



Proposed Hydrogen Plant & Expansion of Solar Farm

**Lot 6 (No. 131) & Lot 7 Northam-York Road,
Muluckine**

July 2023

Disclaimer:

This report has been prepared by Altus Planning solely for the benefit and use of the client. This document may not be reproduced or copied in whole or part without the express written consent of Altus Planning and the client.

Prepared for:

Infinite Green Energy Ltd

Prepared by:

Altus Planning

68 Canning Highway

SOUTH PERTH WA 6151

Phone: 9474 1449

contact@altusplan.com.au

www.altusplan.com.au

Document Version Control

Ver.	Date	Description	Author	Approved
1	21/02/23	Initial	BL	JA
2	06/07/23	Client Review	BL	JA
3	17/07/23	Lodgement	BL	JA

Contents

1.0	Executive Summary	1
2.0	Background	2
2.1	Purpose	2
2.2	Property Description & History	2
3.0	Proposal.....	4
3.1	Proposed Development.....	4
3.1.1	Development Overview.....	5
3.1.2	Hours of Operation.....	6
3.1.3	Staff & Visitors.....	6
3.1.4	Access, Parking & Traffic Management.....	6
3.1.5	Landscaping	7
3.1.6	Noise Management.....	8
3.1.7	Waste Management.....	8
3.1.8	Stormwater Management.....	8
4.0	Planning Considerations	9
4.1	Shire of Northam Local Planning Scheme No. 6.....	9
4.1.1	Zoning & Land Use.....	9
4.1.2	General Development Requirements	12
4.1.3	Setbacks.....	16
4.1.4	Car Parking.....	17
4.1.5	Matters to be Considered	17
4.2	Shire of Northam Local Planning Policy No. 2 – General Development Guidelines	24
4.3	State Planning Policy 3.7 – Planning in Bushfire Prone Areas.....	26
5.0	Conclusion.....	27

Appendices

Appendix 1	Certificates of Title	
Appendix 2	Project Brief	Infinite Green Energy
Appendix 3	Development Plans	David Wills and Associates
Appendix 4	Transport Impact Statement	Transcore
Appendix 5	Noise Impact Assessment	Herring Storer Acoustics
Appendix 6	Infrastructure Services Report	David Wills and Associates
Appendix 7	Stormwater Management Plan	David Wills and Associates
Appendix 8	Landscape Management Plan & 3D Perspectives	Infinite Green Energy
Appendix 9	Aboriginal Cultural Heritage Due Diligence Assessment	Sticks and Stones Cultural Resources Management Pty Ltd
Appendix 10	Environmental Management Plan	Infinite Green Energy
Appendix 11	Flora and Fauna Assessment	Mattiske Consulting Pty Ltd
Appendix 12	Bushfire Management Plan & Bushfire Risk Assessment and Management Report	Bushfire Prone Planning

1.0 Executive Summary

This application seeks planning approval via the Mid-West/Wheatbelt Joint Development Assessment Panel for a green hydrogen production plant at Lot 7 Northam-York Road, Muluckine which will be powered by an existing solar farm that already exists Lot 6 Northam-York Road and is also proposed to be expanded through this application. At capacity, the hydrogen plant will produce approximately 4 tonnes of gaseous hydrogen per day for use in the light and heavy vehicle transport sector.

The applicable land use activity of 'Renewable Energy Facility' is a discretionary use within the 'Rural' zoning that applies pursuant to the Shire of Northam's Local Planning Scheme No. 6 and the proposal has been assessed to be consistent with the relevant aims, objectives and provisions of the Scheme. The proposal is also considered to be consistent with the Shire's Local Planning Policy No. 2 – General Development Guidelines, as well as State Planning Policy 3.7 – Planning in Bushfire Prone Areas.

This application is supported by a number of technical documents which include, but are not limited to, Bushfire Management and Bushfire Risk Management Plans, an Environmental Impact Assessment, a Noise Impact Assessment, Stormwater Management Plan, Transport Impact Statement and a Visual Landscape Assessment, to demonstrate the development's suitability to the land and compatibility with the surrounding locality.

As part of the overall development, the Applicant will be undertaking upgrades to the existing rail crossing that is situated between the subject site and Northam-York Road, as well as constructing a left turn lane on Northam-York Road on approach to the crossing. These works are to be undertaken within respective rail and road reserves and will be subject to the approval processes of Arc Infrastructure and Main Roads WA.

The application has been assessed as consistent with all planning and relevant policy requirements and furthermore, will have no adverse amenity impacts on the adjoining properties or the broader surrounding locality.

2.0 Background

2.1 Purpose

The following submission has been prepared by Altus Planning to accompany an Application for Development Approval that is being lodged by Infinite Green Energy Ltd (**Applicant**) in relation to a proposed Hydrogen Plant at Lot 7 Northam-York Road, Muluckine (**Lot 7**) and the associated expansion of the approved Solar Farm at Lot 6 (No. 131) Northam-York Road, Muluckine (**Lot 6**).

Specifically, this application is being made under regulation 5(b) of the *Planning and Development (Development Assessment Panels) Regulations 2011* (**DAP Regulations**) as it is a development in a district outside of the district of the City of Perth and has an estimated cost greater than \$10 million.

2.2 Property Description & History

The subject lands can be more fully described as per Table 1.

Table 1: Lot Particulars

Lot	Plan	Volume	Folio	Area	Registered Proprietor(s)	Street Address
6	1164	2132	842	300.7246 ha	D.K. West Investments Pty Ltd, Dale Kenneth West	131 Northam-York Road
7	1164	2132	840	31.7006 ha	D.K. West Investments Pty Ltd	N/A

Refer to **Appendix 1 – Certificates of Title**.

The subject lands are located approximately 86km north-east of the Perth CBD and are located in the district of the Shire of Northam (**Shire**).

Specifically, Lot 7 is located between the Mortlock River and the East Perth to Kalgoorlie Rail Line, on the northern side of Northam-York Road in the locality of Muluckine. A review of historical aerial imagery would suggest that the site was previously utilised as an extractive industry up until 2010. Since then, the site has been rehabilitated into pastoral land and contour mapping available via the Water Corporation indicates that the land is relatively flat with ground level heights ranging from 150m to 155m AHD.

Vehicular access and egress to Northam-York Road is obtained via a driveway which traverses Lot 51 on Plan 10786, Lot 60 on Plan 2024 and Lot 28991 on Deposited Plan 217575, and includes crossing the East Perth to Kalgoorlie Rail Line. In this regard, the landowner is the road manager of the level crossing pursuant to the Interface Agreement with Arc Infrastructure and the Applicant has recently been included as an endorsed user.

To the immediate north of the Mortlock River is Lot 6 which is principally pastoral land and contains the 10 megawatt (**MW**) Northam Solar Farm that consists of 33,600 solar panels and is constructed over 25ha. This Solar Farm was approved by the Mid-West/Wheatbelt Joint Development Assessment Panel at its meeting held on 15 June 2017.

Lot 6 shares vehicular access and egress arrangements with Lot 7 via an easement.

In terms of the surrounding area, the subject lands are bound to the north, east, south and immediate west by other rural land parcels. Further to the west, on the southern side of Northam-York Road, exists the township of Northam.

Refer to aerial imagery at Figure 1.



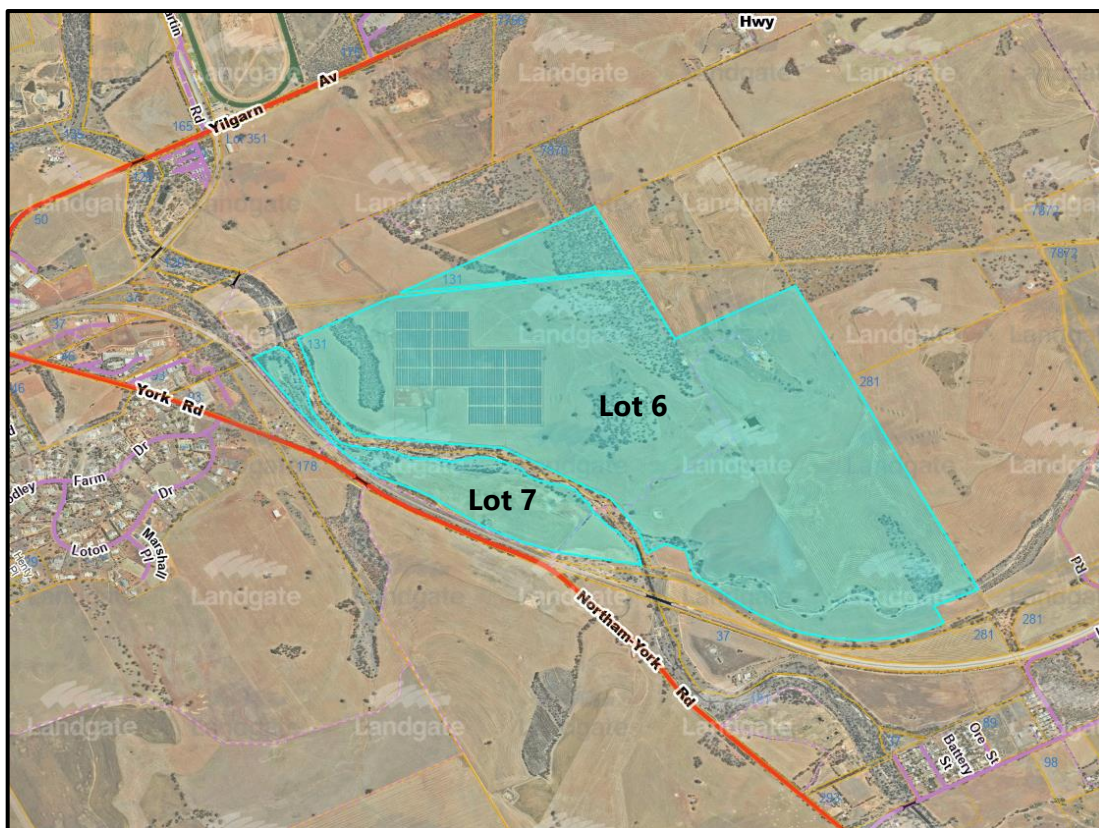


Figure 1: Site Location (Source: Landgate Map Viewer Plus 2023)

3.0 Proposal

3.1 Proposed Development

The proposed development seeks to produce green hydrogen by electrolysis.

Specifically, the proposal will utilise 10MW of electrolyzers whereby hydrogen will be compressed in gaseous form and transferred to trailer-mounted Multi Element Gas Containers (**MGECs**) for transportation to Hydrogen Refuelling Stations (**HRSS**). The hydrogen will be dispensed to multiple end users in the light and heavy vehicle transportation sector.

It is anticipated that the facility will have an output capacity of 4 tonnes per day.

The plant will utilise solar as its primary electrical supply source, including an addition of up to 13MW of additional solar panels to be located on Lots 6 and 7, being to the east and west of the proposed hydrogen plant and in the southwestern corner of the existing Northam Solar Farm on Lot 6.

Further information on the proposed development is outlined below and on **Appendix 2 – Project Brief**.

3.1.1 Development Overview

The hydrogen plant on Lot 7 will entail an approximate 4ha compound that will be bordered by a security fence, except for a car parking area and the portion of the driveway between the railway crossing and security hut/gate. Specifically, the fence will be a 1.8m high chain-link fence including a 600mm top on a 45-degree angle and three (3) barbed wires, consistent with the provisions of the Shire's *Fencing Local Law 2019*.

The development compound will include the following buildings and structures:

- Production area including:
 - 2x Containerised Electrolysers of 5MW each with an attached Electrolyser Cooling Unit (with maximum height to top vent pipe of approx. 6.925m);
 - 2x Hydrogen Buffer Vessel;
 - 3x Hydrogen Compressors;
 - 1x Air Cooler; and
 - 1x Discharge Water Holding Tank with Outlet Pump (Provisional).
- A 4m high integrated facilities building (raised 0.6m from ground level) comprising of four (4) compartments connected by a singular pitched roof:
 - Kitchen Room (approx. 12m length x 3m width);
 - Ablution & Change Room (approx. 12m length x 3m width);
 - First Aid Room & Office (approx. 12m length x 3m width); and
 - Control Room & Instrument Equipment Room (approx. 12m length x 3m width).
- H₂ Loading Terminal for 8x 20ft trailers (approx. 40m length x 18.5m width x 7.5m height).
- Truck Workshop Shed (approx. 24.6m length x 16.5m width x 6.7m height).
- 2x Electrical Buildings for Solar Expansion (approx. 12.5m length x 3.3m width x 3.3m height, elevated on piled foundations for a maximum height above ground of approx. 5m).
- Switch Room (approx. 12.5m length x 3.3m width x 3.3m height, elevated on piled foundations for a maximum height above ground of approx. 5m).
- 2x Fire Water Supply Tanks of 250,000L each and associated pumps.
- 3x Feed Water Storage Tanks of 50,000L each and associated pumps.

The proposed car parking area has been designed to accommodate 19 standard car bays, 2 ACROD bays and 3 motorcycle bays.

As part of the project, up to 13MW of additional solar panels are proposed to be installed to the immediate east and west of the hydrogen plant, as well as in the south-western corner of the existing solar farm on Lot 6 and will be connected to the hydrogen plant via an overhead connection. The exact placement of these solar panels is still subject to detailed design however will fit within the limits shown on the plans and supporting documentation which we submit is adequate and appropriate for the purposes of a planning decision.

Refer to **Appendix 3 – Development Plans**.

3.1.2 Hours of Operation

The hydrogen facility is expected to operate 24 hours per day, seven (7) days per week.

3.1.3 Staff & Visitors

The hydrogen facility will initially be operated as a manned facility. Within the first three (3) years of its operation, the facility is expected to transition to a semi-unmanned model with its day-to-day operation being overseen from a remote operations centre in Perth. Under this model, personnel would only attend for planning or corrective maintenance activities.

During the operational phase, it is expected that the plant will have two (2) full-time staff on-site and up to five (5) truck drivers collecting hydrogen from the site each day. As the operations progress, the number of truck drivers may increase to 25 per day.

The facility will not be open to the public and therefore visitors to the site are likely to be limited to maintenance.

3.1.4 Access, Parking & Traffic Management

During the approximate 18-month construction phase following approval, traffic generation is anticipated to amount to a two-way total of 30-40 vehicles per day (**vpd**), with an estimated 30% of these being heavy vehicle movements in the busiest months of the construction period.

Thereafter, during the operational phase, traffic generation associated with the proposed hydrogen facility will be relatively low at a two-way total of 24 to 26 vpd, comprising of five (5) light vehicles and 7 to 8 trucks.

Access to Lot 7 is to be gained via the existing crossover, rail crossing and driveway/access route connecting to Northam-York Road, with a number of upgrades proposed to facilitate the development. These include:

- The installation of boom barriers and flashing lights at the level crossing.
- Extending the sealed road section across the railway crossing at least 50m north of the railway crossing and widening to a sealed width of 9.5m to accommodate simultaneous two-way truck traffic.
- The construction of a left turn lane on Northam-York Road on approach to the level crossing to provide safe storage space.

Note: These upgrades are subject to relevant approvals/consent being sought from Main Roads WA and Arc Infrastructure that can only be finalised once planning consent has been granted.

On advice from Main Roads WA, vehicles longer than 20m in length will not be permitted due to the storage distance between the railway line and Northam-York Road for vehicles turning right out of the access road.

Unauthorised access to the site is to be prevented through the placement of security fencing and a security gate.

As mentioned, a car parking area is proposed just outside the security fence/gate which comprises of 19 standard car bays, 2 ACROD bays and 3 motorcycle bays to accommodate staff and visitor parking.

All parking and access areas have been designed to enable access to and egress from the site in forward gear, including a looped/circular trucking route within the compound.

Refer to **Appendix 4 – Transport Impact Statement**.

3.1.5 Landscaping

Screening vegetation is proposed along the southern and eastern perimeter of the proposed development area on Lot 7, that is between the security fence and the southern (front) lot boundary, and between the security fence and the driveway/access route.

The species used will be selected in consultation with the Shire.

3.1.6 Noise Management

Based on a preliminary assessment of the noise impact of the proposed development, noise emissions have been assumed to be 85dB(A) at a distance of 1m from each of the containerised pieces of equipment.

On this basis, calculated noise level emissions associated with the proposed development have been found to be compliant with the Assigned Noise Levels stipulated by the *Environmental Protection (Noise) Regulations 1997* at all times and therefore, no specific noise amelioration measures are required.

Refer to **Appendix 5 – Noise Impact Assessment**.

3.1.7 Waste Management

The project is estimated to consume approximately 70m³ of water per day and produce approximately 20m³ of 'disposal' water. Such disposal water is proposed to be used in combination with stormwater as irrigation for screening vegetation around the plant and to overflow into nutrient stripping basins. These basins will have an emergency overflow into the Mortlock River for major storm events.

Given there is no reticulated sewerage service, the proposal will be serviced via an on-site effluent disposal system, approved by the Department of Health, and comprising of an aerobic treatment unit, sewer pump unit and leach drains. Such a system will be in accordance with the applicable Guidelines and the Government Sewerage Policy 2019.

Refer to **Appendix 6 – Infrastructure Servicing Report**.

3.1.8 Stormwater Management

Stormwater run-off from the plant area will be managed by three (3) stormwater basins, drainage channels and pipes in order to manage a 1 in 1 year, 1-hour storm event. The combined volume of the basins is approximately 2,050m³ which is approximately 200% greater than the design storm's resulting volume.

Storms greater than a 1 in 1 year, 1-hour event will overtop the basins in a controlled manner and flow into the Mortlock River, matching the pre-development conditions.

A minimum finished floor level (**FFL**) of 154.0m AHD is proposed for all accessible buildings so as to be 0.5m above the predicted Mortlock River 1 in 100-year floor level of 153.5m AHD.

Accordingly, all stormwaters will be adequately dealt with on-site.

Refer to **Appendix 7 – Stormwater Management Plan**.

4.0 Planning Considerations

4.1 Shire of Northam Local Planning Scheme No. 6

4.1.1 Zoning & Land Use

Both Lots 6 & 7 are zoned 'Rural' pursuant to the Shire's Local Planning Scheme No. 6 (**LPS6** or **Scheme**). A 'Railway' reserve abuts Lot 7 along its southern boundary.

Refer to Figure 2.

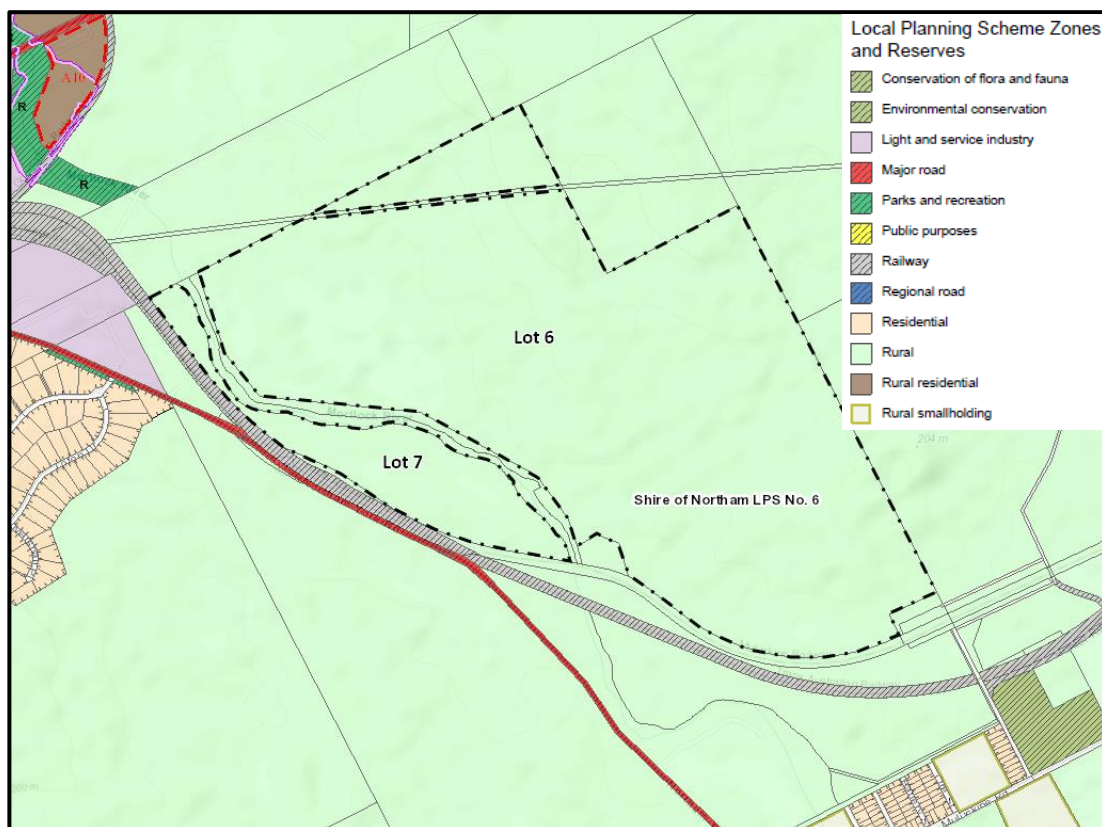


Figure 2: LPS6 Zoning Extract (Source: PlanWA 2023)

The proposed development can be classified as a 'Renewable Energy Facility' which is defined in Schedule 1 of LPS6 as follows:

"renewable energy facility" means premises used to generate energy from a renewable energy source and includes any building or other structure used in, or relating to, the generation of energy by a renewable resource. It does not include renewable energy electricity generation where the energy produced principally supplies a domestic and/or business premises and any on selling to the grid is secondary.

The 'Renewable Energy Facility' land use classification was introduced to LPS6 via Amendment 16, gazetted on 30 August 2022.

Pursuant to Table 1: Zoning Table of LPS6, the land use of 'Renewable Energy Facility' is a class 'A' use within the 'Rural' zone which, in accordance with clause 3.3.2, means:

the use is not permitted unless the local government has exercised its discretion by granting development approval after giving special notice in accordance with clause 64 of the deemed provisions;

The aims of the Scheme are set out at clause 1.6 of LPS6 and includes the following:

(j) promote ecologically sustainable land use and development;

The proposed development is considered to be consistent with the aforementioned aim.

As for the objectives of the Rural zone, these are set out in clause 3.2.8 of LPS6 as follows:

- *To provide for horticulture, extensive and intensive agriculture, agroforestry, local services and industries, extractive industries and tourist uses which ensure conservation of landscape qualities in accordance with the capability of the land.*
- *To protect the potential of agricultural land for primary production and to preserve the landscape and character of the rural area.*
- *To control the fragmentation of broad-acre farming properties through the process of subdivision.*
- *To protect land from land degradation and further loss of biodiversity by:*
 - (i) Minimising the clearing of remnant vegetation and encouraging the protection of existing remnant vegetation;*
 - (ii) Encouraging the development of and the protection of corridors of native vegetation;*
 - (iii) Encouraging the development of environmentally acceptable surface and sub-surface drainage works; and*
 - (iv) Encouraging rehabilitation of salt affected land.*

Lot 7 is not actively being used for broadacre farming or any other form of agricultural use, and seemingly has not been used as such since at least the turn of the century. Whilst the expansion to the solar farm on Lot 6 is to occur on previously cleared, grazed and cropped paddocks.

Furthermore, the proposal is not considered to be at odds with the landscape and character of the area, having particular regard to the existing solar farm development

on Lot 6, as well as the height of the proposed development and the proposed screening vegetation. Refer to **Appendix 8 – Landscape Management Plan & 3D Perspectives**.

Accordingly, it is submitted that the proposal is not contrary with the objectives for the 'Rural' zone.

4.1.2 General Development Requirements

Part 4 of LPS6 sets out the general development requirements which apply to land use and development within the Scheme Area, as well as specific requirements which apply to particular uses and forms of development.

Table 2 below provides an assessment of the applicable requirements as they relate to the 'Rural' zone and the proposed development.

Table 2: Assessment of General Development Requirements from LPS6

Requirement	Response
Site & Development Requirements (clause 4.5, Table 2)	
Front Setback 25m	<p>Variation Sought –</p> <p>Whilst the 1.8m high security fence around the hydrogen facility is setback 17.9m from the front boundary at its closest point, the nearest structure (being the Kitchen) is setback approximately 30m and therefore complies.</p> <p>As for the solar farm extension to the west of Lot 7, the exact panel sizes are yet to be determined however the footprint has been shown to have a varying setback of approximately 32m to 4m owing to the irregularity of the front boundary where it abuts the railway reserve.</p> <p>Whilst the solar farm extension to the east of Lot 7 has been shown to have a setback of approximately 15m.</p> <p>This is discussed further in Section 4.1.3 of this Report.</p>
Rear Setback 20m	Variation Sought –

	<p>A minimum rear setback of 62.1m is achieved to the security fence of the hydrogen plant.</p> <p>As for the solar farm extension on Lot 7, the eastern component has a minimum setback of approximately 3.5m, increasing to a maximum of approximately 33m. Whilst the western component is shown to have a minimum setback of approximately 14m, increasing to approximately 78m. These varying setbacks are owing to the irregularity of the rear boundary where it abuts the Mortlock River.</p> <p>This is discussed further in Section 4.1.3 of this Report.</p> <p>The solar farm expansion on Lot 6 has a rear setback of approximately 75m.</p>
<p>Side Setbacks 20m</p>	<p>Complies –</p> <p>The side setbacks exceed 20m, with the nearest side setback being the eastern component of the solar farm expansion on Lot 7 which sits at approximately 36m.</p>
Maximum Building Height (clause 4.10)	
<p>4.10.1 No site shall be developed or building constructed to contain more than two storeys or exceed 9m in height measured to the highest proportion of the building from mean natural ground level...</p>	<p>Complies –</p> <p>The tallest structure on-site will be the Truck Loading Terminal which will have a top vent pipe height of 7.451m above ground level.</p> <p>For reference:</p> <ul style="list-style-type: none"> • The electrolyser buildings will have a top vent pipe height of 6.925m above ground level. • The truck workshop will have a maximum height of 6.71m above ground level. • The water tanks will have a maximum height of 5.625m above ground level. • The electrical building and switch room will have a maximum height of 5.088m above ground level.

	<ul style="list-style-type: none"> The office building will have a maximum height of 4.597m above ground level.
Car Parking (clause 4.13, Table 3)	
Other Uses Not Listed As determined by the local government after consideration of the parking needs generated by the use.	Refer to Section 4.1.4 of this Report.
Traffic Entrances (clause 4.14)	
4.14.3 Where access to a lot abutting a Major or Regional Road reserve is available only from that road, parking, servicing, and circulation areas within the lot shall be designed and constructed so as to allow unhindered movement within the lot and to enable vehicles to enter and leave the site in forward gear...	Complies – The proposed design of the parking and circulation areas enables all vehicles to enter and leave the site into forward gear.
Access for Loading & Unloading Vehicle (clause 4.15)	
4.16(a) No land shall be used or buildings developed unless provision is made for the purpose of loading or unloading goods or materials to the satisfaction of the local government.	Complies – A loading terminal has been proposed at the eastern end of the proposed hydrogen facility.
4.16(b) Servicing vehicles to enter the street in a forward direction.	Complies – The proposed design of the parking and circulation areas enables all vehicles to enter and leave the site into forward gear.
Use of Land Between the Street Alignment and Front Building Setback (clause 4.19)	
A person shall not use the land between the street alignment and the front building setback as prescribed in Table 2... except for one or more of the following purposes – a) gardens and other landscaping; b) access driveways; and c) vehicle parking to the satisfaction of the local government.	Variation Sought – The development and use of the front setback area of the hydrogen plant is proposed to be restricted to a 1.8m high security fence which sits behind screening vegetation. As mentioned, the solar farm expansion on Lot 7 (whilst arguably not 'buildings') does encroach on the front setback requirements however the lot is sandwiched between the railway reserve and the Mortlock River and therefore does not have direct road frontage. This is discussed further in Section 4.1.3 of this Report.

Amenity of Non-Residential Development (clause 4.31)	
<p>Amenity of non-residential development shall generally be in accordance with the following:</p> <p>a) the form and scale of development is to be compatible with surrounding land uses;</p>	<p>Complies –</p> <p>Acknowledging the site's siting within the Rural zone and its proximity to the Northam townsite and Northam-York Road, consideration has been given to ensuring a 'rural' appearance. This has been achieved through the use of rural-like buildings and structures, vegetative screening and keeping under the maximum height of development to 9m. Additionally, the proposed expansion of the existing Northam Solar Farm on Lot 6 and the further panels on Lot 7 is in keeping with the existing development on Lot 6.</p>
<p>b) buildings are to have coordinated or complementary materials, colours and styles reflective of the character of the locality;</p>	<p>Complies –</p> <p>Further to the above, a rural appearance has been adopted for the proposed buildings and structures through the use of sheds, as well as constructing the office buildings with pitched colorbond roofs and colorbond corrugated wall cladding.</p>
<p>c) visual impacts are to be minimised by the use of vegetation screening and tree retention.</p>	<p>Complies –</p> <p>Vegetation is proposed along the southern and eastern boundaries of the proposed hydrogen facility to screen the development from the closest resident located 0.9km to the west of the plant site, adjacent to the Northam townsite. The additional solar array placement will be screened by the existing natural vegetation that already exists on-site and within the adjoining reserves.</p> <p>In terms of vegetation removal, all development is principally located on previously cleared land although one (1) tree is proposed to be removed where the crossover meets Northam-York Road which is to allow for road works and for the safety of traffic accessing the plant, whilst a further one (1) or two (2) trees may need to be pruned or removed along the river fringe to accommodate the overhead connection to the solar farm on Lot 6.</p>

4.1.3 Setbacks

The above table has identified that portions of the development require minor variations to the minimum front and rear setback requirements in some locations. By extension, portions of the proposed development are inconsistent with clause 4.19 in relation to the use of land between the street alignment and the front setback line.

Notwithstanding, clause 4.6.1 of LPS6 provides the local government with the discretion to approve an application that does not comply with a standard or requirement prescribed by the Scheme. Specifically, clauses 4.6.2 and 4.6.3 state:

4.6.2 In considering an application for development approval under this clause, where, in the opinion of the local government, the variation is likely to affect any owners or occupiers in the general locality or adjoining the site which is the subject of consideration for the variation, the local government is to –

- a) consult the affected parties by following one or more of the provisions for advertising uses under clause 64 of the deemed provisions; and*
- b) have regard to any expressed views prior to making its determination to grant the variation.*

4.6.3 The power conferred by this clause may only be exercised if the local government is satisfied that –

- a) approval of the proposed development would be appropriate having regard to the criteria set out in clause 67 of the deemed provisions; and*
- b) the non-compliance will not have an adverse effect upon the occupiers or users of the development, the inhabitants of the locality or the likely future development of the locality.*

In relation to subclause 4.6.3a) above, an assessment against the relevant criteria set out in clause 67 of the Deemed Provisions is provided at Section 4.1.5 of this Report.

As for subclause 4.6.3b), the siting of Lot 7 is such that the front and rear boundaries that are subject to the non-compliant setbacks do not immediately adjoin public roads

or other freehold lots, rather the boundaries in question about a railway reserve (front or southern boundary) and the Mortlock River (rear or northern boundary).

When considering the above, the proposed solar farm expansion on Lot 7 achieves a minimum setback distance in excess of 65m to the Northam-York Road reserve boundary and a minimum setback distance in excess of 117m to the closest freehold lot, being Lot 6 which is already developed as a solar farm and forms part of this application. In addition, vegetation exists both between Northam-York Road and Lot 7, as well as between Lot 6 and 7 which will contribute to screening the development.

Accordingly, the proposed variations to front and rear setbacks (and use of front setback areas) are not considered to have any adverse impact on the surrounding locality and therefore warrants the exercise of discretion.

4.1.4 Car Parking

As identified in the above table, LPS6 does not prescribe a minimum parking requirement for Renewable Energy Facilities and as such, is to be determined with consideration of the parking needs generated by the use.

In this regard, the hydrogen facility will initially be operated as a manned facility, and it is intended that within the first three (3) years of operation that the facility will transition to a broadly unmanned model with its day-to-day operations being overseen remotely. During the initial manned phase, it is anticipated that staff numbers will be low (approximately 2 on-site and 5 truck drivers collecting hydrogen). Additionally, the facility will not be open to the public and as such, visitors will be limited.

Accordingly, the 19 car parking bays proposed are deemed sufficient to cater for the needs of the proposed use. Provision has also been made for two (2) ACROD bays and three (3) motorcycle bays.

4.1.5 Matters to be Considered

Pursuant to regulation 10(4) of the *Planning and Development (Local Planning Schemes) Regulations 2015 (LPS Regulations)*, the provisions in Schedule 2 are deemed provisions that are applicable to all local planning schemes, regardless of whether the provisions are incorporated into the scheme text.

Specifically, clause 67(2) of the Deemed Provisions outline the matters to be given due regard, where relevant, in considering an application for development approval. An assessment of the proposal against these considerations is provided in Table 3 below.

Table 3: Assessment of Clause 67(2) Matters to be Considered

Matter to be Considered	Response
(a) the aims and provisions of the Scheme and any other local planning scheme operating within the Scheme area;	As outlined in this preceding sections, the subject lands are zoned 'Rural' where the proposed land use of 'Renewable Energy Facility' is capable of approval at the local government's discretion. The proposal is considered to be in keeping with the aims of the Scheme and the zone objectives, whilst complying with the applicable provisions relating to development.
(b) the requirements of orderly and proper planning including any proposed local planning scheme or amendment to this Scheme that has been advertised under the Planning and Development (Local Planning Schemes) Regulations 2015 or any other proposed planning instrument that the local government is seriously considering adopting or approving;	As per the above, the proposal is consistent with the operative LPS6 and at the time of writing, there are no known proposed schemes, amendments or planning instruments that may be applicable.
(c) any approved State planning policy;	The proposal is supported by a Bushfire Management Plan (BMP) that has been prepared to satisfy the requirements of State Planning Policy 3.7 – Planning in Bushfire Prone Areas (SPP3.7). Refer to Section 4.3 of this Report.
(g) any local planning policy for the Scheme area;	The proposal has been prepared cognisant of the Shire's Local Planning Policy No. 2 – General Development Guidelines (LPP2). Refer to Section 4.2 of this Report.
(l) the effect of the proposal on the cultural heritage significance of the area in which the development is located;	This application has given due consideration to the <i>Aboriginal Cultural Heritage Act 2021</i> (ACHA) which came into effect on 1 July 2023 and is supported by a Due Diligence Assessment (DDA) in accordance with the Aboriginal Cultural Heritage Management Code (ACHMC).

	<p>This DDA establishes that, based on a desktop search on the Aboriginal Cultural Heritage Inquiry System (ACHIS), no Aboriginal heritage sites are registered within Lots 6 or 7. Furthermore, the proposed works are located on a previously disturbed quarry and the works are contained within the previous disturbance footprint. Accordingly, it has been determined that the proposed development is an 'Exempt General Activity' and therefore, no further action is required.</p> <p>Refer to Appendix 9 – Aboriginal Cultural Heritage Due Diligence Assessment.</p> <p>A desktop search has also been undertaken on the inHerit database and similarly returned no results for the subject lands.</p>
<p>(m) the compatibility of the development with its setting, including –</p> <ul style="list-style-type: none"> (i) the compatibility of the development with the desired future character of its setting; and (ii) the relationship of the development to development on adjoining land or on other land in the locality including, but not limited to, the likely height, bulk, scale, orientation and appearance of the development; 	<p>The proposed hydrogen facility is to be undertaken on previously cleared land and utilising the solar farm that exists on the northern side of Mortlock River, being Lot 6.</p> <p>Cognisant of its proximity to the Northam townsite, the scale and design of all buildings and structures seeks to represent a 'rural' style of development in keeping with the locality's current and future character.</p> <p>Furthermore, the following management and mitigation measures (as specified in Section 7 of the Landscape Management Plan) are proposed to be adopted to minimise adverse visual amenity impacts:</p> <ul style="list-style-type: none"> • Establish of vegetation screens to shield the plant and infrastructure from views from the closest resident 0.9km to the west of the project adjacent to the Northam townsite; • The new solar array placements will be situated to utilise the natural vegetation screening in this area;

	<ul style="list-style-type: none"> • Establish and maintain a site 'southern boundary' visual screen to reflect native species present within the vegetation community types of the Shire; • Associated modelling visuals indicate the approximate locations proposed during vegetation establishment, with species selected based on identification during field surveys as outlined above, and • Monitor areas undergoing vegetation establishment/rehabilitation annually and implement corrective management actions if required.
<p>(n) the amenity of the locality including the following –</p> <ul style="list-style-type: none"> (i) environmental impacts of the development; (ii) the character of the locality; (iii) social impacts of the development; 	<p>In terms of environmental impacts, it is reiterated that the proposed development is to be undertaken on previously cleared and degraded land, with vegetation removal limited to one (1) tree for the required access arrangements and the pruning or removal of up to two (2) trees to allow for an overhead connection to the existing solar farm on Lot 6. This removal/modification of vegetation is to be offset by the planting of screening vegetation along the southern and eastern perimeter of the hydrogen facility.</p> <p>In addition, the principles and design of the Stormwater Management Plan ensures that the proposal does not result in any adverse impacts on the abutting Mortlock River.</p> <p>The Environmental Management Plan (EMP) has identified that dust emissions may be generated from construction and operational activities, as well as air pollutants also during construction and operational activities including electrolysis. These emissions may include carbon monoxide, nitrogen oxides and nitrogen. The EMP specifies objectives, targets, key performance indicators, as well as management, monitoring and remedial actions to avoid emissions or reduce the</p>

	<p>levels in the ambient air to acceptable and safe levels.</p> <p>Refer to Appendix 10 – Environmental Management Plan.</p> <p>As for the character of locality, it is also reiterated that the style, height and scale of all buildings and structures have been chosen to reflect the rural character of the locality, whilst the screening vegetation further mitigates any visual impact.</p> <p>No social impacts are foreseen as a result of the proposed development.</p>
<p>(o) the likely effect of the development on the natural environment or water resources and any means that are proposed to protect or to mitigate impacts on the natural environment or the water resource;</p>	<p>Being a 'green' hydrogen production plant, the proposal seeks to utilise solar power and re-use water to minimise environmental impact, whilst creating a renewable energy source.</p> <p>As mentioned, the EMP outlines important management measures for dust and other air pollutants to avoid emissions or reduce the levels in the ambient air to acceptable levels.</p> <p>In terms of the development footprint, all additional works are principally located on previously cleared areas, with the only proposed disturbance being the overhead power lines to connect the proposed development to the existing solar farm on Lot 6. This may require the pruning or removal of one (1) or two (2) trees along the fringes of the Mortlock River. A further tree at the location of the crossover to Northam-York Road will require removal to achieve the proposed road upgrades and improve road safety.</p> <p>The proposal is therefore considered to have a negligible impact on the environment.</p>

	<p>Refer to Appendix 11 – Flora and Fauna Assessment.</p> <p>The Stormwater Management Plan ensures that there are no adverse impacts on the Mortlock River during both the construction and operational phases of the proposed development.</p>
<p>(p) whether adequate provision has been made for the landscaping of the land to which the application relates and whether any trees or other vegetation on the land should be preserved;</p>	<p>The proposal requires the removal of one (1) existing tree where the crossover meets Northam-York Road, which is required as part of the related road upgrades. One (1) or two (2) trees along the fringes of the Mortlock River may be required to accommodate the overhead power extension to the existing solar farm.</p> <p>Additional vegetation is proposed in the way of screening along the southern and eastern boundaries of the hydrogen facility.</p>
<p>(q) the suitability of the land for the development taking into account the possible risk of flooding, tidal inundation, subsidence, landslip, bush fire, soil erosion, land degradation or any other risk;</p>	<p>In order to protect the accessible buildings from flooding of the Mortlock River, the FFL of all habitable buildings will be set at a minimum of 154.0m AHD. This is 0.5m AHD above the predicted 1 in 100-year flood level and consistent with clause 5.2.3.4 of LPS6, notwithstanding that the subject lands are not contained within 'SCA 1 – Avon & Mortlock Rivers Special Control Area'.</p> <p>As for bushfire, it is reiterated that the proposal is supported by a BMP which demonstrates compliance with SPP3.7.</p>
<p>(s) the adequacy of –</p> <ul style="list-style-type: none"> (i) the proposed means of access to and egress from the site; and (ii) arrangements for the loading, unloading, manoeuvring and parking of vehicles 	<p>A single point of vehicular access is proposed via the existing railway crossing and crossover to Northam-York Road which the Applicant has access rights to pursuant to the User Agreement with Arc Infrastructure.</p> <p>To facilitate the proposed hydrogen facility, the Applicant is proposing to fund the installation of boom barriers and flashing lights at the level crossing and will not permit vehicles longer than 20m in length (as</p>

	<p>advised by Main Roads WA) due to the storage distance between the railway line and Northam-York Road for vehicles turning right out of the access road. The sealed road section across the railway crossing is also proposed to extend at least 50m north of the railway crossing, with a 9.5m sealed width to accommodate simultaneous two-way truck traffic.</p> <p>The Applicant is also proposing the construction of a left turn lane on Northam-York Road on approach to the level crossing to provide safe storage space.</p> <p>Having regard to the above, the TIS has concluded that traffic-related issues should not form an impediment to the approval of the proposed development.</p> <p>As for the arrangements for the loading, unloading, manoeuvring and parking of vehicles. It is reiterated that the design of proposal has made adequate provision for these matters through the provision of vehicle parking to accommodate the demand of staff and visitors, as well as proposing a looped circulation area to enable all vehicles to enter and exit the site in forward gear.</p>
<p>(t) the amount of traffic likely to be generated by the development, particularly in relation to the capacity of the road system in the locality and the probable effect on traffic flow and safety;</p>	<p>Traffic generation associated with the proposed hydrogen facility will be relatively low at only 30 to 40 vpd during the construction phase and 24 to 26 vpd during the subsequent operational phase. The resulting additional vehicle trips per hour (vph) during the development's peak is significantly less than the 100 vph threshold and as such will not be of significant impact to the surrounding road network.</p> <p>Furthermore, as safety is a very important consideration, appropriate upgrading of the existing railway crossing and access road</p>

	intersection on the Northam – York Road is proposed.
(u) the availability and adequacy for the development of the following – (i) public transport services; (ii) public utility services; (iii) storage, management and collection of waste; (iv) access for pedestrians and cyclists (including end of trip storage, toilet and shower facilities); (v) access by older people and people with disability;	<p>Due to the nature and location of the proposal, consideration of proximity to public transport and access for pedestrians, cyclists, older people and people with disability is not considered warranted.</p> <p>In relation to public utility services, all water supplied to the facility shall be by connection to Water Corporation’s scheme water system at the intersection of Northam-York Road. A potable water storage tank and pump set shall also be provided to store two days of water consumption to cover periods of maintenance on the water supply.</p> <p>As for sewer, there is no reticulated sewerage service and as such, the proposal will be serviced via an on-site effluent disposal system comprising of a septic tank, sewer pump unit and leach drains.</p> <p>Power for the proposed hydrogen facility is to be sourced from the existing solar farm at Lot 6 and from a future expansion of the solar farm, including on Lot 7.</p>

4.2 Shire of Northam Local Planning Policy No. 2 – General Development Guidelines

The Shire’s LPP2 specifies general guidelines for development and site works. Table 4 below provides an assessment of the relevant guidelines that are applicable to the proposed development.

Table 4: Assessment of applicable development guidelines

Guideline	Response
General Development Guidelines	
1.1 No building shall be so constructed, finished or left unfinished so that its external appearance would, in the opinion of the Shire, create glare or in any other way	Complies – As mentioned, the proposed hydrogen facility is seeking to utilise rural-style buildings and structures as well as building

whatsoever significantly detract from the amenity of the locality. All premises shall be so used and maintained so as to preserve the local amenity to the satisfaction of the Shire.	materials (e.g. colorbond) which is considered in keeping with the rural locality.
Water Tanks	
3.1 Rainwater tanks are the preferred method of stormwater management. Any overflow from a rainwater tank must be managed on-site so that there is no discharge onto the adjoining properties. The use of soakwells for the management of stormwater is not permitted except to manage overflow from a suitably sized rainwater tank.	Alternative Proposed – Stormwater detention basins are proposed to manage a 1 in 1 year, 1-hour storm event. Any greater storm events will overtop the basins in a controlled manner and flow into the Mortlock River, matching the pre-development conditions.
3.5 In bushfire prone areas, a water tank with a minimum capacity of 10,000 litres fitted with a 55mm cam-lock fitting with a full flow valve to enable connection to firefighting appliances may be required.	Complies – 2x fire water supply tanks of 250,000L each are proposed.

As per the above table, the proposed hydrogen facility seeks an alternative to the preferred method of stormwater management specified by LPP2.

Pursuant to clause 3(5) of the Deemed Provisions, the local government is to have 'regard' to each relevant local planning policy in making its determination and therefore LPP2 is not considered binding.

The objectives of LPP2 are stated in the policy as follows:

- (a) Ensure that no development adversely impacts upon the amenity of the area or upon vistas from public roads;*
- (b) Provide certainty for landowners of the requirements within the Shire and guidance to the Shire's officers by ensuring that all development issues are considered when applying for planning approval and that the rural nature of the Shire is maintained; and*
- (c) Limit the impact of development by specifying general guidelines for development and site works.*

In relation to stormwater management, it is objectives (b) and (c) that are considered to be of relevance.

Having regard to the principles and methodology of the Stormwater Management Plan, 1 in 1 year storm events are to be detained on-site and for any greater events, the catchment run-off is to be managed to pre-development levels. Specifically, all stormwater run-off from the plant area is to be polished (purified) in planted stormwater basins before flowing into the river. These basins will be heavily vegetated to remove nutrients from the run-off and to ensure quality of the stormwater discharge into the river body.

Accordingly, it is submitted that the proposal has adequately considered the issue of stormwater management and the proposed management regime will limit the impact of the development on the environment, therefore being consistent with the relevant objectives of LPP2.

4.3 State Planning Policy 3.7 – Planning in Bushfire Prone Areas

In accordance with the Map of Bush Fire Prone Areas prepared by the Office of Bushfire Risk Management, the subject lands are partly located within a State designated bushfire prone area, as depicted in Figure 3.

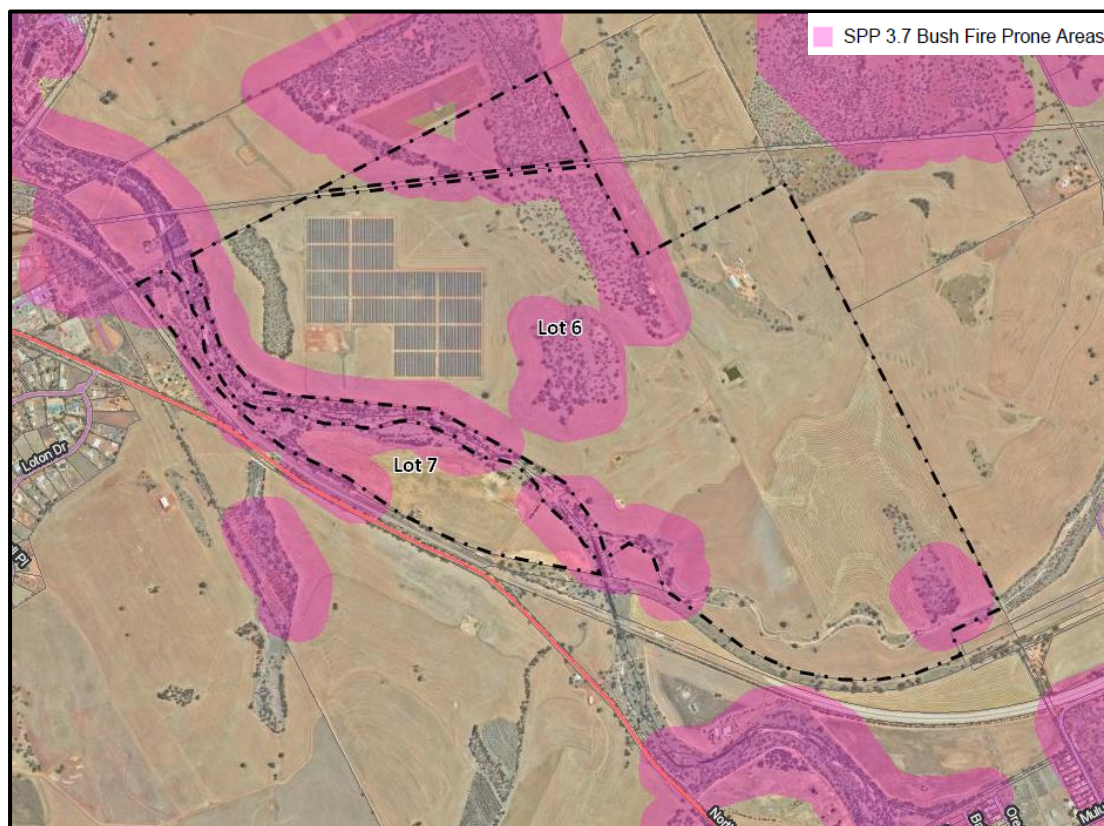


Figure 3: Bushfire Prone Area Mapping Extract (Source: PlanWA 2023)

As portions of the solar farm expansion on Lot 7 are partially located in the designated bushfire prone areas, a BMP has been prepared by Bushfire Prone Planning.

The BMP demonstrates that the proposed development will be fully compliant with the applicable 'Acceptable Solutions' of the Bushfire Protection Criteria contained within the associated Guidelines, and is therefore compliant with SPP3.7.

Furthermore, as the proposal is considered a 'high-risk' land use, a Bushfire Risk Assessment & Management Report has also been prepared, as suggested by SPP3.7. This management plan provides recommendations for incorporation into a site operations emergency plan to ensure that the facility is operated safely having regard to its bushfire risk.

Refer to **Appendix 12 – Bushfire Management Plan & Bushfire Risk Assessment and Management Report.**

5.0 Conclusion

This application seeks approval for a green hydrogen production plant capable of producing 4 tonnes of gaseous hydrogen per day for use in the light and heavy vehicle transportation sector.

Being a 'green' energy project, the proposal seeks to utilise the existing solar farm on Lot 6 to power the plant with an additional 13MW of panels distributed over both Lots 6 and 7. In addition, whilst water is intended to be provided via the Water Corporation's potable water supply, the disposable water produced by the plant is to be re-used on-site as part of the cooling system and in combination with collected stormwater for irrigation of screening vegetation.

The proposed development is classifiable as a 'Renewable Energy Facility' which is a discretionary use within the 'Rural' zone and for the reasons outlined in this report, the proposal is considered consistent with the relevant objectives and provisions of the applicable planning framework which includes the Scheme, as well as local and State planning policies. Specifically, it is considered that the proposal represents a development that, whilst not traditionally associated with a rural environment, is now contemplated by LPS6, and will nevertheless be largely screened from view of Northam-York Road to ensure that the proposal does not adversely impact on the character or amenity of the locality.

For all these reasons, the proposed development is considered to warrant approval.

We trust that this information is to your satisfaction and welcome the opportunity to review any draft suite of conditions of approval (on a without prejudice basis) prior to any determination, for the Applicant's consideration. We otherwise look forward to a prompt and favourable determination.

Altus Planning



Attachment 1

Certificates of Title



Attachment 2

Project Brief



Attachment 3

Development Plans



Attachment 4

Transport Impact Statement



Attachment 5

Noise Impact Assessment



Attachment 6

Infrastructure Services Report



Attachment 7

Stormwater Management Plan



Attachment 8

Landscape Management Plan & 3D Perspectives



Attachment 9

Aboriginal Cultural Heritage Due Diligence Assessment



Attachment 10

Environmental Management Plan



Attachment 11

Flora & Fauna Assessment



Attachment 12

Bushfire Management Plan & Bushfire Risk Assessment and Management Report

