAKING

Officers may use Workshop feedback to:

a) refine options, risk analysis and recommendations;
b) identify additional information required; and
c) clarify Councillor questions to be addressed in the final report.

A Workshop must not be used to:

a) secure an informal “vote” or commitment;
b) direct staff to act outside delegated authority; or
c) circumvent formal meeting requirements.

13. COMMUNICATION

This Policy will be communicated to Councillors and Etheridge Shire Council employees and Workshop invited attendees.

14. RELATED COUNCIL DOCUMENTATION

- Employee Code of Conduct
- Councillor Code of Conduct
- Standing Orders and Meeting Procedures Policy
- Council Meeting Framework
- Councillor Enquiry Framework Guidelines
- Acceptable Request Guidelines

15. LEGISLATION

- Local Government Act 2009
- Local Government Regulation 2012
- Public Sector Ethics Act 1994
- Human Rights Act 2019
- Information Privacy Act 2009
- Integrity Act 2009

This policy will be reviewed in 2 years or as otherwise required. Review will be by resolution of an Ordinary Meeting of Council.

ETHERIDGE SHIRE COUNCIL



COUNCIL MONTHLY MEETING FRAMEWORK

The following outlines the monthly meeting framework and defines each meeting, frequency and other related information.

The Council Meeting is the ONLY decision-making body, all other workshops and sessions are information sharing opportunities.

Week (of month)	**Meeting**	**Location**	**Description**	**Time**	**Other Information**
1stWednesday	Community Connect	Monthly rotation Georgetown, Forsayth, Einasleigh, Mount Surprise	Individuals, community groups and organisations can meet with Council to propose initiatives, projects or to provide further information regarding community issues. Sessions can be used for community engagement activities.	9.00 am*	Open to the public
	DiscussionSession		Discussion on relevant matters raised (	10.00 am	Closed to public
3rd Wednesday	Council Meeting	Council Chambers, Georgetown	Principal decision-making forum, where Council sets policies, strategic decisions, budgets, and other community and long term organisational related decisions.	9.00 am	Open Meeting Statutory
Last Wednesday	Councillor Workshop	Council Chambers, Georgetown	Workshops for briefings, presentations, provision of strategic guidance without making (or appearing to make) decisions outstand of a formal council meeting.	9.00 am	Closed to public

*timeframe may be extended for community engagement activities

As required	Budget Workshops – budget preparation	Budget preparation workshops will be scheduled as and when required		Closed to public
Annual	Budget meeting	Meeting to adopt the upcoming financial year budget. Budget must be adopted after 31 May and before 1 August (LGRs170(1)(a)&(b)		Open to public Statutory

Conduct of Meetings

Council meetings operate in accordance with s270 (Procedure at meetings) of the *Local Government Regulation 2012* and Councils Standing Orders and Meeting Procedures.
Attendees will maintain their responsibilities to declare and record their conflicts of interest as per the *Local Government Act 2009* and *Local Government Regulation 2012.*

ETHERIDGE SHIRE COUNCIL



BRIEFING AND STRATEGY WORKSHOP

TERMS OF REFERENCE

Superseded by Workshop Policy

1. PURPOSE & OBJECTIVES

The Briefing and Strategy Workshop (BSW) is a forum that supports elected members to obtain information, briefings and an opportunity for officers to bring matters for workshopping purposes to the elected members.

The BSW is a standalone informal meeting and provides a forum for information sharing between elected members and officers on matters impacting the region, community and the organisation, to enhance future decision making.

Ideally, briefing sessions or informal meetings should be used to provide councillors with the opportunity to seek clarification and receive updates immediately prior to a formal council meeting.

Similarly, they may provide an opportunity for the Chief Executive Officer (CEO) and senior council officers to address any questions and provide additional information. These sessions should enable councillors to more effectively discuss and debate complex issues during subsequent formal meetings

2. SCOPE OF WORK & KEY ISSUES

The scope of the BSW will include, but not limited to:

- receiving data, reports, trend reporting on Briefing (expense, revenue, capital projects) matters for discussion/information;
- issues affecting the services to the community;
- strategic issues relating to State and Federal Government and other relevant authorities and stakeholders;
- deputations from third parties;
- policy issues, including the review and development of new policies;
- strategic corporate and operational matters;
- receive updates and workshopping opportunities related to the development of the strategies, related policy and plans.

3. AUTHORITY

The BSW has no line of authority, is not a decision-making body, nor has it any delegated authority.

However, the BSW has full right of access to all levels of management through the Chief Executive Officer.

The members of the BSW must ensure questioning and requests for information must be made by following Council's acceptable request guidelines ("Elected Member Contact with Employee Advice Guidelines"), nor influence the officers recommendations in future reports to council.

a) Officer responsibilities

- Acknowledge the elected members right for information;
- Ensure they are aware of, manage, their own conflicts of interest;
- Maintain integrity and transparency.

4. MEMBERSHIP

The Workshop will be closed to the public and will be chaired by the Chief Executive Officer.

Chair	Chief Executive Officer
Members	All Elected Members (Mayor & Councillors)
Attendees/Contributors	All Directors

Meetings would be attended by relevant Managers and technical officers, as appropriate.



5. TERM OF OFFICE

The BSW will have an ongoing workshop format, aimed to meet its objectives of informing and briefing elected members and encouraging a constructure information sharing and workshopping environment between management/staff and the elected member.

The Terms of Reference can be reviewed at any time; however they will be scheduled for formal review at least every two years to ensure currency and meeting purpose

6. MEETINGS AND ATTENDANCE

Workshops are closed to the public, unless otherwise resolved by Council.

a) Quorum

As a workshop and not a statutory requirement, a quorum is not a prerequisite to hold a meeting. However, it is preferred that elected members will attend the workshops and seek a leave of absence or approved apology if they cannot attend.

It is also preferred that the Chief Executive Officer and Directors are in attendance at the workshops and seek an approved apology if they cannot attend.

b) Frequency of Workshops

The BSW will meet monthly, the week prior Councils Ordinary Meeting.

On occasion, it may be determined by agreement between the Mayor and Chief Executive Officer to hold a workshop outside of this cycle due to time of year such as Briefing preparation.

Elected Members are to be given at least three business days' notice of all workshops.

In consultation with the Mayor, the Chief Executive Officer may determine that a BSW will not be held due, but not limited, to lack of items for the agenda, conflicting appointments/priorities, time or year or other feasible reasons.

7. GOVERNANCE ARRANGEMENTS

Each BSW will have an agenda, minutes and (ongoing) action register.

a) Conduct of Meetings

The BSW operates in accordance with s270 (Procedure at meetings) of the Local Government Regulation 2012 and Councils Standing Orders.

Attendees will maintain their responsibilities to declare and record their conflicts of interest and confidentiality as per the *Local Government Act 2009* and *Local Government Regulation 2012.*

b) Agenda items & distribution

The Chief Executive Officer, in consultation with the elected members and management, will be responsible for developing and distributing the Agenda. Elected Members are invited to request items for the agenda for discussion or for information, these will be included at the discretion of the Chief Executive Officer, noting that other methods of responding may be appropriate.

BSW agendas are to be made available to each Elected Member at least three business days before the scheduled meeting.

Standing items on the agenda include, but not limited to:

1. Declaration of interests
2. Agenda Briefing
3. Deputations
4. Policy development/reviews
5. Topics for discussion

Superseded by Workshop Policy



A template of the agenda is attached, noting that each item will be identified by the nature of the item, which include:

- Briefing
- For information
- Discussion
- Briefing & Discussion
- Workshop

c) Recording of Meeting notes

In accordance with Section 272(6) of the *Local Government Regulation 2012*, Council will take and prepare meeting notes (meeting record) of meeting.

d) Administration/Secretariat

Chief Executive Office will facilitate all governance and meeting requirements for the BSW, including the scheduling of calendar invites.

8. RELATED DOCUMENTS/REFERENCES

- Councillors code of council for Councillors in Queensland
- ESC standing orders and meeting procedures
- ESC council meeting framework
- Councillor enquiry framework/procedure
- Acceptable Request Guidelines

Superseded by Workshop Policy

Item No:	**10.5**
Subject:	**Terresterial Centre Upgade - Variation Request Staff Kitchen**
Classification:	**Open**
Author:	**Louise Knol, Chief Executive Officer**

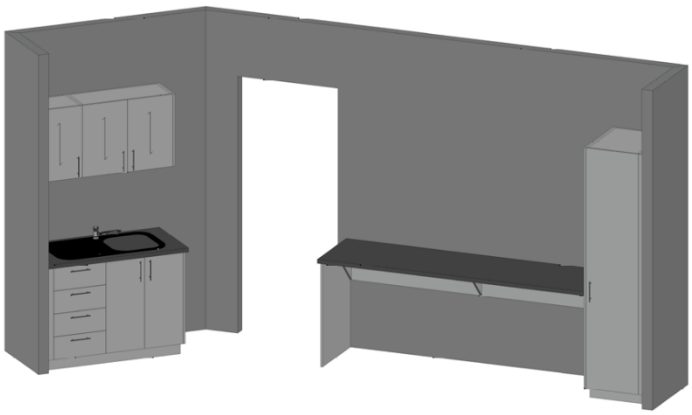
EXECUTIVE SUMMARY
This report seeks Council approval for a contract variation associated with the Georgetown Terrestrial Centre Upgrade project. The variation as provided by Hutchinson Builders provides for the conversion of an existing small meeting room area into a dedicated staff kitchen and amenities space at a cost of $39,421.80 (ex GST). Note that the project currently maintains a contingency balance of approximately $250,000 post the allowance for this variation.

RECOMMENDATION
That Council:
1. Approve the contract variation provided by Hutchinson Builders for Meeting Room Conversion to Staff Kitchen for the Georgetown Terrestrial Centre Upgrade project for the amount of $39,421.80 (excluding GST);
2. Notes that the variation will be funded from the Growing Our Region - Georgetown Terrestrial Centre Upgrade project's available budget; and
3. Authorises the Chief Executive Officer to execute all necessary documentation associated with the approved variation.

BACKGROUND
As the Terrestrial Centre project has progressed, it has become apparent that a dedicated staff kitchen and amenities area is required to adequately support staff operations within the facility. The proposed variation converts an existing meeting room space into a functional staff kitchen, including joinery, plumbing, electrical works and associated fittings.

The proposed layout and joinery design as submitted by Hutchinson Builders are illustrated in the contractor's drawings. The submitted variation totals $39,421.80 (excluding GST). The variation includes:

- Plumbing works, sink installation and Zip HydroTap;
- Joinery and cabinetry;
- Dedicated electrical circuit and power supply;
- Site supervision, labour, travel and accommodation costs



The provision of a dedicated staff kitchen is considered a necessary operational requirement for the facility and will provide appropriate amenities for employees working from the Terrestrial Centre.

In addition to meeting Council's operational needs, the establishment of a separate staff kitchen creates strategic flexibility for the future operation of the facility. The Terrestrial Centre was designed to be a community and visitor destination, and retaining the café area for public-facing activities enhances opportunities for future commercial activation.

Should Council elect to lease the café space in the future, the availability of separate staff amenities would allow the café to operate independently of Council staff facilities. This would support local business creation, provide opportunities for private sector participation, and enhance the overall visitor offering available from the Terrestrial Centre.

The variation therefore delivers both an immediate operational benefit and a longer-term economic development opportunity for the facility and the broader community.

LINK TO CORPORATE PLAN
Corporate Plan Aim No.3: A diversified economic development ensures a prosperous Shire.
Corporate Outcome 3.2 A diversified economic base: rural, tourism, mining and support services.
Corporate Outcome 3.3 Large scale projects provide a legacy for our communities.

BUDGET & RESOURCE CONSIDERATIONS
The cost of this variation will be funded from the existing project budget allocation and does not require any additional project funding. To note that the Terrestrial Centre Upgrade project currently maintains a contingency balance of approximately $250,000.

LEGAL CONSIDERATIONS
This variation will fall within the contractual arrangements between Council and Hutchinson Builders.

POLICY IMPLICATIONS
This variation falls within Council’s Procurement Framework.

CONSULTATION

	Council’s team members located at Terresterial.
Internal:	Griffith University project team members.
	Internal Councillor Workshop Briefings.

RISK ASSESSMENT

Risk Assessment Outcome: Low.

Approval of the variation will:
- Provide suitable staff amenities within the facility;
- Reduce operational constraints associated with staff use of public spaces;
- Preserve future commercial opportunities within the café area;
- Maintain project delivery within the approved project budget through utilisation of contingency funds.

Failure to undertake the variation may limit the functionality of the facility for staff and reduce future flexibility regarding the independent operation or leasing of the café space.

ATTACHMENTS
Nil

Item No: 10.6

Subject: First Quarter Review - Annual Operational Plan 2026/27

Classification: **Open**

Author: Louise Knol, Chief Executive Officer

EXECUTIVE SUMMARY

Consideration of the First Quarter Annual Operational Plan 2026/27 for the period ended 30th September 2026.

RECOMMENDATION

That pursuant to section 174(3) of the *Local Government Regulation 2012*, Council receive the first quarter written assessment of Council's progress towards implementing the Annual Operational Plan 2026/27.

BACKGROUND

Pursuant to section 174(3) of the *Local Government Regulation 2012*, the Chief Executive Officer is required to present a written assessment of Council's progress towards implementing the Annual Operational Plan.

LINK TO CORPORATE PLAN

Corporate Plan Aim No. 5: Best practice corporate governance and organisational excellence. Corporate Outcome No 5.3: Council provides community leadership through financial sustainability and an open and accountable governance structure.

BUDGET & RESOURCE CONSIDERATIONS

Nil

LEGAL CONSIDERATIONS

Local Government Act 2009
Local Government Regulation 2012

POLICY IMPLICATIONS

Nil

CONSULTATION

Inform:	Ongoing engagement through community connect sessions. Consider feedback and community views on Council's performance.

RISK ASSESSMENT

Risk Assessment Outcome: Low

Risks:

1. Inaccurate or outdated data
2. Overlooking stakeholder alignment
3. Resource misallocation

Mitigation:

1. Set regular review intervals to update the plan with current data
2. Establish clear communication to keep the community informed and involved.
3. Conduct a realistic resource assessment as part of approving and implementing the plan.

ATTACHMENTS
1. Operational Plan 2026-2027 First Quarter Review [**10.6.1**]


THE GOLDEN SHIRE
ETHERIDGE
SHIRE
COUNCIL
2026 - 2027
OPERATIONAL PLAN

Welcome from Mayor

Welcome to Council's 2026/27 Operational Plan.

The Operational Plan is an important document within Council's Strategic Planning Framework.
Its purpose is to identify the specific actions and outcome Council wishes to achieve in the immediate 12 months, as part of our journey to achieving our stated Mission and Goals in ouur Corporate Plan.

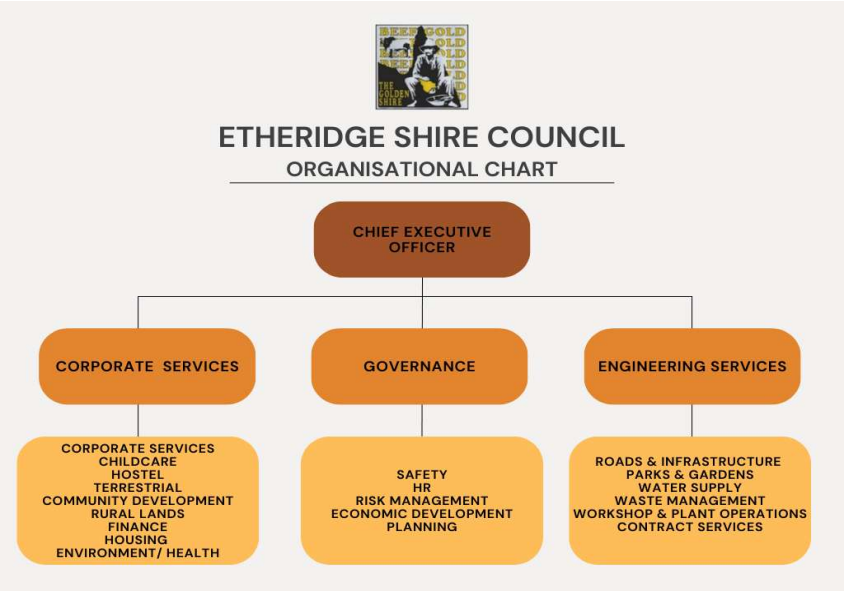
Council has developed its 2025/26 Operational Plan in conjunction with its Annual Budget. It has also been heavily influenced by other key strategic planning documents such as:-

- Council's Long Term Financial Plan;
- Asset Management Plans
- Regional Plans (Queensland State Government NQ Regional Plan), NWQROC biosecurity Plan, others

As the Operatinal Plan "operationalizes" Council's medium to long-term corporate strategy, it guides Council's Management and staff in their day to day functions.
To ensure Council's workforce deliver Council's desired strategy, the Chief Executive Officer is charged with the responsibility of providing a quarterly update on the Operational Plan's implementation. Each quarterly report is displayed on Council's website, as a "Score-card" on our perfermance.

I would therefor encourage Shire ratepayers, residents & other stakeholders to take an interest in our journey toward reaching our longer-term strategic goals.

Cr Barry Hughes
Mayor



Corporate Aim No. 1: A Sustainable Transport Network That Meets

Strategic Outcome 1.1 Shire Rural Roads are all Weather, Town Streets are Bitumen

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/2027 KPI	1st Quarter
1.1.1 An asset management strategy to support the monitoring, maintenance, replacement and enhancement of Council's road assets	DES	Maintain a complete and up to date Road Register	1. Ongoing 2. Dec 2026	1. Road register maintained and up to date 2. Annual review complete	Recommend review after the DRFA 2025 program is completed
	DES	Develop a project list (road infrastucture eg.drainage) for Council prioritisation	Dec-26	Provide written report to Council priority listing of road infrastructure projects.	List was prioritised at the September workshop.
	DES	Review Roads AMP including associated policies & procedures	Mar-27	Workshop Roads AMP (including policies and procedures) with Council	Nil action to date
	DES	Develop maintenance programs on Towns Streets, Rural Roads, bridges, floodways, drainage etc	Dec-26	Develop and present to Council maintenance program for town streets, rural roads, bridges, floodways, drainage etc.	Work has commenced
1.1.2 Develop and implement a comprehensive, sustainable and funded, 10-year Capital Works Program for roads, incorporating road train access and drainage	DES	Develop capital program on Towns Streets, Rural Roads , bridges, floodways, drainage and present options for budget consideration	Jun-27	Deliver CAPEX program	On track
1.1.3 Lobby for adequate funding to enable the repair of the Shire road network affected by natural disaster	DES	Successfully obtain funding and delivery of DRFA works program	Ongoing	Provide monthly progress reports to Council on DRFA delivery	Monthly reports are continuing
1.1.4 Work with regional groups and our communities to upgrade Local Roads of Regional Significance	DES	Advocate at regional meetings and meet with government representatives at RRTG and Technical Committee	Ongoing	Provide update and minutes to Council via DES Breifing Report	A meeting is planned for October

Strategic Outcome 1.2 Transport and Main Roads is Committed to Developing a

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/2027 KPI	1st Quarter
1.2.1 Maintain relationship with the Department of Transport and Main Roads to undertake road construction and maintenance (Road Train Routes)	DES	Implement TMR programs for RMPC, APPC & DRFA	Ongoing	Deliver all approved programs	The 2024 DRFA program is 95% complete and the 2025 DRFA program is well under way.
	DES	Obtain asset data register for TMR Infrastructure	Oct-26	Provide data register of TMR infrastructure in Shire annually	Has been requested
	CEO/DES	Progress identified signage improvements	Dec-26	1. Work with TMR to investigate road status signage 2. Work with TMR to move Mt Surprise eastern entry speed limit sign to eastern side of Elizabeth Creek	Q2
1.2.2 Continue to lobby to raise the national profile of the Georgetown to Forsayth, Kennedy, Gulf and Gregory Development Roads and Bridges and for additional funding for high priority widening and sealing	DES/CEO	Identify and advocate for priority projects on TMR roads across the shire	Ongoing	Prioritise the top 10 projects for advocacy	Advocacy through Myaor/CEO. Top 10 projects to be included in advocacy plan Q2.

Strategic Outcome 1.3 There are Multiple Public Transport Options

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/2027 KPI	1st Quarter
1.3.1 An asset management strategy to support the monitoring, maintenance, replacement and enhancement of Council's airports and airfield assets	DES	Develop and implement maintenance program for airports in addition to identifying any compliance issues	Quarterly	1. CASA Compliance & improvements identified and costed 2. Seek funding to address improvement opportunities 3. Deliver annual maintenance program	Maintenance program is being delivered. CASA compliance internal inpection is due to occur during the second quarter
	DES	Seek budget funding and complete capital program for airports	Ongoing	Deliver approved capital program	Fencing project will occur in the 3rd quarter
1.3.2 Advocate for improved airfield infrastructure and services	CEO/DES	Seek out all reasonable funding sources	Ongoing	Inform Council of funding sources available via DES Breifing Report	Funding Tracker in development
1.3.3 Advocate for improved rail and bus services	CEO/DES	Indentify and advocate for priority infrastructure and services across the shire	Ongoing	Prioritise the top 10 projects for advocacy	Advocacy through Myaor/CEO. Top 10 projects to be included in advocacy plan Q2.

Corporate Aim No. 2: A Sustainable Environment of Natural Assets, Water, Waste Water and Waste Management

Strategic Outcome 2.1 Best Practice Water and Waste Water Management

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/2027 KPI	1st Quarter
2.1.1 An asset management strategy to support the monitoring, maintenance, replacement and enhancement of Council's water and waste water assets	DES	Implement and maintain a water delivery service	Ongoing	Compliance with Australian Drinking Water Guidelines	Full compliance for the quarter
	DES	Develop and implement program for the water treatment plants	Ongoing	Deliver annual maintenance program for water treatment plants	Maintenance has been on-going
	DES	Deliver maintenance program for the water networks	Ongoing	Deliver annual maintenance program for the water networks	Maintenance has been on-going
2.1.2 Develop and implement a comprehensive, sustainable and funded, 10-year Capital Works Program to deliver good quality, reliable water and waste water supplies for all communities	DES	Develop 10 year capital program for the water networks	Mar-27	Develop and present to Council 10 year program for the water networks	Not started
	DES	Georgetown & Forsayth water treatment plants are compliant.	Jan-27	Investigate water service delivery and plant options for Forsayth & Georgetown including funding options	Need budget allocation
	DES	Deliver water security to meet the needs of the Einasleigh township	Mar-27	Secure water releases from Copperfield Dam for the township of Einasleigh	Allocations are available but have not been applied for at this stage
2.1.3 Water Reservoirs are operating and environmentally compliant	DES	Construct new concrete sill on Charleston Dam spillway to prevent erosion and wall damage	Dec-26	Charleston Dam Concrete Sill completed to specificiations	The sill construction is on track to be completed during the second quarter
2.1.4 Lobby for adequate funding to enable the repair and maintenance of Shire water and waste water network affected by natural disaster or other events	CEO	Advocate for improvement of service provision of water supply across all communities and facilities	Ongoing	Provide written report to Council outcomes of meetings including Gulf Regional Water Plan	Seeking to incorporate as a project of the Etheridge Ag Precinct Funding - awaiting DPI approval of project scope

Strategic Outcome 2.2 Best Practice Waste Management

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
2.2.1 An asset management strategy to support the monitoring, maintenance, replacement and enhancement of Council's collection and waste management facilities throughout Shire	DES	Implement waste collection and disposal programs throughout the shire including enabling and encouraging recycling, reuse and reduction of waste.	Ongoing	1. Weekly collection service for Georgetown 2. Efficient operation of Forsayth Transfer Station 2. Access to operational landfills in Mt Surprise & Einasleigh 3. Annual collection of white goods and green waste	All services operated effectively during first quarter
	DES	Develop a Shire Waste Strategy	Jun-27	Present draft Shire Waste Mnagement Strategy & Plan	Not Started
	DES	Actively participate in Regional Waste Management Strategies	Ongoing	Inform Council of improvement opportunities as they arise through DES Breifing Report	On-going participation, no opportunities at this stage
2.2.2 Waste transfer stations are operating and environmentally compliant	DES	Design waste transfer station for Einasleigh & Mt Surprise	Jun-27	Design of Einasleigh & Mt Surprise Transfer Stations complete and ready for development when funding becomes available.	Funding is needed to complete this task.

Strategic Outcome 2.3 Best Practice Natural Environment and Pest Management

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
	DCS	Develop shire biosecurity plan including annual works program prioritisation	1. Sep 2026 2. Dec 2026	1. Annual Works Program endorsed by Biosecurity Advisory Committee 2. Shire Biosecurity Plan adopted by Council	1. Draft plan emailed to Biosecurity Committee Chair 2. Awaiting Biosecurity Meeting

2.3.1 Develop Council's Biosecurity Plan in consultation with landowners and other stakeholders to reduce the impact of existing and emerging pests	DCS	Investigate improved pest management practices	1. Dec 2026 2. Mar 2027 3. Dec 2026	1. Implement technology fuction to promote biosecurity engagement & outcomes (eg. Fulcrum) 2. Cost and trial wild dog trapping 3. Implement cost recovery trapping iniatives for control of pigs in townships	1. Currently progressing intermediate option, while trialling suitable apps. 2. Not started yet 3. In preliminary discussions with ELT and possible contractor
2.3.2 In partnership with the community and external agencies, promote and support best practice management of the natural environment	CEO	Advocate with local NRM and other groups to support best practice and improved long term outcomes	Quarterly	Gulf Savannah NRM CEO to quarterly Council meetings Gulf Savannah NRM Project Officers to Council meetings/workshops	Q2

Strategic Outcome 2.4 An Energy Efficient Shire

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
2.4.1 Support of renewable energy & carbon reduction programs and Council's carbon footprint	CEO	Investigate energy efficiency projects at Council facilities to reduce operational energy consumption.	Mar-27	1. Review and present Council facility report 2. Indentify priorities and seek funding to implement renewable energy or energy efficiency projects.	Q3

Strategic Outcome 2.5 Industry has Sustainable Environmental Practices

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
2.5.1 Companies and industries are environmentally compliant	CEO	Monitor and ensure adherance to compliance standards	Ongoing	Report non compliance to appropriate authorities immediately	Nil non-compliance notifications

Corporate Aim No. 3: A Diversified Economic Development Ensures a

Strategic Outcome 3.1 A Variety of Land and Housing Options for the Community

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
3.1.1 Maintain a compliant planning scheme that supports the future development of our Shire	DCS	Implement the planning scheme	Ongoing	1. Planning applications processed 2. Investigate compliance opportunities	1. Applications are being processed as received 2. Undertaking an audit on improved vacant land
	DCS	Review and update planning scheme	Jun-27	Plan review and presented to Council	Review of planning scheme is currently progressing against planned schedule
3.1.2 Review and update the asset management strategy to support the monitoring, maintenance, replacement and enhancement of Council's housing stock	CEO/DES	Implement capital plans and maintenance programs for Council Housing	1. March 2027 2. Dec 2026 3. March 2027	1. Workshop buildings AMP with Council 2. Develop Council Housing Policy 3. Develop strategic staff housing plan (old stock & vendor finance)	Q2-3
3.1.3 Plan and develop a range of land and housing options for youth, families and older members of the communities	CEO	Enable residential, rural residential and industrial subdivisions throughout Shire as land become available and demand increases	Ongoing	Proactively source opportunities for development & report quarterly	Q2-3
3.1.4 Advocating for the release of State Land for future development across the Shire	CEO	Shire wide land use study	Mar-27	Investigate process and estimated costs for land use study, and further identify priorities.	Q3

Strategic Outcome 3.2 A Diversified Economic Base: Rural, Tourism, Mining and Support

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
3.2.1 Facilitate the development and marketing of a distinctive regional image	CEO	Develop Economic Development Strategy & Action Plan	Mar-27	Partner with GSD to develop and deliver Economic Development Strategy	Q3
3.2.2 Support community development to expand and meet the growing needs of the region through infrastructure, income diversification and advocacy	CEO	Develop a shire profile and advocacy plan	Oct-26	Adopt annual Advocacy Plan	Q2
	CEO/DES	Deliver Growing Regions project in partnership with Griffith University	1. Sep 2026 2. May 2027	1. Deliver Einasleigh concept design and project plan to confirm project site and community expectations 2. Project deliverables & milestones completed pursuant to funding agreement	A community meeting with Griffith and DNA present confirmed community expectations and a program has been put into place. Program delivery on track.
	CEO/DES	Deliver Works 4 Queensland project for Mt Surprise	1. Sep 2026 2. Dec 2026 3. June 2027	1. Finalised concept plan for the W4Q project at Mt Surprise 2. Earthworks completed prior to the wet season for the W4Q project 3. Project milestones completed on time and in budget	Northlane are now project managing these projects, detailed survey has been arranged
3.2.3 Support skills development (youth, business, industry)	DCS	Develop and implement policies to support community skills	Dec-26	1. Adoption of Work Experience/Volunteer Policy 2. Adoption/review of Career Development Policy 3. Enable Community Skills workshops in the Shire	1. Policy currently being reviewed 2. Policy currently being reviewed 3. Workshops supported on an ongoing basis
3.2.4 Career pathway and employment opportunities for youth	DCS	Create entry pathways and employment opportunities for youth	Ongoing	1. Council employs a minimum of 2 trainees per annum across a range of fields 2. Council offers tertiary studies (diploma, apprenticeships etc) when available 3. Send letter to boarding schools offering work experience	1. Three traineeships engaged currently, and a further 3 planned for 2027 2. One apprentice employed 3. Letter has been sent to career advisers for boardings chools in Townsville, Charters Towers, Cairns and Tablelands

3.2.5 Improve business and policy outcomes to support local businesses	DCS	Review procurement policy and monitor the outcomes	Dec-26	Review Procurement Policy as per statutory legislation in alignment with the budget	Completed June 2026
	DCS	Promote and encourage local business participation in Council's procurement opportunities.	Ongoing	Report annually on local business utilisation through Council procurement activities.	Currently awaiting q1 data. FY26 data is 34 companies across 24 arrangements
3.2.6 Advocate for the development of the Etheridge Agriculture Precinct and associated agricultural industries	CEO	Facilitate development within the agriculture industry	Sep-26	Utilise provided funding to enable agricultural economic growth	Ag forum deliveref 18 Aug. Advocating for extension of EAP.

Strategic Outcome 3.3 Large scale projects provide a legacy for our communities

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
3.3.1 Companies of large-scale projects operate with a suitable social licence to our community	CEO	Work with indentified large scale projects	Ongoing	1. Encourage good corporate/community relationship 2. Establish communication links to enable monthly reports for public publication	Liaison ith Genex re CBA & Kidston operations.
3.3.2 Large-scale projects provide long-term benefits to our community	CEO	Advocate for Council's interests in relation to all large scale projects	Ongoing	Negotiate successful social and infrastructure outcomes for landowners, community and Council through adherence to social impact assessment/community benefit agreement policy	Kidston BESS CBA endorsed by Council.

Corporate Aim No. 4: Quality Social Infrastructure Makes the Shire a

Strategic Outcome 4.1 An Active Community with a Variety of Recreational Activities

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
4.1.1 Review and update the comprehensive asset management strategy to support the monitoring, maintenance, replacement and enhancement of Council's parks, garden and recreational facilities	DES	Develop a comprehensive, sustainable and funded, 10-year Capital Works Program for parks, garden and recreational facilities	Defer to 2027/2028	Develop and present to Council 10 year capital programs	
	DES	Implement operational town facility services and contracts	Ongoing	Facilities are maintained and operational Aesthetics of each town are to an acceptable level	New contracts have been awarded
	DES/DCS	Maintain the Shire's cemeteries	1. Ongoing 2. December 3. Mar 2027	1. Regular inspection and consultation with the communities re: services 2. Implementation of Chronicle for Georgetown, Forsayth & Einasleigh Cemeteries 3. Compile list of shire cemeteries	1. Regular inspections continue to occur. 2. Currently progressing chronicle rollout 3. Not started yet
	DES	Maintain Swimming Pool as a safe and attractive venue	Ongoing	1. Regular inspections to identify and attend to priority maintenance at a risk based level 2. Identify funding opportunities for replacement	Inspections are occuring, these were increased when the flying foxes were in town
4.1.2 Establishment suitable recreational activities/facilities at water reservoirs	DES	Construct recreation facilities at Charleston Dam to encourage community driven activity based tourism	Sep 2026 Jun 2027	1. Staged Concept Plan finalised and endorsed by Council to include nature based aesthetics 2. Stage 1 project completion within budget	Concept paln fonalised and a grant has been applied for.
4.1.3 Enhance and improve the aesthetics of each town	DES	Enable aesthetic improvements in each town	Mar-27	Enable and investigate beautification options via Community Connect through Council workshops	Points raised at community connect meetings are noted and will be actioned where possible
4.1.4 Advocate for funding for additional sport and recreation infrastructure	DCS	Develop Council's sport and recreation strategy	Sep-26	Engage with Griffith University to establish draft Sport & Recreation Plan for adoption by Council	Final draft (following community consultation) being brought to October workshop, with planned presentation to Council at November General Meeting.
	CEO/DCS	Identify sport and recreation funding for suitable facilities	Ongoing	Actively advocate and promote sporting and recreational funding opportunities for improvements and maintenance to existing facilities	Application to Community Recreation Initiative - Einasleigh flood impacted recreation infrastrtcuture Copperfield Gorge

Strategic Outcome 4.2 An Invigorated Community with a Variety of Multi-Aged Services

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
4.2.1 Review and update the comprehensive asset management strategy to support the monitoring, maintenance, replacement and enhancement of Council's Health, Aged Care, Child Care facilities	DES	Develop Plan in accordance with all buildings and AMP	Jun-27	Present approved capital program to Council	Not started
4.2.2 Ensure that services to the community for child care, youth hostel and aged care are	DCS	Implement day-to-day operational and service improvements at the Georgetown Student Hostel to ensure safe, effective and appropriate accommodation for students.	1. Ongoing 2. Ongoing 3. Dec 2026	1. Georgetown Student Hostel operated in accordance with approved policies, budget and relevant regulatory requirements throughout the financial year 2. Encourage consistent occupancy of the hostel 3. Establish a OSHC facility	1. Ongoing 2. Currently 10 fulltime enrolments 3. Working toward a cost benefit analysis
	DCS	Operate Little Gem's Childcare Centre in accordance with approved service standards, licensing requirements and budget to ensure the ongoing provision of quality child care services.	Ongoing	1. Little Gem's Childcare Centre maintained full compliance with regulatory and licensing requirements throughout the financial year 2. Encourage consistent occupancy of the childcare centre	1. Ongoing 2. Currently at capacity when considering age ratios

4.2.2 Ensure that services to the community for child care, youth hostel and aged care are provided	DCS	Strengthen coordinated youth engagement across the Shire by supporting structured programs and partnerships that encourage participation and positive social outcomes for young people.	Ongoing	1. At least one youth program delivered in partnership with a school, community group or regional organisation during the financial year and youth participation numbers recorded and reported annually	Ongoing - all schools received a Get Ready Qld program in Q1.
	DCS	Enhance and coordinate programs that support senior wellbeing, community connection, and active ageing	1. Dec 2026 2. Ongoing	1. Support Seniors Day and Seniors month (October) 2. Provide a minimum of four senior engagement activities annually with participation from all towns	1. Multiple activities planned for Seniors Day & Month 2. Currently hosting a Seniors Lounge once per month at the library
4.2.3 Construct care facilities to retain citizens in the community	DCS/DES/ CEO	Facilitate occupancy of the Independent Living Facility	Ongoing	1. 50% occupancy rate of Independent Living Facility	Hand rails are beibg installed in the bathrooms/toilets of the six buildings. Policy update endorsed to expand eligibility criteria. Currently 33% occupancy
4.2.4 Advocate and facilitate the provision and improvement of central and remote health services	CEO/DCS	Sustain current services and seek improvement to health services in all communities	1. Ongoing 2. Dec 2026	1. Advocate for improved service delivery and extablish regular meetings with providers 2. CHHHS MOU completion	1. Liaison commenced with health providers for collaborative place client-centred based model. 2. MOU submitted to CHHHS
4.2.5 Advocate and facilitate for improvements in educational services to be provided within the Shire	CEO/DCS	Attend schools and meet with representatives of the school and P&Cs	Mar-27	Attendance at meetings and successful collaboration reported to Council via monthly DCS Briefing Reports	Ongoing
4.2.6 Advocate for sufficient policing and emergency service facilities	CEO	Advocate for improved police and emergency services for Shire	Ongoing	Participate in recruitment of police officer vacancies and advocate for retention strategies when invited	Correspondence to Minister and meeting with QPS - Mayor & CEO.

Strategic Outcome: 4.3 A Culturally Aware Community

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
4.3.1 Review and update the comprehensive asset management strategy to support the monitoring, maintenance, replacement and enhancement of Council's social infrastructure	DES	Develop 10-year Capital Works Program for Social Infrastructure	Defer to 2027/2028	Develop and present to Council 10 year capital program.	
4.3.2 Provide libraries, as learning and information centres	DCS	Review and implement strategies to improve access to library services across all towns, including outreach programs, mobile services, and digital resource availability	Dec-26	1. Implement at least one new library access initiative (e.g. mobile library service, digital lending platform, or outreach program) by Q4 2025/2026, with participation from all four towns 2. Complete establishment of learning hubs in Mt Surprise and Forsayth	1. Ongoing 2. Scheduled for early Q2
4.3.3 Engage with and support local arts and cultural groups	DCS	Review and implement strategies for engaging with arts and cultural groups	Ongoing	1. Ensure 100% expenditure of Arts Qld/RADF funding through Council Initiatives and Community Funding rounds 2. Ensure compliance with 5 year action plan of the Arts & Culture Strategy	1. Currently progressing to expend grant funding 2. Ongoing
4.3.4 Build and strengthen the Shire's identity through the support and provision of a variety of events and branding our corporate image	DCS	Support staff, volunteers, community groups at events	Ongoing	1. Community Assistance Policies are reviewed and implemented 2. Community calendar of events is developed and communicated 3. Facilitate attendance at appropriate events	1. Policies to be reviewed in Q2 2. Calendar developed 3. Ongoing
4.3.5 Encourage local historians to preserve and promote local history and heritage	DCS	Support and collaborate with local historians and community groups to document, preserve, and showcase the region's history and cultural heritage through events, publications, or exhibitions	Mar-27	1. Draft a heritage concept plan 2. Promote local history and cultural awareness including cemeteries	1. Not yet started 2. Currently collecting stories for digitalisation

Strategic Outcome: 4.4 A Variety of Modern Communication Mechanisms Available for

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
4.4.1 Improve co-operation and communication with relevant stakeholders and all levels of government in the strategic planning of future community infrastructure	CEO/DES/ DCS	Advocate for the provision of telecommunication services, telemetry and media	Dec-26	Provide biannual progress updates to Council on engagement with service providers and outcomes achieved	Liaison with Telstra re Einasleigh and Gilbert River telecoms
4.4.2 Review and update the comprehensive asset management strategy to support the maintenance, replacement and enhancement of Council's communication assets	DCS	Maintain radio re-transmission services for Mt Surprise, Forsayth and Einasleigh	Ongoing	Services are operational	Ongoing
	DCS	Review shire UHF repeater system	Jun-27	Present findings and options to Council.	Audit complete, and report yet to be received

Corporate Aim No. 5: Best Practice Corporate Governance and

Strategic Outcome: 5.1 Effective Communication Between Council and the Community

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
5.1.1 Using appropriate media, promote civil and respectful discussion and participation in relevant issues	CEO	Ensuring effective communication to the community	Ongoing	All of Council's available mediums are used.	Inform. Social media. E-notice boards used.
5.1.2 Disseminate accurate and relevant information within the organization, the community and other relevant audiences	CEO	Review of Council communication mechanisms	Ongoing	Consistent use of additional communication methods (electronic noticeboards & SMS).	Not commenced
5.1.3 Review the current practice of holding consultation meetings throughout the Shire and distribution of newsletter 'Inform' to maximise effective community engagement	CEO	Review and conduct regular Community Connect sessions	Ongoing	1. Community Connect program adopted and delivered 2. Community issues workshopped and enacted 3. Review distribution of Inform	Community Connect matters raised register in development and standinf agenda item at Councillor Workshops
5.1.4 Council will embrace exceptional customer service, valuing staff and promoting ethical standards of practice, supported by clear policies and strategies	CEO/DES/ DCS	Encourage efficient Council customer service while valuing staff well being	Monthly	1. Hold monthly staff meetings (week following GM and includes two way feedback medium)	Currently occuring as planned

Strategic Outcome: 5.2 Council Operations Support Quality Service Provision and Good

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/27 KPI	1st Quarter
5.2.1 Ensure the transparency of Council's administration and promote awareness within the community of Council's financial management and other strategies	DCS	Implement strategies for an efficient operation of Council administration and finances sections	Ongoing	1. Maintain currency of actions towards identified audit issues 2. Advocate & support improved auditing outcomes for the sector	1. Progressing well against outstanding actions
	DCS	Develop a communications plan to raise awareness of Council's financial management and decision-making processes	Monthly	1. Publish monthly financial and strategic updates accessible to the public on all mediums 2. Deliver one community financial and strategic information session in all towns	1. Has been implemented 2. Will be completed as part of the annual budget process in Q4
	DCS	Funded depreciations for council assets including roads, airports, buildings, water and waste for asset replacement	Quarterly	AMP updated and confirmed depreciation in quarterly budget reviews	Complete
	DCS	Review and maintain a fair and equitable rating system that aligns with legislative requirements and reflects community expectations	Jul-26	Complete a rating review and adopt any necessary changes as part of the 2026/2027 budget process	Complete and rates levied in September 2026
5.2.2 Pursue opportunities for external income sources to enhance financial capacity beyond traditional methods	CEO	Ensure Council operations consider external income opportunities	Monthly	Monthly report regarding potential grants available	Grants Tracker in development.
5.2.3 Ensure the efficiency of procurement and stores activity	DCS	Review and streamline procurement and stores processes to improve efficiency, compliance, and value for money	Ongoing	1. Maintain 100% compliance with procurement policy 3. Initiate EOI processes to include design and/or construct where appropriate	1. Ongoing 2. Ongoing where applicable
5.2.4 Ensure the efficiency of depot and engineering administration	DES	Develop and implement efficient and effective strategies including annual works program for all Council activities (Shire Maintenance, DRFA, EMW)	Dec-26	Develop and provide a written report to Council an effective works program which considers local knowledge and communication with impacted landholders	Planning has commenced
	DES	Develop works program and better utilize alignments between funding and betterment opportunities	Ongoing	Implement works program based on identified priorities	On-going
	CEO/DES	Implementation of DRFA alternate management structure	Aug-26	Engagement of DRFA position within DES Department	This position has been changed to a Infrastrucure Technical Officer with DRFA components as required
5.2.5 Maintain a profitable fleet business and manage contractor hire arrangements	DES	Moniter and review efficient operation of Council's Plant Fleet as necessary	Monthly	Monthly monitor the use of council plants, expenditure and profits. Provide report to Council on outliers prior to future budget workshop.	On-going
	DES	Develop new Wet & Dry Hire contracts	Sep-26	Award Wet and Dry contract	Discussed at the September Workshop, some additional changes are yet yto be finalised.

	CEO	Maintain fatigue management compliance	Sep-26	Investigate AFM or alternative fatigue management systems	Contact initiated with NHVR.
	DES	Review and update current 10 year plant replacement plan	1. Dec 2026 2. Annually	1. Procure replacements as resolved. 2. 10 year Plant Replacement schedule implemented	Procurement is ahead of schedule

Strategic Outcome: 5.3 Council Provides Community Leadership Through Financial

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/2027 KPI	1st Quarter
5.3.1 Expect an environment of honesty and integrity in which elected members, managers and staff work together in a spirit of trust and teamwork	CEO	Lead and promote an organisational culture based on honesty, integrity, trust & teamwork	1. Jan 2026 2. Oct/Nov & Apr/May 3. Ongoing 4. Ongoing	1. Complete team building exercise for Senior Staff & Council 2. Implement 6 monthly whole organisational breakfast 3. Continue staff recognition, milestones & annual performance reviews 4. Implement multi directional feedback and evaluation process	Strategic training arranged for Feb 2027. Other areas ongoing/in development.
5.3.2 Actively participate in the membership of regional development and other organisations in order to achieve mutual regional priorities	CEO	Actively participate in meetings of benefit to Etheridge Shire Council.	Monthly	Attendance at meetings and successful collaboration communicated to Council via Mayor and/or attendees Briefing Report.	Attendance at ROC, GSD and community meetings
5.3.3 Councillors take a leadership role in the community, serve as a role model and provide strategic direction for the continued growth and development of the region	CEO	Review and implement Council's strategic plans	Ongoing	Promote, disseminate and actively utilise Council's current strategic plans	Plans utilised in grant applications
	CEO	Elected members attend local and regional meetings with community, government and industry representatives	Ongoing	Communicate meetings and opportunities to Councillors	As required

Strategic Outcome: 5.4 Desirable Staffing Balance that Reflects Council and Community

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/2027 KPI	1st Quarter
5.4.1 Develop, review and implement a staffing strategy to the efficiency of Council operations	CEO	Review and implement productivity strategies to increase the capacity of Council operations	Mar-27	1. Organisation review to identify inefficencies and potential solutions 2. Develop a casual pool of community members to fill short term/notice vacancies.	Q3
5.4.2 Council processes, service levels and use of technology provide an efficient use of resources	CEO	Investigate the use of technology to improve and promote Council activities	Mar-27	Improve communications, connectivity & visibility across all communities (screens, teams, cameras)	Ongoing watching brief and discussions with focus in Q3
5.4.3 Provide accountable, professional, responsible, timely and accessible services to external and internal customers that reflect the values of the organization	CEO	Review and implement strategies to enhance service standards and delivery, including process improvements and customer service standards	1. Sep 2026 2. Sep 2026 3. June 2027	1. Standardise responses to common enquiries (Ready Reckener) and implement response standards (emails & phone calls) 2. Review current incoming communication practices across the organisation to identify inefficiencies, in particular automated incoming phone call system. 3. Development and implementation of Customer Service Framework	Not commenced due to operational capacity.
	DCS	Maintain compliance with legislation, local laws, policies	Mar-27	Cost Benefit Analysis of a Local Laws / Compliance Officer & Local Law Amendment	Local Laws review submitted for BR1 consideration

Strategic Outcome: 5.5 Council is Effective in Attracting and Retaining Qualified,

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/2027 Action	1st Quarter
5.5.1 Ensure Councillors and staff are provided with relevant learning and personal development opportunities to achieve stated strategic priorities and corporate objectives	CEO	Enforce a drug free environment	1. Sep 2026 2. Ongoing 3. Ongoing	1. Amend Drug & Alcohol Policy to include: a. relevant medicinal cannabis usage b. compulsary RTW testing requirements after a missed scheduled testing 2. Utilise testing data to strengthen drug testing outcomes 3. Ensure test history informs future procurement & awatding contracts	WHSA reviewing D&A Policy. Ongoing random testing.
	CEO/DCS /DES	Review and implement strategies for efficient training and development programs	Dec-26	1. Develop training need analysis 2. Consider a budget allocation for implementation	Q2
5.5.2 Implement effective HRM strategy throughout the organisation	CEO	Manage Council's human resource management (HRM) practices	1. Sep 2026	1. Engage with relevant stakeholders in EBA negotiation process and produce a staged project plan and timeline	Not commenced.
5.5.3 Develop and implement organisation well-being programs	CEO	Well-being program is part of Council's Human Resources Strategy	1. Sep 2026 2. Nov 2026 & May 2027 3. Ongoing	1. Staff satisfaction and culture survey 2. Implement 6 monthly Council breakfast 3. Celebrate employee (staff & contractors) contributions, anniversaries and stories monthly.	1. Survey undertaken in Q1 2. Planning in progress 3. Currently ongoing

5.5.4 Develop and implement proactive WHS and enterprise risk strategies to reduce threats to the Council and the community	CEO	Maintain a compliant WHS Management Framework that ensures a safe and healthy work environment	1. Dec 2026 2. Ongoing	1. Successfully recruit a permanent fulltime WHSO 2. Maintain a proactive WHS management system and report on audit findings to Council	Internal candidate for WHSO appointed. Monthly reporting via Council meeting.
	CEO	Proactively manage the enterprise risk and strategies	Dec-26	1. Finalise risk register update	Q2

Strategic Outcome: 5.6 Council is Effective in Planning, Preparing and Responding to

Strategies	Officer	FY2026/2027 Action	Comp Date	FY2026/2027 KPI	1st Quarter
5.6.1 Ensure a preparedness to respond to natural disasters and other emergencies and engage in planning activities aimed at minimising the impact of such disasters on the community	DCS	Deliver recovery & resilience outcomes for all communities under CHWB program	Mar-27	1. Successful implementation of CRRO & CRRSO positions including grant acquittal	Both positions progressing well against funding guidelines.
	CEO	Advocate for improved weather information infrastructure in the region (stream gauge stations, rainfall gauge stations and radar)	Ongoing	1. Investigate cost of implementation of Council owned infrastructure or alternatively, subscriptions to existing infrastructure (ONTOTO).	Not commenced
5.6.2 Maintain a compliant, resourced Disaster Management Plan	CEO	Review and update Disaster Management Plan	Annually	Review and adopt Etheridge Shire Disaster Management Plan	Council adopted reviewed LDMP Sept.

11 DIRECTOR CORPORATE SERVICES - OPEN SESSION REPORTS

Item No: **11.1**

Subject: **Director Corporate Services – Briefing Report September 2026**

Classification: **Open**

Author: **Renee Bester, Director of Corporate Services**

RECOMMENDATION
That Council note the Director Corporate Services' Briefing Report for the reporting period.

FINANCIAL

2026/2027 Financials
Council is currently progressing against target. The first quarter Budget Review is included within the October agenda. Additionally, the final FY2026 Financial Statements are being presented to the Audit Committee on 12th October, then to Council on 14th October as an Addendum item to the General Meeting.

AUDIT UPDATE

Internal Audit
Currently providing required information to Internal Auditors for complete FY2026 scope.

External Audit
The final audit visit for the year was completed in the week beginning 31st August. The final report will be presented to the Audit Committee on 12th October and Council on 14th October.

COMMITTEE UPDATES

Audit Committee
The next Audit Committee meeting is scheduled for Monday, 12th October.

Biosecurity Advisory Committee
Local Law Amendment – Currently communicating with the Department of Local Government to clarify required process. Additionally seeking quotes to review all Councils Local Laws.

ESC Biosecurity Plan – Awaiting next Biosecurity Advisory Committee meeting.

RADF Advisory Committee
There is no future meeting scheduled at this time. Currently applications for RADF activities are open. Applications are also open for Youth Committee members.

CAPITAL PROJECTS (AS PER WIP)

Independent Living Facility
Currently one Affordable Housing Unit is occupied, and one Independent Living application has been approved. Two further applications have been received and are being reviewed.

Community Learning Hubs – Mt Surprise & Forsayth
Access to both will be via a key/lockbox arrangement and further surveillance, which both communities have endorsed. Lock boxes have been procured and will be installed in October.

Cemeteries
Council is still awaiting the Chronicle rollout across Georgetown, Forsayth and Einasleigh Cemeteries.

Mt Surprise & Einasleigh Connectivity Project
Procurement is in progress for items to enable connectivity within the communities.

OPERATIONAL MATTERS

Sport & Recreational Strategic Plan
The draft strategic plan was workshopped with Griffith University during their visit to the region in late August. A final document will be forwarded once received, to proceed to a final document. We are working towards having this at the October workshop, to then be presented to the November General Meeting.

Outside School Hours Care
A workshop was held in late August, and Council will progress to a cost benefit analysis of options available. This is currently in progress.

Child Safe Organisation Act
The Child Safe Organisation Act came into effect in October 2025. Council sought assistance from NWQROC to assist with compliance with the legislation. Council have now received our full suite of policies and have undertaken a 1-day training session on our reporting obligations. This will further develop into further staff training requirements and inductions.

Honouring Our Veterans Grant
Council was successful in securing Honouring Our Veterans Grant, and contract has been executed. This is due to be finalised by April 2027.

TRAINING & PROFESSIONAL DEVELOPMENT
Nil

ATTACHMENTS

Nil

Item No:	**11.1**
Subject:	**Financial Performance as at 30 September 2026**
Classification:	**Open**
Author:	**Megan Alexanderson, Finance Manager**

EXECUTIVE SUMMARY
In accordance with section 204 of the *Local Government Regulation 2012*, a monthly finance report is required to be presented to Council stating the progress made in relation to the budget for the period of the financial year as near as practicable to the end of the month before the meeting held.

RECOMMENDATION
That Council receive the financial statements for the period ended 30 September 2026 pursuant to, and in accordance with section 204 of the *Local Government Regulation 2012.*

BACKGROUND
The monthly financial report of Council provides a snapshot of Council's Financial Performance (Profit and Loss), Financial Position (Balance Sheet) and Cash Flow for the reporting period.

LINK TO CORPORATE PLAN
The monthly financial report of Council provides a snapshot of Council's Financial Performance (Profit and Loss), Financial Position (Balance Sheet) and Cash Flow for the reporting period.

BUDGET & RESOURCE CONSIDERATIONS
There are no budget or resource considerations contained within this report. The annual budget is provided with the Financial Report for information purposes.

LEGAL CONSIDERATIONS
Local Government Regulation 2012

POLICY IMPLICATIONS
Nil

CONSULTATION
There are no budget or resource considerations contained within this report. The annual budget is provided with the Financial Report for information purposes.

RISK ASSESSMENT
Risk Assessment Outcome: Low

Summary of risks and opportunities:
Risks:
1 Over budgets
2 Cash flow deficiencies

ATTACHMENTS
- PCS Statement of Comprehensive Income
- PCS Statement of Financial Position
- PCS Statement of Cash Flows
- Cash Position

- Comparative Data
- Monthly Cash Flow Estimate
- WIP
- PCS Revenue and Expenditure Summary Budget

Etheridge Shire Council

Statement of Comprehensive Income

For the Year Ended Jun 30 2027

	Notes	2027 Actual	Orig. 26/27
Revenue			
Recurrent revenue			
Rates, levies and charges	3	2,878,438	3,351,417
Fees and charges	3	81,387	388,819
Interest income	3	200,243	842,983
	7		
Other income	3	100,150	62,164
Rental income	3	63,132	289,900
	8		
Sales revenue	3	4,592,887	9,192,799
Grants, subsidies, contributions and donations	3	2,559,906	30,986,454
	4		
Total recurrent revenue		**10,476,142**	**45,114,536**
Recurrent expenses			
Employee benefits	3	(2,384,830)	(8,459,686)
Materials and services	3	(6,802,684)	(30,228,516)
Finance Interest Costs	3	(30,781)	(186,252)
Depreciation and amortisation: PP&E	7	0	(6,085,707)
Total recurrent expenses		**(9,218,295)**	**(44,960,161)**
Net Operating Result		**1,257,847**	**154,375**
Capital revenue			
Grants, subsidies, contributions and donations	4	1,350,587	11,274,343
Total capital revenue		**1,350,587**	**11,274,343**
Net capital result		**1,350,587**	**11,274,343**
Other comprehensive Income			
Total other comprehensive income for the year		**0**	**0**
Total comprehensive income for the year		**2,608,434**	**11,428,718**

The above Statement should be read in conjunction with the accompanying notes and the Summary of Significant Accounting Policies.

Etheridge Shire Council

Statement of Financial Position

For the Year Ended Jun 30 2027

	Notes	2027 Actual	Orig. 26/27
Current Assets			
Cash and cash equivalents	3	20,534,392	26,807,060
Receivables	12	9,569,032	2,357,550
Contract assets		11,769,000	2,559,735
Other current assets		149,268	0
WIP - Work in Progress		11,099,446	0
Inventories	13	727,412	619,320
Total current assets	2	**53,848,550**	**32,343,665**
Non-current Assets			
Property, plant and equipment	4	291,719,615	311,774,880
	7		
Total non-current assets	2	**291,719,615**	**311,774,880**
TOTAL ASSETS		**345,568,165**	**344,118,545**
Current Liabilities			
Payables	17	1,373,476	1,496,250
Contract liabilities		17,725,408	6,488,380
Borrowings	21	340,278	308,809
Provisions	18	1,121,195	984,620
Total current liabilities		**20,560,357**	**9,278,059**
Non-current Liabilities			
Borrowings	21	3,246,337	2,983,671
Provisions	18	2,385,439	2,351,658
Total non-current assets		**5,631,775**	**5,335,329**
TOTAL LIABILITIES		**26,192,132**	**14,613,388**
NET COMMUNITY ASSETS		**319,376,033**	**329,505,157**
Community Equity			
Asset revaluations reserve	25	199,945,956	217,477,855
Shire capital		39,500,666	52,752,672
Retained surplus/(deficiency)		70,468,611	84,560,371
Reserves		9,460,800	(19,205,424)
TOTAL COMMUNITY EQUITY		**319,376,033**	**335,585,474**

The above Statement should be read in conjunction with the accompanying notes and the Summary of Significant Accounting Policies.

Etheridge Shire Council

Statement of Cash Flows

For the Year Ended Jun 30 2027

	Notes	2027 Actual	Orig. 26/27
Cash flows from operating activities:			
Receipts from customers		3,365,229	13,069,850
Payments to suppliers and employees		(9,004,432)	(37,202,880)
Interest received		200,243	842,983
Rental income		63,132	292,522
Non-capital grants and contributions		2,236,590	31,167,123
Borrowing costs		(30,781)	(186,252)
Net cash - operating activities	23	**(3,170,019)**	**7,983,346**
Cash flows from investing activities:			
Grants, subsidies, contributions and donations		1,506,318	11,274,343
Payments for property, plant and equipment		(3,159,990)	(17,416,783)
Net cash - investing activities		**(1,653,672)**	**(6,142,440)**
Cash flows from financing activities:			
Repayment of borrowings		31,468	(290,106)
Net cash - financing activities		**31,468**	**(290,106)**
Net increase/(decrease) in cash held		**(4,792,224)**	**1,550,800**
Add cash and cash equivalents - beginning of year		25,326,616	25,323,389
Net cash - financing activities	3	**20,534,392**	**26,874,191**

The above Statement should be read in conjunction with the accompanying notes and the Summary of Significant Accounting Policies.

Etheridge Shire Council

Cash Position

as at September 2026

	G/L	Actual
Current Assets		
Bendigo Cash at Bank	0300-3000	$ 858,559
Investments	0300-3005	$ 15,002,399
22108 Ether Reserve CF	0300-3006	$ 304,183
QTC ILU and Staff Housing	0300-3007	$ 4,368,151
Cash on Hand	0300-3020	$ 1,100
		$ 20,534,392
Cash back Current Liabilities		
Annual Leave Payable	0500-5300	$ 768,021
Current LSL Payable	0500-5310	$ 353,173
Accrued Time-in-Lieu	0500-5230	$ 57,503
RDO	0500-5240	$ 16,592
		$ 1,195,290
Receivables		
Receivables - Debtors	0300-3200	$ 5,145,011
Receivables - Rates	0300-3100	$ 2,919,057
Receivables - Govt Subsidy	0300-3150	$ 8,234
		$ 8,072,302
Payables		
Accounts Payable	0500-5200	$ 573,563
Emergency Fire Service Levy	0500-5220	$ 320,946
Retentions Current	0500-5299	$ 132,685
Current Loan - Forsayth Water	0500-5410	$ -
Current ILU Staff Housing 6M	0500-5411	$ 340,278
		$ 1,367,472
Working Capital		**$ 26,043,933**

Etheridge Shire Council

Comparative Data

September 2026

	2026-27	2025-26	2024-25	2023-24
Cash Position	20,534,392	14,088,557	13,664,660	19,291,758
Working Capital	26,043,933	16,070,997	14,278,415	19,758,991
Rate Arrears	2,919,057	2,598,986	569,828	1,916,950
Current Debtors	5,145,011	2,483,501	2,757,368	347,759
Current Creditors	573,563	1,407,663	363,968	798,111
Current Loan Payable	340,278	202,314	203,150	13,510

Etheridge Shire Council
Monthly Cash Flow Estimate
September 2026

	Revenue	Expenditure
Revenue		
Rates	2,496,000	
Fees and Charges Billings	10,000	
Own Roads Program Recoveries	-	
Main Roads Invoiced Recoveries	4,836,186	
Grants Expected	169,250	
Flood Damage NDRRA	-	
GST	-	
Expenditure		
Payroll		692,000
Operating and Contractor Payables		2,500,000
PAYG-W; GST		472,600
Loan Payments		-
Capital Acq		-
Other		-
	7,511,436	3,664,600
Cash increase expected during the next period	3,846,836	

	WIP - September 2026		External Funding Amount	Previous Year (Opening balance)	YTD (Actuals)	Total Expenditure (Actuals)	Current year budget	Project Life Budget	%
0400-4150-0000	**Land & Land Improvements**								
			-	-	-	-	-	-	-
0400-4250-0000	**Buildings**								
5152-4501-0000	**Forsayth CWA Hall** - Purchase of building			1,008.09	216.66	1,224.75	198,991.91	200,000.00	1%
3412-4500-0001	**W4Q (24/27)** - Multi-Purpose Centre Mt Surprise	☐	1,580,000.00	29,878.04		29,878.04	1,550,121.96	1,580,000.00	2%
3610-4501-0001	**FNQRP (24-25)** - Coordination Centre (Gtown)	☐	2,000,000.00	18,292.60		18,292.60	1,982,069.84	2,000,000.00	1%
4011-4501-0000	**Georgetown Streets** - Georgetown Streetscaping & chairs	☐		9,252.51	1,394.54	10,647.05	10,747.49	20,000.00	53%
			3,580,000.00	**213,331.30**	**1,611.20**	**214,942.50**	**3,741,931.20**	**3,945,083.85**	**5%**
					-				
0400-4255-0000	**Growing Regions**								
6010-4501-0000	Terrestrial Centre Extension	☐	4,400,000.00	4,561,144.61	206,856.69	4,768,001.30	333,087.33	4,894,231.94	97%
6010-4502-0000	Cumberland Dam	☐	1,880,000.00	695,354.49	519,858.89	1,215,213.38	1,395,817.34	2,091,171.83	58%
6010-4503-0000	Einasleigh Peoples' Museum	☐	1,100,000.00	183,001.81		183,001.81	1,040,556.17	1,223,557.98	15%
6010-4504-0000	Our Elders Trail	☐	855,000.00	157,290.68		157,290.68	793,747.57	951,038.25	17%
			8,235,000.00	**5,596,791.59**	**726,715.58**	**6,323,507.17**	**3,563,208.41**	**9,160,000.00**	**69%**
					-				
0400-4350-0000	**Other Structures**								
3135-4500-0001	**Einasleigh** - Supply and installation of water tanks (2 x 6000 gal/23000l) for firefighting purpose	☐		17,716.31		17,716.31	32,283.69	50,000.00	35%
3620-4507-0001	**RAUP Round 11** - Forsayth Airstrip Fencing	☐	350,000.00			-	700,000.00	700,000.00	0%
3620-4507-0002	**RAUP Round 11** - Georgetown Airstrip Fencing	☐	300,000.00			-	600,000.00	600,000.00	0%
4340-4501-0001	**Forsayth WTP** - Storage Shed	☐				-	31,000.00	125,000.00	0%
5151-4504-0003	**Georgetown** - Washdown Bay	☐			1,607.03	1,607.03	5,000.00	5,000.00	32%
5151-4506-0000	**PTIIP**- Georgetown Bus Stop	☐	43,910.00			-	87,820.00	87,820.00	0%
5151-4508-0000	**NWMP Round 5** - Georgetown River Walk @ ILF *($189k capitalised in 25/26FY)*	☐	200,000.00	-	200.19	200.19	-	10,191.00	2%
5152-4500-0005	**Walking track** - Forsayth to Charleston Dam - signs and basic walkway	☐			9,202.86	9,202.86	25,000.00	25,000.00	37%
5151-4503-0001	**R2R** - Washdown Bay - Electrical Connection	☑	90,000.00	62,896.59	424.41	63,321.00	-	90,000.00	70%
5151-4503-0002	**R2R** - Washdown Bay - Avdata System	☑	4,800.00	4,642.84	90.36	4,733.20	-	4,800.00	99%
5151-4503-0003	**R2R** - Washdown Bay - Pump & Water Tank	☑	18,000.00	15,573.56	188.61	15,762.17	-	18,000.00	88%
5153-4500-0000	**Honouring Veterans** - Honour boards & memorials (Eins & Mt Surprise)	☐	55,419.30	-		-	-	55,419.30	0%
			1,062,129.30	**181,179.35**	**11,713.46**	**192,892.81**	**1,481,103.69**	**1,913,375.47**	**10%**
					-				
0400-4450-00000	**Fleet Plant & Equipment**								
tba	26-27 replacements	☐		-		-	2,092,673.17	2,092,673.17	0%
4150-4500-0001	Camp accommodation	☐		2,926.66	331,473.33	334,399.99	1,400,000.00	1,400,000.00	24%
4150-4500-2665	Fuso Tray Back Truck	☑			160,770.75	160,770.75	160,770.75	160,770.75	100%
4150-4500-2670	Fuso Tray Back Truck	☑			160,770.75	160,770.75	160,770.75	160,770.75	100%
4150-4500-5115	Kubota Tractor	☑			132,537.89	132,537.89	132,537.89	132,537.89	100%
4150-4500-7550	Dolly	☑			9,988.89	9,988.89	9,988.89	9,988.89	100%
4150-4500-7555	Dolly	☑			9,988.89	9,988.89	9,988.89	9,988.89	100%
4150-4500-7560	Dolly	☑			9,988.89	9,988.89	9,988.89	9,988.89	100%
4150-4500-8950	Diesel Fuel Tanks on Skids	☑			14,329.82	14,329.82	14,329.82	14,329.82	100%
4150-4500-8955	Diesel Fuel Tanks on Skids	☑			14,329.82	14,329.82	14,329.82	14,329.82	100%
4150-4500-8960	Diesel Fuel Tanks on Skids	☑			14,329.82	14,329.82	14,329.82	14,329.82	100%
4150-4500-8965	Diesel Fuel Tanks on Skids	☑			14,329.82	14,329.82	14,329.82	14,329.82	100%
4150-4500-8970	Generator	☑			14,550.00	14,550.00	14,550.00	14,550.00	100%
4150-4500-8975	Generator	☑			18,950.00	18,950.00	18,950.00	18,950.00	100%
4150-4500-8990	Generator	☑			29,410.00	29,410.00	29,410.00	29,410.00	100%
4150-4500-8995	Cement Weigh Hopper 6T	☐			43,051.50	43,051.50	43,051.50	43,051.50	100%
	Plant sales - trades	☐			-	- -	1,218,500.00 -	1,218,500.00	0%
				2,926.66	**978,800.16**	**981,726.82**	**2,921,500.00**	**2,921,500.00**	**34%**
					-				
0400-4650-0000	**Roads Infrastructure**								
4011-4502-0000	**QRA** - Crucial Access - Sandy Creek culverts (back access road)	☐	3,000,000.00	104,323.03	1,318,645.51	1,422,968.54	2,895,676.97	3,000,000.00	47%
4020-4501-0000	Sign replacement	☐		-	31,919.44	31,919.44	201,375.00	366,600.00	9%
4062-4501-0000	Reseals	☐	600,000.00		38,213.49	38,213.49	621,715.00	621,715.00	6%
tba	Upgrade causeways & drainage	☐		84,481.58		84,481.58	516,887.01	601,368.59	14%
tba	**R2R allocation** - 26-27	☐	892,000.99	-		-	892,000.99	1,397,005.00	0%
4062-4502-0001	**R2R 25-26** - Reconstruction and sealing work - Oak Park Road, Bagstowe (Ch 55.2km-55.7km - 6m wide)	☑	246,000.00	233,863.84	12,414.31	246,278.15		246,000.00	100%
4062-4502-0002	**R2R 25-26** - Reconstruction and sealing work - Oak Park Road, Oak Park Road Homestead (Ch 23.8km-25.3km - 6m wide)	☑	600,000.00	400,614.74	199,577.92	600,192.66		600,000.00	100%

	WIP - September 2026		External Funding Amount	Previous Year (Opening balance)	YTD (Actuals)	Total Expenditure (Actuals)	Current year budget	Project Life Budget	%
			5,528,000.99	**1,901,229.42**	**1,600,770.67**	**3,502,000.09**	**5,127,654.97**	**7,944,780.36**	**44%**
					-				
0400-4750-0000	**Water Infrastructure**								
4320-4500-0002	**Georgetown Water** - Replacement of Meters	☐		5,615.33	4,369.55	9,984.88	5,000.00	10,615.33	94%
4320-4500-0004	**Georgetown Water -** New Water Connections	☐		6,907.42	3,202.37	10,109.79		11,857.33	85%
4320-4501-0003	**Georgetown Water -** upgrade main. Install 310m of 150mm to replace 80mm ac	☐		-		-	107,545.00	107,545.00	0%
4330-4500-0000	**Einasleigh Water Assets** - Railway & ESC Bore	☐		31,351.72		31,351.72		31,351.72	100%
4340-4500-0002	**Forsayth Water** - Replacement of meters	☐			2,226.86	2,226.86	5,000.00	5,000.00	45%
4340-4500-0004	**Forsayth Water -** New Water Connection	☐		122.71		122.71		3,122.71	4%
4340-4504-0005	**Forsayth Water -** Install new 300Kl raw water reservoir at WTP to replace old concrete res (cracking & leaking - unable to fill)	☐				-	190,500.00	190,500.00	0%
4500-4506-0001	**Charleston Dam Rec Area -** Survey Design Playground/ Amenities Fencing	☐		-		-	273,339.97	273,339.97	0%
			-	**43,997.18**	**9,798.78**	**53,795.96**	**581,384.97**	**633,332.06**	**8%**
					-				
			18,405,130.29	**7,939,455.50**	**3,329,409.85**	**11,268,865.35**	**17,416,783.24**	**26,518,071.74**	**42%**

General Ledger2023.6.13.1 — Revenue and Expenditure Summary — Page - 1
(Accounts: 0300-0001-0000 to 5014-2400-0000. All report groups. 27% of year elapsed. To Level 4. Excludes committed costs)
Etheridge Shire Council (Budget for full year) — Financial Year Ending 2027 — Printed(MEGAN): 06-10-2026 12:31:25 PM

		REVENUE			EXPENDITURE			SURPLUS/(DEFICIENCY)		
		31 Oct 2026		Budget	31 Oct 2026		Budget	31 Oct 2026		Budget
1000-0001	Governance									
1000-0002	Elected Members	0.00	0%	0	88,658.88	17%	514,730	(88,658.88)	17%	(514,730)
1010-0002	Governance	0.00	0%	0	255,110.09	29%	867,840	(255,110.09)	29%	(867,840)
1020-0002	Economic Development	43,636.36	1%	3,435,000	195,129.25	120%	162,095	(151,492.89)	-5%	3,272,905
1040-0002	Regulatory Services									
1040-0003	Town Planning	0.00	0%	80,300	12,751.43	28%	46,000	(12,751.43)	-37%	34,300
1041-0003	Building Control	1,890.00	92%	2,060	0.00	0%	20,000	1,890.00	-11%	(17,940)
1042-0003	Environmental Health	3,883.00	42%	9,270	12,975.96	42%	30,900	(9,092.96)	42%	(21,630)
1043-0003	Local Laws	0.00	0%	0	0.00	0%	5,253	0.00	0%	(5,253)
1040-0002	Regulatory Services	5,773.00	6%	91,630	25,727.39	25%	102,153	(19,954.39)	190%	(10,523)
1050-0002	Disaster Management	1,336,274.50	32%	4,150,303	96,749.58	13%	720,255	1,239,524.92	36%	3,430,048
1060-0002	WH&S	0.00	0%	0	62,572.39	26%	239,850	(62,572.39)	26%	(239,850)
1000-0001	Governance	1,385,683.86	18%	7,676,933	723,947.58	28%	2,606,923	661,736.28	13%	5,070,010
2000-0001	Corporate									
2000-0002	General Rates	2,239,004.63	77%	2,914,016	87,249.79	23%	382,100	2,151,754.84	85%	2,531,916
2010-0002	General Administration	559,511.33	7%	7,746,052	824,536.12	30%	2,727,535	(265,024.79)	-5%	5,018,517
2020-0002	Employee Services	855,694.73	38%	2,266,000	802,267.37	35%	2,324,400	53,427.36	-91%	(58,400)
2030-0002	ICT	0.00	0%	0	109,037.49	29%	381,884	(109,037.49)	29%	(381,884)
2040-0002	Broadcasting Services	0.00	0%	0	1,563.14	5%	29,050	(1,563.14)	5%	(29,050)
2000-0001	Corporate	3,654,210.69	28%	12,926,068	1,824,653.91	31%	5,844,969	1,829,556.78	26%	7,081,099
3000-0001	Community									
3000-0002	Commercial Rental Properties									
3000-0003	Staff housing	42,632.00	28%	154,200	38,203.54	7%	583,070	4,428.46	-1%	(428,870)
3002-0003	Savannah House	8,232.90	53%	15,600	573.31	4%	14,306	7,659.59	592%	1,294
3003-0003	Demountable Office (St George St)	8,666.66	18%	48,000	4,984.95	81%	6,180	3,681.71	9%	41,820
3004-0003	Independent Living	3,600.00	5%	72,100	24,640.43	10%	238,956	(21,040.43)	13%	(166,856)
3000-0002	Commercial Rental Properties	63,131.56	22%	289,900	68,402.23	8%	842,512	(5,270.67)	1%	(552,612)
3010-0002	Libraries	0.00	0%	26,000	13,024.58	25%	51,502	(13,024.58)	51%	(25,502)
3020-0002	Community Development	26,250.00	100%	26,250	35,741.01	29%	122,700	(9,491.01)	10%	(96,450)
3030-0002	Sport & Recreation	210.00	0%	131,030	42,542.46	10%	411,198	(42,332.46)	15%	(280,168)
3040-0002	Halls	2,369.68	46%	5,150	17,176.49	10%	171,532	(14,806.81)	9%	(166,382)
3050-0002	Medical Centres	0.00	0%	0	5,416.13	9%	57,989	(5,416.13)	9%	(57,989)
3060-0002	Aerodromes	105,818.19	16%	650,000	17,923.69	6%	304,791	87,894.50	25%	345,209
3070-0002	Terrestrial Centre	31,104.24	25%	122,800	141,393.59	23%	612,797	(110,289.35)	23%	(489,997)

General Ledger2023.6.13.1 — Revenue and Expenditure Summary — Page - 2
(Accounts: 0300-0001-0000 to 5014-2400-0000. All report groups. 27% of year elapsed. To Level 4. Excludes committed costs)
Etheridge Shire Council (Budget for full year) — Financial Year Ending 2027 — Printed(MEGAN): 06-10-2026 12:31:25 PM

		REVENUE			EXPENDITURE			SURPLUS/(DEFICIENCY)		
		31 Oct 2026		Budget	31 Oct 2026		Budget	31 Oct 2026		Budget
3080-0002	Little Gems Child Care Centre	137,317.25	38%	362,749	124,475.28	23%	547,347	12,841.97	-7%	(184,598)
3090-0002	Georgetown Student Hostel	49,750.65	34%	146,500	60,491.73	18%	334,047	(10,741.08)	6%	(187,547)
3100-0002	Cemeteries	2,168.00	70%	3,090	9,288.84	18%	50,671	(7,120.84)	15%	(47,581)
3000-0001	Community	418,119.57	24%	1,763,469	535,876.03	15%	3,507,086	(117,756.46)	7%	(1,743,617)
4000-0001	Infrastructure Services									
4000-0002	Parks Gardens Reserves and Grounds	39,780.41	>999%	2,060	139,569.39	22%	636,986	(99,788.98)	16%	(634,926)
4010-0002	Rural Lands Protection	9,965.76	25%	39,140	34,972.84	8%	455,198	(25,007.08)	6%	(416,058)
4020-0002	Street Lighting	0.00	0%	0	836.01	8%	9,936	(836.01)	8%	(9,936)
4030-0002	Roads									
4030-0003	Shire Roads	198,213.25	3%	5,883,186	146,385.03	3%	4,412,722	51,828.22	4%	1,470,464
4031-0003	Town Streets	0.00	0%	0	76,935.84	11%	674,178	(76,935.84)	11%	(674,178)
4032-0003	Flood Damage	1,732,815.71	8%	20,650,000	2,011,973.65	10%	20,650,000	(279,157.94)	---%	0
4030-0002	Roads	1,931,028.96	7%	26,533,186	2,235,294.52	9%	25,736,900	(304,265.56)	-38%	796,286
4040-0002	Depot and Stores	32,479.92	24%	133,750	234,418.92	20%	1,177,235	(201,939.00)	19%	(1,043,485)
4050-0002	Recoverable Works									
4050-0003	Private Works	26,368.04	12%	226,600	18,487.64	10%	185,400	7,880.40	19%	41,200
4051-0003	DTMR	4,537,681.41	51%	8,896,199	5,315,893.82	66%	8,006,579	(778,212.41)	-87%	889,620
4050-0002	Recoverable Works	4,564,049.45	50%	9,122,799	5,334,381.46	65%	8,191,979	(770,332.01)	-83%	930,820
4060-0002	Plant Operations	1,811,614.24	29%	6,303,600	599,012.04	15%	3,895,365	1,212,602.20	50%	2,408,235
4000-0001	Infrastructure Services	8,388,918.74	20%	42,134,535	8,578,485.18	21%	40,103,599	(189,566.44)	-9%	2,030,936
5000-0001	Utilities									
5000-0002	Water Supply									
5000-0003	Georgetown WTP & Reticulation	400,995.83	86%	464,314	72,099.95	7%	972,035	328,895.88	-65%	(507,721)
5001-0003	Forsayth WTP & Reticulation	99,469.14	67%	149,166	80,880.13	22%	369,810	18,589.01	-8%	(220,644)
5002-0003	Charleston Dam	0.00	0%	0	6,241.09	5%	123,600	(6,241.09)	5%	(123,600)
5000-0002	Water Supply	500,464.97	82%	613,480	159,221.17	11%	1,465,445	341,243.80	-40%	(851,965)
5010-0002	Waste Management									
5010-0003	Georgetown	187,412.51	99%	189,834	138,636.16	52%	268,961	48,776.35	-62%	(79,127)
5011-0003	Forsayth	20,718.03	102%	20,398	9,610.07	10%	96,830	11,107.96	-15%	(76,432)
5012-0003	Einasleigh	15,304.87	110%	13,905	5,708.93	29%	19,479	9,595.94	-172%	(5,574)
5013-0003	Mt Surprise	16,514.01	134%	12,360	2,774.59	31%	8,972	13,739.42	406%	3,388
5010-0002	Waste Management	239,949.42	101%	236,497	156,729.75	40%	394,242	83,219.67	-53%	(157,745)

General Ledger2023.6.13.1 — Revenue and Expenditure Summary — Page - 3

(Accounts: 0300-0001-0000 to 5014-2400-0000. All report groups. 27% of year elapsed. To Level 4. Excludes committed costs)

Etheridge Shire Council (Budget for full year) — Financial Year Ending 2027 — Printed(MEGAN): 06-10-2026 12:31:25 PM

		REVENUE			EXPENDITURE			SURPLUS/(DEFICIENCY)		
		31 Oct 2026		Budget	31 Oct 2026		Budget	31 Oct 2026		Budget
5000-0001	Utilities	740,414.39	87%	849,977	315,950.92	17%	1,859,687	424,463.47	-42%	(1,009,710)
	TOTAL REVENUE AND EXPENDITURE	14,587,347.25	22%	65,350,982	11,978,913.62	22%	53,922,264	2,608,433.63	23%	11,428,718

Item No:	**11.3**
Subject:	**Audit Committee Meeting Minutes - 25th September 2026**
Classification:	**Open**
Author:	**Renee Bester, Director of Corporate Services**

EXECUTIVE SUMMARY

In accordance with section 211, Council's Audit Committee met on 25th September 2026. A copy of the meeting minutes is provided as a written report about the matters reviewed at the meeting.

RECOMMENDATION

That Council:

Receive the unconfirmed minutes of the Audit Committee Meeting held 25th September 2026, and note the business resolved therein.

BACKGROUND

Council constituted an Audit Committee in 2022, and under s211 of the *Local Government Regulations*, has requirements including:

(1) The audit committee of a local government must—

(a) meet at least twice each financial year; and

(b) review each of the following matters—

(i) the internal audit plan for the internal audit for the current financial year;

(ii) the internal audit progress report for the internal audit for the preceding financial year including the recommendations in the report and the actions to which the recommendations relate;

(iii) a draft of the local government's financial statements for the preceding financial year before the statements are certified and given to the auditor-general under section 212 ;

(iv) the auditor-general's audit report and auditor-general's observation report about the local government's financial statements for the preceding financial year; and

(c) as soon as practicable after a meeting of the committee, give the local government a written report about the matters reviewed at the meeting and the committee's recommendations about the matters.

(2) At a meeting of the audit committee—

(a) a quorum is at least half the number of members of the committee; and

(b) either—

(i) the chairperson presides; or

(ii) if the chairperson is absent, the member chosen by the members present as chairperson for the meeting presides.

(3) The audit committee may, for performing its functions under subsection (1) (b) , seek information or advice from the person who has carried out the internal audit.

(4) The chief executive officer must present the report mentioned in subsection (1) (c) at the next meeting of the local government.

LINK TO CORPORATE PLAN

Corporate Plan Aim No. 5: Best practice corporate governance and organisational excellence.
Corporate Outcome No 5.3: Council provides community leadership through financial sustainability and an open and accountable governance structure.

BUDGET & RESOURCE CONSIDERATIONS
Internal and External Audits are budgeted for within the 2026/2027 year.

LEGAL CONSIDERATIONS
Local Government Act 2009
Local Government Regulation 2012

POLICY IMPLICATIONS
Nil

CONSULTATION
No consultation required: No consultation with the community/stakeholders is required.

RISK ASSESSMENT
Risk Assessment Outcome: Low

Summary of risks and opportunities:
Risks:
1. Lack of oversight on financial reporting
2. Poor risk management
3. Non-compliance with legal and regulatory requirements

Opportunities:
1. Improved governance practices
2. Strengthened Internal Audit functions & risk management frameworks

ATTACHMENTS
1. Unconfirmed Audit Committee Meeting Minutes 25th September 2026 [**11.3.1**]

ETHERIDGE SHIRE COUNCIL



UNCONFIRMED MINUTES

AUDIT COMMITTEE MEETING
HELD AT COUNCIL CHAMBERS, GEORGETOWN
ON 25th SEPTEMBER 2026
COMMENCING AT 1.00 PM

UNCONFIRMED MINUTES – AUDIT COMMITTEE MEETING 25th SEPTEMBER 2026

MINUTES OF THE AUDIT COMMITTEE MEETING
HELD AT COUNCIL CHAMBERS, GEORGETOWN
ON FRIDAY, 25th SEPTEMBER 2026
COMMENCING AT 1.00 PM

ATTENDANCE	Mayor Barry Hughes Cr. Laurell Royes (via Teams) Mr. Jason Ritchie, Audit Committee Member (via Teams)
OFFICERS PRESENT	Mrs. Louise Knol, Chief Executive Officer Mrs. Renee Bester, Director of Corporate Services (via Teams) Mrs. Megan Alexanderson, Finance Manager Miss. Caitlin Tansey, Executive Assistant to the Director of Corporate Services
OBSERVERS	Mr. James Gaustad, BDO (via Teams) Mr. John Crook, QAO (via Teams)

1. WELCOME

The chair declared the meeting open at 1.10 pm and welcomed all in attendance.

2. APOLOGIES

Apologies:
Mrs. Carolyn Eagle, Pacifica (via Teams)
Mr. Carlos Cortes, Pacifica (via Teams)

3. CONSIDERATION OF MINUTES

Audit Committee Meeting Minutes – 12th May 2026

CORRECTIONS
Nil

RESOLUTION
That the Minutes of the Audit Committee Meeting held at Georgetown on Tuesday, 12th May 2026 be confirmed.

MOVED: Cr Royes **SECONDED**: Jason Ritchie

CARRIED
3/0

4. BUSINESS ARISING FROM PREVIOUS MINUTES

Cr Royes
Report investigations – Fundraising a threshold via a revised committee charter.

Jason Ritchie
Revisiting reports to maintain accuracy and reporting requirements. Highlighting the revisit of the annual work plan and audit plan.

5. INTERNAL AUDIT UPDATE

Nil

6. EXTERNAL AUDIT UPDATE

EXECUTIVE SUMMARY
The final audit has been completed and the Briefing Paper tabled. The closing report and financials are on track to be presented to the Committee at the next meeting.

RECOMMENDATION
That the Audit Committee receive the briefing paper and external audit update as presented.

MOVED: Cr Royes **SECONDED**: Jason Ritchie

CARRIED
3/0

7.1 FINANCIAL REPORT YEAR TO DATE

EXECUTIVE SUMMARY
In accordance with the section 204 of the Local Government Regulation 2012, and monthly finance report is required to be presented to Council stating the progress made in relation to the budget for the period of the financial year as near as practicable to the end of the month before the meeting held.

RESOLUTION
That the Audit Committee receive the report and note the contents therein.

MOVED: Cr Royes **SECONDED**: Jason Ritchie

CARRIED
3/0

7.2 ASSET REVALUATION & INTERIM FLOOD DAMAGE ASSETS

EXECUTIVE SUMMARY
A desktop indexation of roads, land, other structures and water assets was completed recently. The indexations were prepared for financial reporting purposes in accordance with Australian Accounting Standards as of 30 June 2026.

Flood event in January 2026 resulted in further damage to the road asset class; this decrease in asset value was not yet applied to the road asset class due to comprehensive revaluation not scheduled until FY26/27. Council staff together with Northlane Consultants and BDO audit team decided an interim asset adjustment be estimated and recognized in the 26-27 financial statements.

RECOMMENDATION
That the Audit Committee receive the report and note the approach taken toward revaluations in FY25/26 and further their inclusion within the financial statements

MOVED: Jason Ritchie **SECONDED**: Mayor Hughes

CARRIED

3/0

7.3 QAO INSIGHTS INTO LOCAL GOVERNMENT AUDIT COMMITTEES

EXECUTIVE SUMMARY
This report is presented to the Audit Committee to support consideration of the Queensland Audit Office's report, Insights on audit committees in local government, and to identify recommendations and improvement actions that can be appropriately implemented by Etheridge Shire Council.

RECOMMENDATION
That the Audit Committee:

1. receives and notes Management's report on the Queensland Audit Office report, *Insights on audit committees in local government*;
2. notes that Council's governance framework, including the Audit Committee Charter and Internal Audit Policy were reviewed in 2026, and is generally aligned with the principles and better practice guidance outlined in the QAO report;
3. endorses Management undertaking a self-assessment of the Audit Committee against the QAO's identified actions and better practice insights and report the findings to the committee;
4. notes managements ongoing recruitment process for an independent Audit Committee Chair in accordance with the Audit Committee Charter;
5. requests that a further report be provided to a future Audit Committee meeting outlining the outcomes of the self-assessment and any proposed improvement actions.

MOVED: Cr Royes **SECONDED**: Jason Ritchie

CARRIED
3/0

6. CEO/DCS UPDATE

8.1 CEO Update

EXECUTIVE SUMMARY
The CEO gave an update to the committee and the report tabled included:

1. Human Resources Update
    a. The Director of Engineering Services has tendered their resignation effective 16 October 2026. To mitigate risk to Council, McArthur have been engaged to undertake DES recruitment.
    b. Recruitment to vacant positions within Council remain an ongoing challenge. Where possible as being a viable option, internal recruitment is considered. The current WH & S Consultant, David Gornalle, will cease contracted works on 30 October 2026.
    c. Council and the Audit Committee acknowledges and thanks David Gornalle for his services.
2. Workplace Health and Safety
    a. Council has recently appointed a permanent WHS Officer via internal recruitment. The transition period will commence in November.
3. Insurance & Legal Matters
    a. No material/major insurance or legal issues

RESOLUTION
That the Audit Committee receive the CEO Briefing Report as presented.

MOVED: Mayor Hughes **SECONDED**: Jason Ritchie

CARRIED
3/0

8.2 DCS Update

EXECUTIVE SUMMARY
The DCS tabled their report to the committee and the report tabled included:

1. Annual Workplan Status Update
2. External Audit Actions Register
3. Governance Update

RESOLUTION
That the audit committee receive the DCS Briefing Report as presented.

MOVED: Cr Royes **SECONDED**: Jason Ritchie

CARRIED
3/0

7. CLOSED MEETING WITH AUDIT PRACTITIONERS

Nil

8. GENERAL BUSINESS

Mayor Hughes
Commendations were extended to Cr Royes for their commitment and contributions to improving and strengthening audit processes over the past year.

9. CONCLUSION

There being no further business, the Chair declared the meeting closed at 1.44 pm. These minutes will be confirmed at the next meeting.

Mayor Barry Hughes
MAYOR

UNCONFIRMED MINUTES – AUDIT COMMITTEE MEETING 25th SEPTEMBER 2026

Item No:	**11.4**
Subject:	**First Quarter Budget Review FY2026/2027**
Classification:	**Open**
Author:	**Renee Bester, Director of Corporate Services**

EXECUTIVE SUMMARY

Pursuant to section 104 of the *Local Government Act 2009* and section 169 of the *Local Government Regulation 2012*, Council adopted its annual budget in July. A review of Council's budget has been completed as of 30th September 2026. It is proposed the Council amend the adopted budget to address any organisation change that has occurred since its adoption. Pursuant to section 170(3) of the *Local Government Regulation 2012*, Council may amend its budget at any time by resolution prior to the end of financial year.

RECOMMENDATION

That Council, in accordance with section 170(3) of the *Local Government Regulation 2012*, amend its 2026/2027 budget as presented.

BACKGROUND

A desktop review of Council's budget has been completed by Finance & ELT teams and further details regarding the Operational and Capital Budget are explained below.

Operational Budget Review

The first quarter review includes adjustments for grant revenue to be received (or already received) and unaccounted for expenditure. The result of the review has resulted in an increase to revenue of $46,219,670. Additionally, there have been changes made to the expenditure to the value of $41,965,393. This has resulted in a net increase to profit of $4,254,276.

Capital Budget Review

The attachment outlines projects which have been identified and made recommendations based on current information.

LINK TO CORPORATE PLAN

Corporate Plan Aim No. 5: Best practice corporate governance and organisational excellence.
Corporate Outcome No 5.1: Effective communication between Council and the community and across the community.

BUDGET & RESOURCE CONSIDERATIONS

Budget considerations are outlined in attachments 1 & 2.

LEGAL CONSIDERATIONS

Local Government Act 2009
Local Government Regulation 2012

POLICY IMPLICATIONS

Nil

CONSULTATION

No consultation required: No consultation with the community/stakeholders is required.

RISK ASSESSMENT

Risk Assessment Outcome: Low/Medium/High/Extreme (Please choose one)

Summary of risks and opportunities:
Risk 1 – Making changes to original budget estimates may not significantly improve the quality of the overall budget.
Risk 2 – Budgets are attention directing devices, effective in assisting staff in their daily decision making, planning and other operational activities. Constantly changing budget estimates may decrease the effectiveness of the budgeting process.
Risk 3 – The time and effort involved may not result in any improvement in outcomes.
Opportunity 1 - Matching Councils actual movements in cash inflows and outflows provides a better basis of informing staff and community information end users.
Opportunity 2 – Constant reviews may provide better awareness and understanding and generally improves the quality of financial Information and organisation efficiency.

ATTACHMENTS
1. Operational First Quarter Review [**11.4.1**]
2. Capital First Quarter Review [**11.4.2**]

		REVENUE			EXPENDITURE					
		30-Sep-26		Budget	30-Sep-26		Budget			
1000-0002	Elected Members	-	0%	-	86,434	17%	514,730	-	-	
1010-0002	Governance	-	0%	-	255,110	29%	867,840	-	-	OK - includes 1 fortnight of Ken Timms term - no amendment required
1020-0002	Economic Development	43,636	1%	3,435,000	149,581	92%	162,095	40,000	330,000	Ag Precinct project ($430k received of $470k grant funding in previous FYs)
1030-0002	Civic Receptions and Events	-	0%	-	-	0%	-	-	-	
1040-0003	Town Planning	-	0%	80,300	11,026	24%	46,000	-	-	
1041-0003	Building Control	-	0%	2,060	-	0%	20,000	-	-	
1042-0003	Environmental Health	3,883	42%	9,270	12,976	42%	30,900	-	10,000	Flying fox management ($3,840) EPA licences ($7,174) - not budgetted for initially
1040-0002	Regulatory Services	-	0%	-	-	0%	5,253	-	60,000	Local laws review
1050-0002	Disaster Management	1,206,275	29%	4,150,303	237,667	33%	720,255	-	-	CRRSO and CRRO Etheridge Show attendance out of ordinary hours
1060-0002	WHS	-	0%	-	50,055	21%	239,850	-	-	
2000-0002	General Rates	2,238,075	77%	2,914,016	37,504	10%	382,100	-	-	Currently investigating rates revenue
2010-0002	General Administration	556,715	7%	7,746,052	551,471	20%	2,727,535	-	35,000	$10k Sponsorship Visa - M Iqual + recruitment of DES + $50k movement from insurance to cover workers comp
2020-0002	Employee Services	855,695	38%	2,266,000	731,329	31%	2,324,400	-	50,000	OK - workers compensation increase - budget reallocated from insurance
2030-0002	ICT	-	0%	-	100,514	26%	381,884	-	-	
2040-0002	Broadcasting Services	-	0%	-	1,299	4%	29,050	-	-	
3000-0003	Staff housing	36,296	24%	154,200	38,204	7%	583,070	-	-	
3002-0003	Savannah House	8,233	53%	15,600	573	4%	14,306	-	-	
3003-0003	Demountable Office (Mary St)	8,667	18%	48,000	4,985	81%	6,180	-	4,000	Furniture fitout for ESC staff
3004-0003	Independent Living	2,700	4%	72,100	24,640	10%	238,956	-	10,000	Qleave final payment
3010-0002	Libraries	-	0%	26,000	12,930	25%	51,502	-	-	
3020-0002	Community Development	26,250	100%	26,250	35,500	29%	122,700	-	-	OK - community assistance grants paid out in 1st quarter
3030-0002	Sport & Recreation	-	0%	131,030	41,670	10%	411,198	-	-	
3040-0002	Halls	1,488	29%	5,150	17,099	10%	171,532	-	-	
3050-0002	Medical Centres	-	0%	-	5,320	9%	57,989	-	-	
3060-0002	Aerodromes	105,818	16%	650,000	17,924	6%	304,791	-	-	
3070-0002	Terrestrial Centre	28,104	23%	122,800	140,833	23%	612,797	-	-	
3080-0002	Little Gems Child Care Centre	142,478	39%	362,749	120,743	22%	547,347	-	-	
3090-0002	Georgetown Student Hostel	18,088	12%	146,500	59,750	18%	334,047	-	-	
3100-0002	Cemeteries	2,168	70%	3,090	9,289	18%	50,671	-	-	
4000-0002	Parks Gardens Reserves and Grounds	39,183	1902%	2,060	137,957	22%	636,986	55,419	-	Honouring our Veterans funding
4010-0002	Rural Lands Protection	9,921	25%	39,140	34,973	8%	455,198	-	-	
4020-0002	Street Lighting	-	0%	-	836	8%	9,936	-	-	
4030-0003	Shire Roads	198,213	3%	5,883,186	143,417	3%	4,412,722	-	-	
4031-0003	Town Streets	-	0%	-	76,936	11%	674,178	-	-	
4032-0003	Flood Damage	230,736	1%	20,650,000	2,011,974	10%	20,650,000	78,000	-	Qleave refunds from flood damage projects
4040-0002	Depot and Stores	32,087	24%	133,750	216,792	18%	1,177,235	-	-	
4050-0003	Private Works	25,172	11%	226,600	18,488	10%	185,400	-	-	
4051-0003	DTMR	3,694,929	42%	8,896,199	4,746,577	59%	8,006,579	46,046,250	41,441,625	Original budget estimation before TMR POs received
4060-0003	Plant Operations	1,795,386	28%	6,303,600	571,922	15%	3,895,365	-	5,232	Mechanic role not filled in first quarter + diagnostic tablet
5000-0003	Georgetown WTP & Reticulation	400,922	86%	464,314	72,071	7%	972,035	-	-	
5001-0003	Forsayth WTP & Reticulation	101,417	68%	149,166	80,863	22%	369,810	-	-	
5002-0003	Charleston Dam	-	0%	-	6,241	5%	123,600	-	-	
5010-0003	Georgetown	187,374	99%	189,834	138,636	52%	268,961	-	100,000	Contractors used for delivery of top cover material for landfill (stockpile of 5 years) + underestimated monthly cost
5011-0003	Forsayth	20,716	102%	20,398	9,610	10%	96,830	-	-	
5012-0003	Einasleigh	15,304	110%	13,905	4,622	24%	19,479	-	-	
5013-0003	Mt Surprise	16,513	134%	12,360	2,775	31%	8,972	-	-	OK - landfill maintenance
	TOTAL REVENUE AND EXPENDITURE	12,052,441	18%	65,350,982	11,029,117	20%	53,922,264	46,219,670	41,965,393	

Net change	4,254,276
After depreciation change	4,254,276

	Capex - Q1 review		External Funding Amount	Previous Year (Opening balance)	YTD (Actuals)	Total Expenditure (Actuals)	Current year budget	Q1 review	Project Life Budget	%
0400-4150-0000	**Land & Land Improvements**									
			-	-	-	-	-	-	-	-
0400-4250-0000	**Buildings**									
5152-4501-0000	**Forsayth CWA Hall** - Purchase of building			1,008.09	216.66	1,224.75	198,991.91		200,000.00	1%
3412-4500-0001	**W4Q (24/27)** - Multi-Purpose Centre Mt Surprise	☐	1,580,000.00	29,878.04		29,878.04	1,550,121.96		1,580,000.00	2%
3610-4501-0001	**FNQRP (24-25)** - Coordination Centre (Gtown)	☐	2,000,000.00	18,292.60		18,292.60	1,982,069.84		2,000,000.00	1%
4011-4501-0000	**Georgetown Streets** - Georgetown Streetscaping & chairs	☐		9,252.51	1,394.54	10,647.05	10,747.49		20,000.00	53%
					-					
0400-4255-0000	**Growing Regions**									
6010-4501-0000	Terrestrial Centre Extension	☐	4,400,000.00	4,561,144.61	206,856.69	4,768,001.30	2,394,101.53		6,154,557.20	77%
6010-4502-0000	Cumberland Dam	☐	1,880,000.00	695,354.49	519,858.89	1,215,213.38	735,340.98		1,890,353.47	64%
6010-4503-0000	Einasleigh Peoples' Museum	☐	1,100,000.00	183,001.81		183,001.81	227,728.27		585,424.92	31%
6010-4504-0000	Our Elders Trail	☐	855,000.00	157,290.68		157,290.68	206,037.63		529,664.41	30%
			8,235,000.00	**5,596,791.59**	**726,715.58**	**6,323,507.17**	**3,563,208.41**	**-**	**9,160,000.00**	**69%**
					-					
0400-4350-0000	**Other Structures**									
3135-4500-0001	**Einasleigh** - Supply and installation of water tanks (2 x 6000 gal/23000l) for firefighting purpose	☐		17,716.31		17,716.31	32,283.69		50,000.00	35%
3620-4507-0001	**RAUP Round 11** - Forsayth Airstrip Fencing	☐	350,000.00			-	700,000.00		700,000.00	0%
3620-4507-0002	**RAUP Round 11** - Georgetown Airstrip Fencing	☐	300,000.00			-	600,000.00		600,000.00	0%
4340-4501-0001	**Forsayth WTP** - Storage Shed	☐				-	31,000.00		125,000.00	0%
5151-4504-0003	**Georgetown** - Washdown Bay	☐			1,607.03	1,607.03	5,000.00		5,000.00	32%
5151-4506-0000	**PTIIP**- Georgetown Bus Stop	☐	43,910.00			-	87,820.00		87,820.00	0%
5151-4508-0000	**NWMP Round 5** - Georgetown River Walk @ ILF *($189k capitalised in 25/26FY)*	☐	200,000.00	-	200.19	200.19	-	10,191.00	10,191.00	2%
5152-4500-0005	**Walking track** - Forsayth to Charleston Dam - signs and basic walkway	☐			9,403.05	9,403.05	25,000.00		25,000.00	38%
5151-4503-0001	**R2R** - Washdown Bay - Electrical Connection	☑	90,000.00	62,896.59	424.41	63,321.00	-		90,000.00	70%
5151-4503-0002	**R2R** - Washdown Bay - Avdata System	☑	4,800.00	4,642.84	90.36	4,733.20	-		4,800.00	99%
5151-4503-0003	**R2R** - Washdown Bay - Pump & Water Tank	☑	18,000.00	15,573.56	188.61	15,762.17	-		18,000.00	88%
5153-4500-0000	**Honouring Veterans** - Honour boards & memorials (Eins & Mt Surprise)	☐	55,419.30	-		-	-	60,919.30	60,919.30	0%
			1,062,129.30	**181,179.35**	**11,913.65**	**193,093.00**	**1,481,103.69**	**71,110.30**	**1,918,875.47**	**10%**
					200.19					
0400-4450-00000	**Fleet Plant & Equipment**									
tba	26-27 replacements	☐		-		-	2,198,634.67		2,198,634.67	0%
4150-4500-0001	Camp accommodation	☐		2,926.66	331,473.33	334,399.99	1,400,000.00		1,400,000.00	24%
4150-4500-2665	Fuso Tray Back Truck	☑			160,770.75	160,770.75	160,770.75		160,770.75	100%
4150-4500-2670	Fuso Tray Back Truck	☑			160,770.75	160,770.75	160,770.75		160,770.75	100%
4150-4500-5115	Kubota Tractor	☑			132,537.89	132,537.89	132,537.89		132,537.89	100%
4150-4500-7550	Dolly	☑			9,988.89	9,988.89	9,988.89		9,988.89	100%
4150-4500-7555	Dolly	☑			9,988.89	9,988.89	9,988.89		9,988.89	100%
4150-4500-7560	Dolly	☑			9,988.89	9,988.89	9,988.89		9,988.89	100%
4150-4500-8950	Diesel Fuel Tanks on Skids	☑			14,329.82	14,329.82	14,329.82		14,329.82	100%
4150-4500-8955	Diesel Fuel Tanks on Skids	☑			14,329.82	14,329.82	14,329.82		14,329.82	100%
4150-4500-8960	Diesel Fuel Tanks on Skids	☑			14,329.82	14,329.82	14,329.82		14,329.82	100%
4150-4500-8965	Diesel Fuel Tanks on Skids	☑			14,329.82	14,329.82	14,329.82		14,329.82	100%
	Plant sales - trades	☐				-	- 1,218,500.00	-	1,218,500.00	0%
				2,926.66	**872,838.66**	**875,765.32**	**2,921,500.00**	**-**	**2,921,500.00**	**30%**
					-					
0400-4650-0000	**Roads Infrastructure**									
4011-4502-0000	**QRA** - Crucial Access - Sandy Creek culverts (back access road)	☐	3,000,000.00	104,323.03	1,318,645.51	1,422,968.54	2,895,676.97		3,000,000.00	47%
4020-4501-0000	Sign replacement	☐		-	31,919.44	31,919.44	201,375.00		366,600.00	9%
4062-4501-0000	Reseals	☐	600,000.00		38,213.49	38,213.49	621,715.00		621,715.00	6%
tba	Upgrade causeways & drainage	☐		84,481.58		84,481.58	516,887.01		601,368.59	14%
tba	**R2R allocation** - 26-27	☐	892,000.99	-		-	892,000.99		1,397,005.00	0%
4062-4502-0001	**R2R 25-26** - Reconstruction and sealing work - Oak Park Road, Bagstowe (Ch 55.2km-55.7km - 6m wide)	☑	246,000.00	233,863.84	12,414.31	246,278.15			246,000.00	100%
4062-4502-0002	**R2R 25-26** - Reconstruction and sealing work - Oak Park Road, Oak Park Road Homestead (Ch 23.8km-25.3km - 6m wide)	☑	600,000.00	400,614.74	199,577.92	600,192.66			600,000.00	100%
			5,528,000.99	**1,901,229.42**	**1,600,770.67**	**3,502,000.09**	**5,127,654.97**	**-**	**7,944,780.36**	**44%**
					-					
0400-4750-0000	**Water Infrastructure**									

4320-4500-0002	**Georgetown Water** - Replacement of Meters	☐		5,615.33	4,369.55	9,984.88	5,000.00		10,615.33	94%
4320-4500-0004	**Georgetown Water -** New Water Connections	☐		6,907.42	3,202.37	10,109.79			11,857.33	85%
4320-4501-0003	**Georgetown Water -** upgrade main. Install 310m of 150mm to replace 80mm ac	☐		-		-	107,545.00		107,545.00	0%
4330-4500-0000	**Einasleigh Water Assets** - Railway & ESC Bore	☐		31,351.72		31,351.72		37,000.00	31,351.72	100%
4340-4500-0002	**Forsayth Water** - Replacement of meters	☐			2,226.86	2,226.86	5,000.00		5,000.00	45%
4340-4500-0004	**Forsayth Water -** New Water Connection	☐		122.71		122.71			3,122.71	4%
4340-4504-0005	**Forsayth Water -** Install new 300Kl raw water reservoir at WTP to replace old concrete res (cracking & leaking - unable to fill)	☐				-	190,500.00		190,500.00	0%
4500-4506-0001	**Charleston Dam Rec Area -** Survey Design Playground/ Amenities Fencing	☐		-		-	273,339.97		273,339.97	0%
			-	**43,997.18**	**9,798.78**	**53,795.96**	**581,384.97**	**37,000.00**	**633,332.06**	**8%**
					-					
			18,405,130.29	**7,939,455.50**	**3,223,648.54**	**11,163,104.04**	**17,416,783.24**	**108,110.30**	**26,523,571.74**	**42%**

				Funded
30 June 2026 closing balance	7,939,455.50	Approved Capex Budget	17,416,783.24	
		Q1 review	108,110.30	108,110.30
	-	Total budget	17,524,893.54	

12 DIRECTOR ENGINEERING SERVICES - OPEN SESSION REPORTS

Item No: **12.1**

Subject: **Briefing Report September 2026**

Classification: **Open**

Author: **Alan Clark, Director of Engineering Services**

RECOMMENDATION
That Council receives and notes the Director of Engineering Briefing Report for September 2026.

DFRA 2025

The eight road packages are all progressing reasonably well. There is some concern about Heisler (package 6) and Durak (package 4), but both of these contractors have increased their output in the last week of the month. They will continue to be closely monitored.

The concrete package being delivered by Stratos Civil is nearing completion. The original scope has been completed, and they are now completing variation work on Abingdon Downs Road and Copperfield Road.

The Charleston Dam Sill project is progressing well; excavation is near complete and dental concrete works are underway. Reinforcement steel is being prepared off site so it can be positioned as soon as excavation and dental concrete work is completed. This should allow structural concrete work to commence in late October.

Additional details are in the Northlane Monthly Works Report.

TMR Works

The current position of REPA works is:
DRFA 2024 - This work is very near complete.

DRFA 2025 – Mill and Fill work is progressing well with approximately 30% completed; the majority of the remaining work is on the Kennedy Highway north of the Lynd. Preparation work is continuing on the Gregory Highway between Einasleigh and the Oasis. Gravel crushing and screening has not been able to keep up with demand which has necessitated some changes to the program. The contractor believes that he will now be able to meet demand.

GDR – Line marking was again delayed and is now booked for 10 October 2026. A meeting is scheduled for 14 October with Council and DTMR officers to work through in detail the claims and payments for this job. Officers have had several meetings over the past month with DTMR and this includes the CEO and Director Engineering Services.

KDR – Contracts have now been signed for a value of $12,090,612.67. It is expected that the drainage components will be completed prior to the next wet season which will hopefully allow early access to the site for pavement construction in the new year.

Forsayth Road – After the late start due to the asbestos concerns, work has progressed well and is close to being back on track. The amount of blasting work has been increased necessitating blasts on the 6th and 7th of October 2026. Soil samples for the next two sections of Forsayth Road and the next section of the GDR have been collected by a suitably qualified soil testing contractor and sent to Sydney for testing.

CAPITAL WORKS

Sandy Creek Bridge – work is progressing and is on track for the installation of the pre-stressed beams which are being delivered on 20 October 2026. A separate report is included dealing with the latest condition's variation.

Charlston Dam Pontoon – Council is waiting on the results of the grant application before proceeding with this project.

Cumberland Dam - The Cumberland Dam project continues to be hampered by supply issues, but contractors are now back on site.

Elders Walk: A contractor has been appointed to complete the path. Work is expected to commence shortly. Rocks for the retaining wall and garden at the back of the Terrestrial Centre will be brought in from the Forsayth Road project.

ATTACHMENTS
Nil

13 CLOSED SESSION REPORTS

REASONS FOR CONFIDENTIALITY
This report is considered confidential in accordance with section 254J (3) (g) of the *Local Government Regulation 2012*, as it contains information relating to negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

Item No:	**13.1**
Subject:	**Riverview Causeway**
Classification:	**Closed**
Author:	**Alan Clark, Director of Engineering Services**

REASONS FOR CONFIDENTIALITY
This report is considered confidential in accordance with section 254J (3) (g) of the *Local Government Regulation 2012*, as it contains information relating to negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

Item No:	**13.2**
Subject:	**Construction of Unmade Paper Roads**
Classification:	**Closed**
Author:	**Alan Clark, Director of Engineering Services**

REASONS FOR CONFIDENTIALITY
This report is considered confidential in accordance with section 254J (3) (g) of the *Local Government Regulation 2012*, as it contains information relating to negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

Item No:	**13.3**
Subject:	**Variations to Sandy Creek Bridge**
Classification:	**Closed**
Author:	**Alan Clark, Director of Engineering Services**

REASONS FOR CONFIDENTIALITY
This report is considered confidential in accordance with section 254J (3) (g) of the *Local Government Regulation 2012*, as it contains information relating to negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

Item No:	**13.4**
Subject:	**Plant Replacement - Light Vehicle Tender**
Classification:	Closed
Author:	**Allan (Jack) Parry, Works Manager**

REASONS FOR CONFIDENTIALITY
This report is considered confidential in accordance with section 254J (3) (g) of the *Local Government Regulation 2012*, as it contains information relating to negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

Item No: **13.5**

Subject: **Plant Replacement - Roller Tender**

Classification: Closed

Author: **Allan (Jack) Parry, Works Manager**

REASONS FOR CONFIDENTIALITY
This report is considered confidential in accordance with section 254J (3) (g) of the *Local Government Regulation 2012*, as it contains information relating to negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

Item No: **13.6**

Subject: **DRFA Project Management Services**

Classification: Closed

Author: **Louise Knol, Chief Executive Officer**

REASONS FOR CONFIDENTIALITY
Local Government Regulation 2012, as it contains information relating to negotiations relating to a commercial matter involving the local government for which a public discussion would be likely to prejudice the interests of the local government.

14 FOR YOUR INFORMATION

The below items are for information only:

1. D G 49417 [**14.1.1**]
2. DG Letter to CEO Part 25 [**14.1.2**]
3. local-government-rtr-dashboard [**14.1.3**]
4. Correspondence from the Qld State Archivist RE Signing Council Meeting Minutes 15025 [**14.1.4**]
5. Attachment - Fact Sheet - Signing of Council Meeting Minutes [**14.1.5**]

DELIVERING FOR QUEENSLAND | Queensland Government

Office of the
Director-General
Department of
Transport and Main Roads

Our ref: DG49417

18 September 2026

Councillor Barry Hughes
Mayor
Etheridge Shire Council
mayor@etheridge.qld.gov.au

Dear Mayor

Thank you for your enquiry of 30 July 2026 about an update on relocation of the *Savannahlander* rail line into the Copperfield Road Bridge near Einasleigh. I note that on 10 August 2026, Ms Louise Knol, Chief Executive Officer, Etheridge Shire Council (ESC), also wrote to me about the same matter.

Since we met, the Department of Transport and Main Roads (TMR) has been working closely with Queensland Rail to further investigate this proposal.

Initial investigations indicate that while incorporating the rail line into the existing road bridge may be technically feasible, there are a number of challenges that would require overcoming. These include the structural capacity of the bridge and rail safety requirements associated with a shared road and rail environment.

Considering these challenges and the uncertainty around them, TMR and Queensland Rail will continue to work together to return rail services into Einasleigh as soon as practical by repairing the existing rail line.

I trust this information is of assistance.

Yours sincerely

Sally Stannard
Director-General
Department of Transport and Main Roads

1 William Street Brisbane
GPO Box 1549 Brisbane
Queensland 4001 Australia
Telephone +61 7 3066 7316
Website www.tmr.qld.gov.au
ABN 39 407 690 291

DELIVERING FOR QUEENSLAND | Queensland Government

Our ref: CTS 18510/26

Department of
Local Government, Water and Volunteers

Ms Louise Knol
Chief Executive Officer
Etheridge Shire Council

Email: LouiseK@etheridge.qld.gov.au

Dear Ms Knol

I write to notify you that the Local Government Red Tape Reduction Taskforce dashboard (the Dashboard) has recently been published on the Department of Local Government, Water and Volunteers' (the department) website.

The Local Government Red Tape Reduction Taskforce (the Taskforce) was established in January 2025 to provide advice to the Queensland Government about reducing red tape for local governments.

The main objectives of the Taskforce were to identify opportunities to streamline approvals and remove barriers for local government projects that:

- reduce costs for councils, ratepayers and other stakeholders
- improve the efficiency of local governments through the identification of unnecessary and/or inefficient laws and regulation, and
- enhance long-term sustainability of Queensland's local governments.

The Taskforce delivered its final recommendations for consideration, and the Queensland Government has been reviewing these and consulting across government agencies. As a result, several recommendations were identified for priority implementation across government.

Cutting red tape for councils. I know how important it is for councils to be able to get on with the job of serving your communities.

The department has published the Dashboard, which outlines various agencies' progress in implementing priority report recommendations. The Dashboard is available at www.dlgwv.qld.gov.au/local-government/taskforce.

The Queensland Government is continuing to consider the remaining priority recommendations, and the Dashboard will be updated as more recommendations are progressed and implemented.

If you have any questions or would like to arrange a briefing for the council, please contact Mr Karl Holden, A/Director, Local Government Policy and Legislation, Local Government Division in the department on (07) 3096 6523 or email karl.holden@dlgwv.qld.gov.au who will be pleased to assist.

Yours sincerely

Bronwyn Blagoev
Director-General

1 William Street
Brisbane QLD 4000
GPO Box 2247 Brisbane
Queensland 4001 Australia
Telephone 13 QGOV (13 74 68)
Website www.dlgwv.qld.gov.au
ABN 51 242 471 577

Local Government Red Tape Reduction Taskforce Dashboard

Queensland Government

	Current status
Rates concessions DLGWV amend local government legislation to enable councils to grant rates concessions to residents to address cost-of-living pressures.	*Delivered*
Fish-friendly passages I. DPI provide pre-approved fish-friendly designs for different types of waterway barrier works structures. II. DPI increase opportunities for councils to self-assess their compliance with waterway barrier works requirements. III. DPI establish a streamlined process for councils to appeal the classification of a waterway under Queensland waterways for waterway barrier works mapping.	*Delivered*
Process for claiming disaster assistance QRA advocate for improvements for disaster funding arrangements, with potential improvements including: • having simplified claims processes and ensuring fair assessment criteria for restoration of public assets • flexibility in funding eligibility criteria, in order to provide immediate assistance • recognising multiple options to assess the pre-disaster event condition of assets	*Delivered*
Major policy decisions regarding Disaster Recovery Funding Arrangements in caretaker periods DLGWV enable the Minister to proactively issue an approval for disaster affected councils to make major policy decisions regarding Disaster Recovery Funding Arrangements during the local government quadrennial election caretaker period.	*Delivered*

Process for review of wards/divisions DLGWV remove inefficiencies in the process for reviews of wards/divisions and councillors before quadrennial elections by enabling the ECQ to conduct the reviews.	*Delivered*
Meeting frequency and annual reports I. DLGWV remove the requirement for the Minister to grant extensions of time for councils' adoption of their annual report. II. DLGWV remove the requirement for Ministerial approval to hold meetings less frequently than once per month in certain circumstances, such as in disaster declared areas.	*Delivered*
Procurement thresholds DLGWV increase existing thresholds for requiring tenders in the Local Government Regulation 2012 and the City of Brisbane Regulation 2012 and insert appropriate automatic annual indexation.	*Delivered*
DLGWV sector leadership DLGWV be empowered by the Queensland Cabinet to play a more active and visible coordination role for councils when dealing with multiple Queensland Government agencies to enhance the collaborative government effort and empower councils to make decisions.	*Delivered*
Monitoring Taskforce recommendations DLGWV establish a process to report regularly to the Queensland Cabinet on the progress of agreed recommendations from this report at six-, 12- and 24-month intervals.	*Delivered*
Reportable losses DLGWV remove the regulatory requirement for councils to notify the Minister of reportable losses (but maintain their own appropriate records).	*Delivered*

Disposal of interests in land DLGWV remove the need for Ministerial approval for a council to dispose of an interest in land, establish performance-based principles, and require councils to demonstrate that their disposal of assets is in the public interest.	*Delivered*
Publication of councillor conduct matters in annual reports DLGWV remove the requirement for councils to publish statistics on councillor conduct matters in their annual report that are already published in their councillor conduct register.	*Delivered*
Queensland Waste Strategy DETSI ensure local governments are adequately consulted regarding the new Queensland Waste Strategy.	*Delivered*
Queensland Waste Data System DETSI continue to develop a new Queensland Waste Data System with a view to provide for more streamlined and automated reporting and to eliminate duplication in reporting between detailed data and summary data.	*Delivered*
Annual performance plans DLGWV introduce an appropriate threshold for when council commercial business units must prepare annual performance plans as part of the sunset review of the Local Government Regulation 2012 and City of Brisbane Regulation 2012.	*Delivered*
Emergency Management Levy - payment process QFD amend the Fire Services Regulation 2011 to allow large councils identified in Schedule 3 to remit the Emergency Management Levy (EML) four times per year, and remaining councils to remit the EML twice per year.	*Delivered*

Uploading water quality monitoring data QH explore options for facilitating the direct upload of data into the Statewide Water Information Management System.	*Delivered*
Payment quantum and timing of Financial Assistance Grants DLGWV advocate to the Federal Government that the timing and quantum of Financial Assistance Grant Payments to be set no later than May 31 each year.	*Delivered*
Community Recovery Officers QRA continue to advocate for improvements to disaster funding arrangements, including in relation to funding for Community Recovery Officer positions.	*Delivered*
Rules and eligibility - Disaster Recovery Funding Arrangements QRA advocate for betterment funding to support the restoration of damaged essential public assets to a more disaster resilient standard, including by making appropriate improvements to Federal Government's Disaster Recovery Funding Arrangements.	*Delivered*
State Library of Queensland data collection The State Library of Queensland further review councils' reporting requirements to identify additional opportunities to streamline reporting.	In progress
Operational dredging – public interest DETSI consider simpler regulatory options for approving operational dredging and update the guidance materials to provide sufficient support for councils.	In progress

Easement approval process DNRMMRRD engage councils and create a more streamlined process for granting easements required for the renewal/upgrade of essential infrastructure.	In progress
Reporting on gravel takings under sales permits DPI consider on a case-by-case basis how to reduce reporting on councils' gravel pit takings.	In progress
Sole invite contract process DTMR investigate simplifying their process for contracting with local governments where they are the sole supplier.	In progress

Local Government red tape reduction taskforce | Local Government, Water and Volunteers

DELIVERING FOR QUEENSLAND | Queensland Government

Department of Justice

Our ref: 26/25077

6 October 2026

Ms Louise Knol
Chief Executive Officer
Etheridge Shire Council
Email: LouiseK@etheridge.qld.gov.au
CC: info@etheridge.qld.gov.au

Dear Ms Knol

Signing of council meeting minutes

Queensland State Archives (QSA) recently developed the attached fact sheet to clarify legislative requirements for signing council meeting minutes and managing previously signed council meeting minutes, including disposal of digitised original records.

The fact sheet highlights that there is no longer a legislative requirement under the *Local Government Act 2009* or the *Local Government Regulation 2012* for councils to sign meeting minutes, either electronically or physically. The fact sheet also outlines considerations relating to electronic signatures, digitisation, source record disposal, and the management of council meeting minutes as permanent public records.

I encourage you to share this information with relevant officers within your organisation, including governance, records management and council administration staff.

If your council requires further clarification, information or assistance regarding this matter, please contact Ms Rachael West, Director Policy and Assurance, Government Records, on 07 3037 6752 or email DirectorPAGR@archives.qld.gov.au.

Yours sincerely

Louise Howard
Queensland State Archivist
Queensland State Archives

Enc: Fact Sheet – Signing of Council Meeting Minutes

Queensland State Archives
435 Compton Road Runcorn
PO Box 1397 Sunnybank Hills
Queensland 4109 Australia
Telephone +617 3037 6777
www.archives.qld.gov.au

ABN 13 846 673 994

Fact Sheet: **Signing of Council Meeting Minutes**

This fact sheet provides an overview of the legislative requirements regarding the signing of local government council meeting minutes in Queensland, including historical context, guidance on electronic signatures, and information on digitising records with wet signatures.

Current Legislation

As of 12 October 2020, there is no longer a legislative requirement under the *Local Government Act 2009* (LG Act) or the Local Government Regulation 2012 (LG Regulation) for councils to sign meeting minutes.



Historical Context

Requirement to sign minutes (prior to 12 October 2020)

Before the 2020 amendment, the LG Regulation required meeting minutes to be signed by the person presiding over the meeting at which the minutes were confirmed.

Electronic Signatures

Section 14 of the *Electronic Transactions (Queensland) Act 2001* (ET Act) allows for the use of electronic signatures, provided that:

- The method used to sign electronically identifies the person and indicates their intention in relation to the information communicated.
- The method used is as reliable as appropriate for the purpose for which the information is communicated.
- The recipient of the signature consents to the use of the electronic method.

Applicability to Meeting Minutes

Meeting minutes do not appear to fall under the excluded transactions listed in schedule 1 of the ET Act. Therefore, prior to 12 October 2020, it is likely that meeting minutes could have been signed electronically.

Minutes created electronically were previously either printed, signed with a wet signature, and digitised for publication, or signed electronically and saved in a publication friendly format. Both approaches create duplicate permanent records.

For the purposes of transferring permanent records to QSA, the preference is to transfer either the born digital records that are electronically signed or the digitised version of printed records that have a wet signature, provided they meet the requirements of the relevant Source Records Disposal Authorisation.

The master set of your council meeting proceedings are permanent value public records and must be retained in accordance with disposal authorisation 13.6.4 in the Local government sector retention and disposal schedule.

Further information is available regarding managing public records of meetings and conversations and implementing digital signatures.

Digitisation and Disposal of Source Records

Any records created incorporating a signature can be digitised (if not already) and the original source records can be disposed of, **provided** certain conditions are met under the new Source Records disposal authorisations.

For more information on these conditions, refer to resources available on the Dispose of Source Records webpage.

Key Takeaways

- No requirement to sign council meeting minutes either electronically or with wet signatures.
- Wet-signed records can be digitised, and the originals disposed of, if specific conditions are met.

Where can I find more information?



Please contact us via email at rkqueries@archives.qld.gov.au with any questions or Local government public records | For government | Queensland Government for further advice.

15 SUGGESTION BOX
16 MEETING CLOSE