

# **GUIDELINES**

For the preparation of an

# **ENVIRONMENTAL IMPACT STATEMENT**

**Whalers Way Orbital Launch Complex**

SouthernLaunch.Space Pty Ltd

23 July 2020

State Planning Commission

Department of Planning, Transport and Infrastructure

[www.saplanningportal.sa.gov.au](http://www.saplanningportal.sa.gov.au)

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## 1. BACKGROUND

On 29 August 2019, the Minister for Planning ('the Minister') declared the Whalers Way Orbital Launch Complex to be assessed as a Major Development pursuant to Section 46 of the *Development Act 1993* (the Act).

Section 46 of the Act ensures that matters affecting the environment, the community or the economy to a significant extent, are fully examined and taken into account in the assessment of this proposal.

The State Planning Commission (SPC) is responsible for setting the level of assessment required (Environmental Impact Statement, Public Environmental Report or Development Report) and provides Guidelines for the preparation of the assessment document.

Due to the nature of proposal, the need for a broader assessment and investigation of the following is required, specifically:

- The strategic and economic benefits of establishing an Orbital Launch Complex.
- Impact upon the Biodiversity Area of Jussieu Peninsula to Coffin Bay Peninsula, which contains a large tract of remnant native vegetation and fauna habitat, currently managed under a Native Vegetation Heritage Agreement
- Impacts on the Thorny Passage Marine Park and the broader marine environment from the disposal of spent (discarded) launch vehicles.
- Impact upon threatened fauna and flora species.
- Impact on sites, objects and areas of significance to Aboriginal people.
- Noise impacts on sensitive receivers, including people, terrestrial species and marine mammals.
- Impacts to air quality (amenity and public health) in the region due to construction and operational activities, including launch combustion and any on-ground fuel burning.
- Compliance with International obligations, National legal obligations and consideration of National security, information, equipment and processes (including sea dumping).
- Quantified risk and hazard analysis, including proposed prescribed activities, public and workplace safety, emergency response strategies and requirement for restricted and exclusion zones.

*(Nb. sensitive information will not be released in the publically available EIS)*

The Proponent concluded that there was a high degree of certainty that the application does not involve a 'controlled action' and therefore has not been formally referred to the Commonwealth Department of Agriculture, Water and the Environment to seek approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The State Planning Commission has determined, subject to consideration of section 63 of the *Development Regulations 2008* that the proposal will be subject to the processes of an **Environmental Impact Statement** (EIS), as set out in Section 46B of the Act. An EIS was considered appropriate due to the nature and scale of the issues to be investigated.

The *Development Act 1993* requires that an EIS be publically exhibited for a period of at least 30 business days and for a public meeting to be held during this period.

The State Planning Commission has now prepared Guidelines (this document) for the proposed orbital launch complex and associated infrastructure based upon the significant issues relating to the proposed development. The EIS should be prepared in accordance with these Guidelines and should describe what the proponent wants to do, what the environmental effects will be and how the proponent intends to manage the project.

The EIS should cover both the construction and ongoing operation of the development and, where possible, should outline opportunities to incorporate best practice design and management.

For the purposes of environmental impact assessment under the *Development Act 1993*, the meaning of 'environment' is taken to include an assessment of environmental (biological and physical), social and economic effects associated with the development and the means by which those effects can be managed.

In this context, this document forms the guidelines as set by the State Planning Commission specifically prepared for this application. The guidelines have been developed to properly define the expected impacts (extent, nature and significance) associated with the proposal in the manner suggested, the proposed mitigation strategies, and on balance whether such impacts are acceptable.

## **2. DESCRIPTION OF PROPOSAL**

The proponent of the proposed development is SouthernLaunch.Space Pty Ltd (Southern Launch), which is an Adelaide-based company comprised of defence and industry experts with an advisory board. Southern Launch has an agreement with SCISYS Deutschland GmbH to utilise their space software for mission control purposes.

The proponent seeks to construct an orbital launch complex on leased freehold land, located at the southern tip of the Eyre Peninsula at Whalers Way, Sleaford. The complex will facilitate the launch of domestic and international vehicles for the purpose of polar and sun synchronous orbit satellite insertion.

The proposal specifically consists of a change in land use to accommodate an aerospace facility, the construction of buildings and infrastructure to support the launch site and the division of land in the form of a lease that exceeds five years.

The proposal is anticipated to be undertaken across five stages and would consist of the following:

- Launch pads (up to six (6));
- Assembly buildings (permanent and temporary);
- Range control facilities;
- Diesel and / or hydrogen fuel cell powered generators;
- Helicopter pad(s);
- Solar arrays;
- Water tanks, capture and treatment systems;
- Lightning rods;
- Anemometer towers;
- Engine test stands;
- Blast walls;
- Bunding for blast wave deflection;
- Access tracks;
- Storage of liquid, hybrid and solid propellants;
- Installation of fibre optic and satellite communication systems;
- Installation of high voltage power lines;
- Temporary infrastructure including, but not limited to:
  - Concrete batching plant;
  - Site and construction offices and facilities;
  - Laydown areas; and
  - Access tracks.

The aim of the proposal is to establish a satellite launching facility, with individual launch sites to be developed by Southern Launch and identification of potential sites for future development by other parties.

Each separate launch pad will have a dedicated assembly facility and firing bunker. Fuel and liquid oxygen storage will be situated behind protection bunds. Lightning and an anemometer tower will enable weather conditions to be assessed. Perimeter fencing will surround the launch site. It is proposed each traditional launch site will be rectangular in shape and range in size from 36,000 m<sup>2</sup> to 100,000 m<sup>2</sup>.

Test facilities and the establishment of non-traditional launch facilities are also considered within range of the proposal. These sites are proposed to be square in shape and be approximately 40,000m<sup>2</sup> in size, accommodating two assembly buildings and two launch facilities. Services, amenities and perimeter fencing will be installed.

Five phases of development are proposed across a number of potential sites:

- Phase 1 – Permanent launch pad and permanent launch support infrastructure
- Phase 2 – Permanent launch pad and permanent launch support infrastructure
- Phase 3 – Permanent range operations centre and permanent visitors centre
- Phase 4 – Permanent engine test stand and test support infrastructure
- Phase 5 – Launch pad and permanent launch support infrastructure.

The site is described as Allotment 101 in Deposited Plan 71437 (Certificate of Title: CT 5993/374). Allotment 101 totals approximately 2,640ha, however an approximately 1,200ha leased area has been negotiated for the proposal. The proposed footprint of the complex to be dispersed across the leased area and will be contained within approximately 100ha.

Access to the site will be gained from Right Whale Road in the north-eastern portion of the site, within the grounds of the existing caravan park. The main access road will run parallel to the eastern coastal boundary, turning west at the existing Cape Wills Radio Station along Whalers Way Road to provide access to proposed launch sites A-C and E-F. An alternate access route will be provided in the west from launch sites A-B traversing the site in a north-easterly direction to intersect with Fishery Bay Road. A third alternate access track will facilitate access between launch sites C and D and the western alternate access route.

The estimated minimum project cost is anticipated to be approximately \$43,250,000 across a six year period.

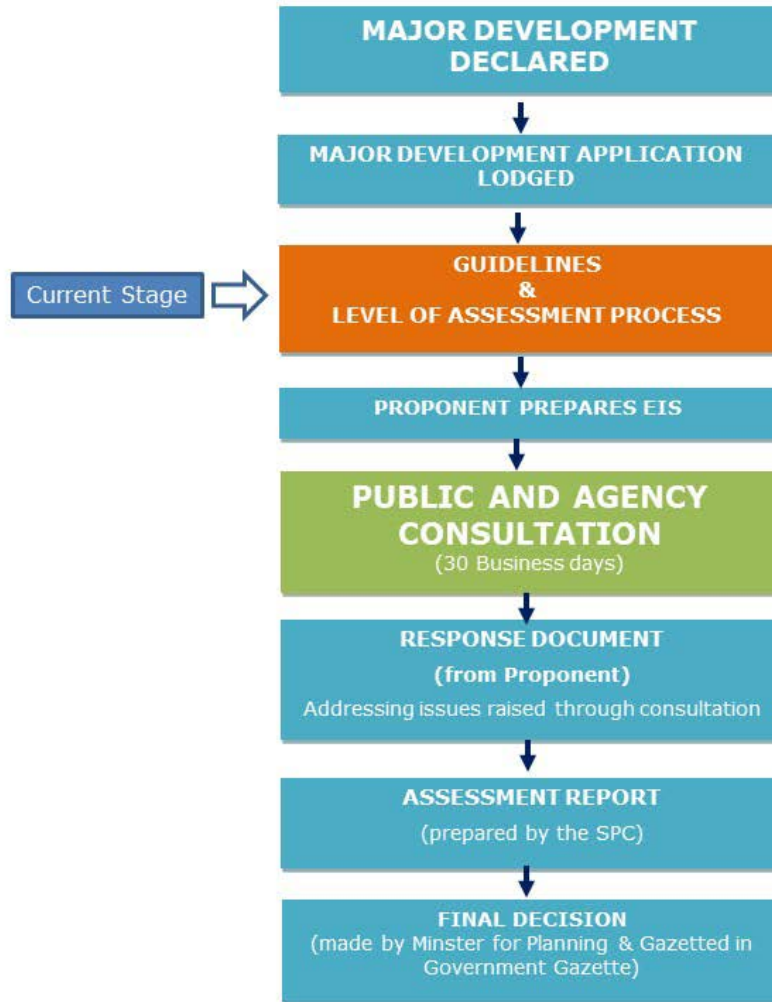
A proposed site plan is included in Appendix 1.

### 3. MAJOR DEVELOPMENT PROCESS AND ROLE OF GUIDELINES

The Major Development assessment process enables the Minister for Planning to utilise impact assessment as a strategic tool.

Impact assessment enables the holistic consideration of proposals that might otherwise be of a nature or scale that is not expected through the regular development assessment process and/or Council Development Plan(s).

The major development assessment process has several steps:



These Guidelines are prepared to inform the preparation of the EIS. They set out the assessment issues associated with the proposal along with their scale of risk as determined by the State Planning Commission.

An EIS must be prepared by the proponent in accordance with the Guidelines and should specifically address each guideline.

Each guideline is intended to be outcome focused and may be accompanied by suggested assessment approaches. These suggestions are not exhaustive, and may be just one of a wide range of methods to consider and respond to a particular guideline.

The EIS should detail any expected environmental, social and economic effects of the development, and the extent to which the development is consistent with the provisions of the Council's Development Plan, the Planning and Design Code, the Planning Strategy and any matter prescribed by the Regulations under the Act.

Whilst not mandatory for this EIS, due to it being declared under the Development Act, the EIS may wish to address the State Planning Policies given they are now a relevant planning instrument.

The completed EIS is submitted (by the proponent) to the Minister for public release, and is subsequently referred to the relevant Council(s) and government agencies for comment.

An opportunity for public comment will occur when the completed EIS is released. Public exhibition is undertaken for 30 business days. An advertisement will be placed in the *Advertiser* and local newspapers inviting submissions.

Copies of the submissions from the public, relevant Council(s) and government agencies will be provided to the proponent. The proponent must then prepare a 'Response Document' to address the matters raised during the public exhibition period.

An Assessment Report is then prepared. The Assessment Report and the Response Document will be available for inspection and purchase at a place, and period, determined by the Minister.

Availability of each of these documents will be notified by advertisements in *The Advertiser* and local newspapers. A copy of the EIS, Response Document and the Assessment Report will be provided to the relevant Council(s).

In deciding whether the proposal will be approved and any conditions that will apply, the Minister for Planning must have regard to:

- provisions of the appropriate Development Plan or Planning and Design Code
- the *Development Act 1993* and *Development Regulations 2008*
- if relevant, the Building Code of Australia
- the South Australian Planning Strategy
- the EIS, Response Document and the Minister's Assessment Report
- if relevant, the *Environment Protection Act 1993*
- if relevant, the objects of the *Marine Parks Act 2007*
- any other relevant government policy and/or legislation.

The Minister for Planning can at any time indicate that the development will not be granted authorisation. This may occur if the development is inappropriate or cannot be properly managed. This is commonly referred to as an **early no**.

## 4. ENVIRONMENTAL IMPACT STATEMENT (EIS)

The EIS will be presented in terms that are readily understood by the general reader. Technical details should be included in the appendices.

**The report will include the following:**

### **Summary**

The EIS should include a concise summary of the matters set out in Section 46B of the *Development Act 1993* and include all aspects covered under the headings set out in the Guidelines, in order for the reader to obtain a quick but thorough understanding of the proposal and the resulting environmental impacts.

### **Introduction**

The introduction to the EIS should cover the following:

- background to, and objectives of, the proposed development
- details of the proponent
- staging and timing of the proposal, including expected dates for construction and operation
- relevant legislative requirements and approval processes
- purpose and description of the EIS process.

### **Need for the Proposal**

A statement of the objectives and justification for the proposal, including:

- the specific objectives that the proposal is intended to meet, including market requirements
- expected local, regional and state benefits and costs, including those that cannot be adequately described in monetary or physical terms (e.g. effects on visual amenity)
- a summary of environmental, economic and social arguments to support the proposal, including the consequences of not proceeding with the proposal.

### **Description of the Proposal**

The description of the proposal should include the following information:

- the nature of the proposal and location
- a project plan to outline objectives, constraints, key activity schedule and quality assurance
- site selection and justification provided as to the suitability
- site layout plans (including indicative land division plan)
- the construction and commissioning timeframes (including staging)
- a description of the existing environment (including the immediate and broader location)
- a description of the current land use activities occurring in the area
- details of all buildings and structures (including fuel storage facilities and bunding) associated with the proposed development
- details of any other infrastructure requirements and availability
- details of the construction methods to be used
- details of the operation of the proposed development, including proposed maintenance programs
- the relevant Planning and Development Code zones
- identification of the nearest sensitive receivers and their distances from various site activities that have potential to cause off-site impacts
- management arrangements for the construction and operational phases (including Environmental Management and Monitoring Plans)
- a contingency plan for delays in construction
- description of alternative sites that were considered and the rationale why the current location was selected over the alternative locations.

*Nb. Sensitive information will not be released in the publically available EIS.*



### **Assessment of expected environmental, social and economic effects**

The assessment of effects should include all issues identified in these Guidelines and cross referenced to supporting technical references.

### **Avoidance, Mitigation, Management and Control of adverse effects**

The proponent's commitment to meet conditions proposed to avoid, mitigate, satisfactorily manage and/or control any potentially adverse impacts of the development on the physical, social or economic environment, must be clearly stated as part of the EIS.

The design of the proposal should be flexible enough to incorporate changes to minimise any impacts highlighted by this evaluation or post-operation monitoring programs.

### **Consistency with Government policy**

The *Development Act 1993* requires the EIS to state the consistency of the expected effects of the proposed development:

- with the relevant Development Plan, Planning and Design Code and Planning Strategy.
- with the objects of the *Environment Protection Act 1993*, the general environmental duty and relevant environment protection policies, and
- with the prohibitions and restrictions applying within the marine park under the *Marine Parks Act 2007* and the general duty of care under the Act.

### **Plans and Forms**

- Current **Certificate(s) of Title**.
- **Context and locality plans** should illustrate and analyse the existing environment and site conditions and the relationship of the proposal to surrounding land, buildings and waters. The plan should be drawn to a large scale and be readily legible. The plan(s) should indicate:
  - any neighbouring buildings, infrastructure or facilities, including identification of all nearest sensitive receivers and their distances from proposed activities that may pose air and noise impacts, and the likely use of existing or proposed neighbouring buildings (e.g. dwelling, farm outbuildings, shop, office)
  - location of any watercourse, dams, underground wells and/or any other environmentally sensitive areas
  - location of any state heritage and cultural heritage in relation to the site
  - existing native vegetation, regulated or significant trees
  - known sites for protected, threatened or vulnerable species, including migratory species, on the site, the adjoining land and marine environment
  - existing roads and access tracks (public and private)
  - any other information that would help to set the context for the locality
- **Site plan(s)** (drawn at a scale of 1:1000 or 1:2000) clearly indicating all proposed buildings, structures and works with individual development sites drawn at a scale of 1:500.
- **Elevations** (drawn at a scale of 1:500) showing all sides of the buildings, structures and works with levels and height dimensions provided in Australian Height Datum.
- **Cross sections** of the buildings, structures and works, including stockpile and storage facilities showing ground levels, floor levels, ceiling heights and maximum height in Australian Height Datum.
- **Electricity powerline survey plan** that shows indicative high voltage powerline easement corridor and the location of towers within easement.
- Any **technical or engineering drawings** and specifications including geotechnical data.

*Nb. Sensitive information will not be released in the publically available EIS.*

### **Specialist Reports and Details**

- An **Economic Impact Assessment** that describes the existing environment in which the project is set and conducts an assessment of the magnitude of change to the economic environment resulting from the project.
- A **Fauna and Flora Assessment and Management Plan**, (including a **Native Vegetation Clearance Data Report**) prepared by an Accredited Consultant approved by the Native Vegetation Council. The assessment should undertake a survey of the vegetation and fauna (including EPBC Act Listed threatened species and communities), detail compliance with the mitigation hierarchy and describe the means by which the significant environmental benefit would be achieved. The Report should identify any changes required to the Native Vegetation Heritage Agreement currently in place for the site.
- A **Marine and Coastal Environment Management Plan**, prepared by a suitably qualified coast and marine expert, which details the existing environment, identifies any coastal hazards (e.g. sand drift) and significant coastal or marine features or habitats. The report should also assess the impacts of the proposed operations and documents the environmental protection controls and measures to be implemented and monitored. The plan is to accord with the *Marine Parks Act 2007* and the current Thorny Passage Marine Park management plan, prepared by the Department of Environment and Water. The plan should address impacts on marine organisms from launch activities (including noise, vibration, and water quality) and impacts on the marine environment from spent (discarded) launch vehicles.
- An **Air Quality Assessment** report that describes the distances to sensitive receivers from proposed activities that may discharge air pollutants and assesses the proposal's likely compliance with the *Environment Protection (Air Quality) Policy 2016* in accordance with the EPA Ambient Air Quality Assessment 2016 publication.
- A **Cultural Heritage Management Plan** (CHMP) prepared by an appropriately qualified heritage expert that includes an assessment of the potential impact of the proposal on Aboriginal culture and non-Aboriginal heritage. The CHMP must outline measures to be taken before, during and after the proposed development in order to manage and protect Aboriginal cultural and non-Aboriginal heritage. The CHMP should include a cultural heritage survey identifying areas of Aboriginal significance. This survey should identify any archaeological, anthropological or historical sites, or sites of significance according to Aboriginal tradition.
- A **Transport and Access Impact Assessment** prepared by a suitably qualified traffic and access engineer. The assessment should evaluate current and proposed access arrangements including the effect on the arterial road network and car parking, as well as vehicle interface with the local road network. The impacts on the arterial and local road networks are to be considered to an extent which encompasses Port Lincoln. Any assessment must include the traffic and access impact for the construction period as well as any ongoing operations and maintenance including details of the transport vehicle sizes and movements outside of normal gazetted heavy vehicles and how any impacts will be minimised and / or mitigated.
- A **Waste Management and Minimisation Plan** (for construction and operation) detailing the sources of waste (including spoil and removed vegetation), the location of waste management storage areas (including the separation of waste streams, such as recyclables, hard waste and e-waste) and disposal facilities located on site or within laydown areas and provide details of how these facilities will be serviced. The plan should assess the impact on the local waste management and disposal facilities. The plan should also document the decommissioning and rehabilitation strategy for the development.

- A **Noise Report** prepared by a suitably experienced, professional acoustic engineering consultant<sup>1</sup>, testing worst case predicted noise from the proposal, including from construction, non-launch operational activities, any on site rocket engine testing and from actual launches, against the *Environment Protection (Noise) Policy 2007* and section 25 of the *Environment Protection Act 1993*. The assessment should also describe what reasonable and practicable measures will be taken to minimise noise impacts on sensitive receivers, including marine mammals, and the likely effectiveness of these measures.
- A **Vibration Report** prepared by a suitably experienced, professional acoustic engineering consultant<sup>1</sup>, assessing the worst case predicted vibration from the proposal, including from construction, non-launch operational activities, any on site rocket engine testing and actual launches. The report is to describe what reasonable and practicable measures will be taken to minimise vibration impacts on sensitive receivers, including marine mammals, and the likely effectiveness of these measures, with a view to demonstrating how the 'General Environmental Duty' (as described in section 25 of the *Environment Protection Act 1993*) will be met.
- A **Soil Erosion and Drainage Management Plan** which describes the site characteristics, including the existing topography and runoff characteristics. The plan should describe the measures proposed to prevent soil erosion and contaminated runoff from leaving the site during construction (including any opportunities for retention and reuse). The Plan should describe the drainage management to prevent contamination of groundwater on site.
- A **Construction Environmental Management Plan** (CEMP) that describes how construction will be managed to mitigate negative environmental impacts to the environment and to public health and amenity, and how those environmental management requirements will be implemented. The CEMP should include consideration of noise and dust management.
- An **Operational Environmental Management Plan** (OEMP) that describes how operations, in particular launches, will be managed to mitigate negative impacts to the environment, and public health and the amenity, and how any ongoing environmental management requirements will be implemented and monitored. The report should also describe compliance with the relevant international obligations and National legal obligations.
- A **Sustainability and Climate Change assessment** prepared by a suitably qualified environmental expert. The assessment should measure the ecological footprint of the development and address sources of greenhouse gas emissions and the implications of climate change, the use of renewable or alternative technologies, materials and resources minimisation, energy and water efficiency measures, greenhouse gas reductions and other sustainability initiatives during construction and operational phases.
- A **Hazard Management Plan** that considers the risks and hazards associated with all components of, and activities associated with, the proposed development. The plan is to address public and workplace safety, emergency response strategies and identify restricted and exclusion zones. Include measures to minimise fire risk, resources and training required, identification of firefighting water sources and available pressure and access. The plan is to consider the impacts on commercial shipping routes, onshore and offshore petroleum or mineral related activities and aircraft activities during operations.
- A formal **Risk Assessment**, using a commonly accepted methodology that meets Australian Standards (e.g. a Failure Modes Effects Assessment), that clearly sets out all the risks associated with the proposed development, and their interrelationship. This assessment will be used to inform proposed monitoring and mitigation activities.

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<sup>1</sup> An acoustic engineer is defined as a person eligible for full Member status of both Engineers Australia and the Australian Acoustical Society

- An **Access and Site Security Report** should address National security, including information, equipment and processes. Ongoing public access should be considered.
- Details of **Site Services and Infrastructure** including utility services (water, gas, electricity, domestic and commercial / industrial wastewater treatment and disposal, drainage, trenches or conduits); location of ground and roof plant and equipment (fire booster; electricity transformer; air conditioning; solar panels etc.).
- A **Visual Assessment** that considers the proposed buildings and structures introduced to the coastal landscape, when viewed from the publically accessible coastal tracks on the peninsula or adjacent waters. The assessment is to provide details on the potential impacts on landscape values and ecotourism.

#### **Sources of Information**

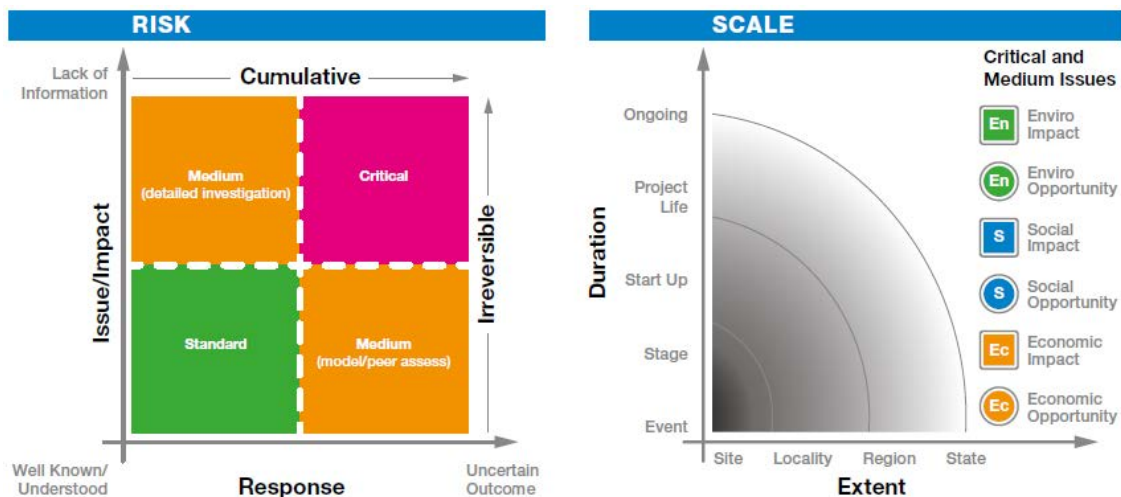
- All sources of information (e.g. reference documents, literature services, research projects, authorities consulted) should be fully referenced, and reference should be made to any uncertainties in knowledge. Where judgements are made, or opinions given, these need to be clearly identified as such, and the basis on which these judgements or opinions are made need to be justified. The expertise of those making the judgements including the qualifications of consultants and authorities should also be provided.
- Any technical and additional information relevant to the EIS that is not included in the text should be included in appendices.
- It is **RECOMMENDED** that the EIS consider issues that may generate concerns based on inaccurate or outdated perceptions. The information provided should explain key concepts in a factual manner. This can help to provide base level information to assist with community understanding of the proposal.

## 5. ASSESSMENT

Impact assessment is an important tool that enables the consideration of projects that might otherwise struggle to be addressed properly or fairly under the 'normal' assessment system.

In setting these Guidelines, the State Planning Commission has considered the scale of issues associated with the project and determined whether they represent issues or opportunities. The potential impacts and issues have then been organised according to the level of work and type of attention required by the proponent: either standard, medium or critical:

- Where the issue is well known and the response is well understood then the risk assessment is classed as '**standard**'
- Where work is required to address the issue but the risk is likely to be manageable with additional information then the risk assessment is classed as '**medium**'.
- Where information about the issue is lacking and the response is unclear, the issue is classed as '**critical**'.



The issues and impacts identified by the Commission as requiring standard, medium or critical level assessment are listed below. Each requirement includes a description of the issue/impact and a description of the action or investigation needed.

To assist with the assessment of the EIS the proponent is requested to provide a table (as an appendix) that cross references each Guideline requirement (action or investigation needed) with the relevant section and page of the EIS.

**NOTE:** The investigative requirements of the EIS do not negate the need for the proponent to obtain all necessary licences, permits and/or management plans prior to undertaking any investigations or works in relation to this EIS. It also does not negate the need for the proponent to comply with any legislative obligations or duty of care under the relevant legislation.

| No | Issue/Impact                  | Description   | Risk   |   | Scale                            |  | Level of assessment  |
|----|-------------------------------|---|--|---|----------------------------------|--|--|
|    |                               |   | Issue/Impact   | Response  | Duration                         | Extent                                 |  |
| 1. | Effect on Conservation Values | The proposed development is located within the Coastal Conservation Zone, in an area which contains sensitive coastal features and a significant and an extensive tract of remnant native vegetation. The area has high conservation values, being within part of the Jussieu Peninsula to Coffin Bay Peninsula and adjoining the Thorny Passage Marine Park. It is also within close proximity of the Lincoln National Park. | Based on the information provided by the proponent, clearing of native vegetation and some earthworks are proposed, with the potential for operational activities to impact on the conservation values of the surrounding area.  | The current plan does not provide a detailed description of the various effects on conservation values.   | During construction and ongoing. | Regional and State (possibly National) | The receiving environment is potentially negatively impacted by the development. Need for further assessment and offset opportunities.<br>= <b>CRITICAL</b>  |
| 2. | Effect on Native Vegetation   | The proposed development is located on a significant tract of remnant native vegetation including possibly threatened species and ecological communities.   | Based on the information provided by the proponent, there is potential for significant impacts on native vegetation, including threatened species through the clearance of vegetation. The interaction of the development in relation to the Native Vegetation Heritage Agreement is not detailed. There is also potential to impact native vegetation within the marine environment from spent (discarded) launch vehicles. | The current plan does not provide a detailed description of the quantity of native vegetation proposed to be cleared, the effect on native vegetation (including in the marine environment) and any changes proposed to the Native Vegetation Heritage Agreement. | Primarily during construction.   | Regional and State (possibly National) | The receiving environment is potentially negatively impacted by the development. Need for further assessment on the location, extent, condition and impact on native vegetation and threatened species. Need for investigation of offset opportunities.<br>= <b>CRITICAL</b> |
| 3. | Effect on Native Fauna        | The proposed development is located on land which supports native fauna habitat. The proposed operations also involve the airspace surrounding the subject site, introducing the potential for bird and bat strike. The adjoining cliffs and marine waters also support fauna.  | Based on the information provided by the proponent, there is potential for impacts on terrestrial and marine fauna and their habitat.  | The current plan does not provide a detailed description of the effect on native fauna.   | During construction and ongoing. | Regional and State (possibly National) | The receiving environment is sensitive to change. Need for further assessment on the location, extent, condition and impact on native fauna and any opportunity for offsetting.<br>= <b>CRITICAL</b>   |
| 4. | Hazard Risks                  | The operation of an orbital launch complex and associated supportive infrastructure and facilities involves a range of general and specific risks.  | Associated risks include: <ul style="list-style-type: none"> <li>• Fire and explosion.</li> <li>• Fuel spills and site contamination.</li> <li>• Public safety.</li> <li>• Aircraft and maritime safety.</li> <li>• Wind recirculation.</li> <li>• Marine debris.</li> </ul>   | The current document provides limited detail of risk assessment and mitigation strategies.  | Primarily during operations.     | Local                                  | Issue is not well understood, more specific information is required.<br>= <b>CRITICAL</b>  |
| 5. | Economic Effects              | The proposal will have an impact on the local and State's economy during construction and operations and may result in immediate and long terms effects on residents, businesses and surrounding uses.  | The development has potential to have an economic effect on existing tourism, commercial fishing and recreation activities and businesses.   | There is limited information on the proposed economic effects of the proposal.  | During construction and ongoing. | Local, Regional and State              | More information is required by way of an economic impact assessment.<br>= <b>CRITICAL</b>   |

|     |   |   | Risk   |  | Scale                               |                               | Level of assessment   |
|-----|---|---|--|--|-------------------------------------|-------------------------------|---|
| No  | Issue/Impact  | Description   | Issue/Impact   | Response   | Duration                            | Extent                        |   |
|     |   |   | The development is anticipated to contribute investment to the local community and State, research and development, have educational effects, employment generation and flow-on impacts on business  |  |                                     |                               |   |
| 6.  | Noise and Vibration Impacts                               | The proposed launch operations will involve the creation of significant noise and vibration.  | Potential to disturb fauna (including marine organisms), nearby residents and visitors through the creation of noise and vibration impacts.  | The documentation does not detail any noise or vibration impacts, not identify any sensitive receivers or environments.  | Primarily during operations.        | Local                         | Further information and details are required to quantify the impacts.<br>= <b>MEDIUM</b>  |
| 7.  | Visual Amenity and Tourism Impacts                        | Located on a visually prominent peninsula, the proposed operations introduce a change in the landscape.   | The effect of launches and an altered prominent coastal landscape will introduce a visual impact and have an impact on existing ecotourism activities.   | The current document does not provide an analysis of the visual impact (near and distant views) or quantify the impacts on the existing tourism sector.                      | Ongoing                             | Local and Regional            | Further information required. The environment is potentially negatively impacted by the development, impacting on amenity and tourism.<br>= <b>MEDIUM</b> |
| 8.  | Effect on the physical environment, water and air quality | The proposed development has the potential to alter the natural landform, introduce air quality impacts and effect water quality. Broader impacts can be expected from greenhouse emissions produced during construction and operation of the facility. | Operational activities have the potential to adversely change the surrounding physical environment, air and water quality and contribute to global warming through release of greenhouse emissions. Construction of the facility will contribute to greenhouse emissions through the use of materials, products, energy and fuels. | The current plan does not provide a detailed baseline of the existing environment and potential for the development to disturb the physical environment.                     | Construction and during operations. | Local                         | More information is required to quantify the impacts.<br>= <b>MEDIUM</b>  |
| 9.  | Effect on Communities                                     | The proposed development has the potential to affect the local community during construction and through the operation of the launch complex.   | The introduction of a launch complex may affect local communities, especially access to the coast for recreation and tourism.  | The currently plan provides limited detail on the effects of communities.  | During construction and ongoing.    | Local                         | More information is required to quantify the impacts on communities.<br>= <b>MEDIUM</b>   |
| 10. | Introduction/spread of exotic plant and animal species    | The proposed development has the potential for the spread of introduced or nuisance plants and animals.   | Construction activities could increase the abundance of pest plants or animals (especially weeds).   | The proponent will need to provide a detailed description of the risk and effect of introduced or nuisance plant and animal species to terrestrial and coastal environments. | During construction and ongoing.    | Local                         | More information is required to quantify the impacts.<br>= <b>MEDIUM</b>  |
| 11. | Security and Safety                                       | The proposed development requires a level of security which complies with National requirements and extends across land, water and airspace. Discreet public accessibility is envisaged.  | The nature of the operations requires the site and facilities to be specifically secure to ensure sensitive information is not divulged.   | The documentation does not provide details on security and safety measures.  | During construction and ongoing.    | Local, Regional and National. | Further information is required on the security and safety of the proposal.<br>= <b>MEDIUM</b>  |
| 12. | Effect on Cultural Heritage Values                        | The proposed development has the potential to impact on sites and places of Indigenous or   | The proposed development may have impacts on Aboriginal heritage sites,  | The current document does not provide a detailed description on  | Construction and                    | State                         | Investigations are required to be undertaken and more   |

| No  | Issue/Impact  | Description  | Risk  |  | Scale                            |                                   | Level of assessment  |
|-----|---|--|---|--|----------------------------------|-----------------------------------|--|
|     |   |  | Issue/Impact  | Response   | Duration                         | Extent                            |  |
|     |   | non-aboriginal heritage through disturbance during construction and operation. Native Title implications associated with Claim Nauo No. 2.   | objects and remains, as well as state heritage listed places, which may be located on the site.   | existing Aboriginal and other heritage matters, or management of such heritage matters that may arise during the construction phase. Documentation has not identified Native Title Claim Nauo No. 2. | operation                        |                                   | information to be provided.<br>= <b>MEDIUM</b>   |
| 13. | Spent (discarded) launch vehicle management           | The proposed development has the potential to cause spent (discarded) launch vehicles and associated debris to accumulate on the seafloor and coastlines.  | Spent (discarded) launch vehicles will fall into the ocean and are not proposed to be recovered. Such vehicles are likely to sink to the sea floor but could wash up on coastlines.       | The current document provides limited information about management of spent launch vehicles.   | During construction and ongoing  | Local and Regional                | More information is required to quantify the impacts on the adjoining marine environment.<br>= <b>MEDIUM</b> |
| 14. | Transport and Access                                  | The proposal requires access for the transportation of infrastructure and construction materials to site and ongoing access for materials transport, workforce attendance and public viewing purposes. Vehicular, airfreight and shipping access requires consideration. | Traffic may introduce impacts to the arterial and local road network, especially for the delivery of materials and infrastructure.  | The current documentation does not provide a detailed description of the existing and proposed arrangements.   | During construction and ongoing. | Local and Regional                | More information is required, but impacts would be manageable.<br>= <b>STANDARD</b>                          |
| 15. | Construction and Operational Environmental Management | The proposed development would require a range of impacts to be minimised, mitigated and monitored through an environmental management plan framework across the construction and operational phases.  | A range of standard and specific impacts would need to be adequately addressed to mitigate adverse impacts. Specifically, general, contaminated and spent rocket waste will be generated. | The current document provides limited information on the proposed construction and operational management techniques and measures.   | During construction and ongoing. | Local and Regional                | More information is required, but impacts would be manageable.<br>= <b>STANDARD</b>                          |
| 16. | Land Use Effects                                      | The proposal will have an impact on surrounding land owners and uses, including Cathedral Rocks windfarm, in the immediate and long term due to the change in land uses proposed.  | The proposal introduces land uses which alter the Coastal Conservation Zone and have broader effects.   | The current plan does not provide an analysis of the change in land uses, the associated impacts and mitigation strategies.  | Ongoing.                         | Regional and State                | More information is required, but impacts would be manageable.<br>= <b>STANDARD</b>                          |
| 17. | Legislation and Policies                              | A range of planning, environmental and space related statutory requirements would need to be met for the construction and operation of the proposed development  | The proposal will need to comply with relevant State, National and International obligations, policy directions and strategic objectives.   | The current plan does not provide a detailed description of all relevant requirements.   | During construction and ongoing. | State, National and International | Issue is understood, but more specific information is required.<br>= <b>STANDARD</b>                         |



## State Assessment Requirements

### CRITICAL ASSESSMENT

#### Effect on Conservation Values

**Assessment Requirement 1:** The subject site adjoins the Thorny Passage Marine Park which is a significant flora and fauna marine environment. The Jussieu Peninsula to Coffin Bay Peninsula is a significant Biodiversity Area which encompasses the subject site and contains a large tract of remnant native vegetation. The site is also located approximately 3.6 km from the offshore island Liguanea Island, which contains an Australian Sealion colony and Short-Tailed Shearwater colony. Liguanea Island is located within the Lincoln National Park. The conservation values of these areas are to be quantified and protected.

*1.1 Identify the existing terrestrial and marine environments and species that are known and likely to occur on the subject site and surrounds. Detail the conservation values for the Thorny Passage Marine Park, Jussieu Peninsula to Coffin Bay Peninsula Biodiversity Area and Lincoln National Park (including species listed in the SA National Parks and Wildlife Act 1972.*

*1.2 Detail the potential impacts on terrestrial and marine habitat for each potential launching site and associated impact area, including runoff from storm and wastewater into the marine environment due to the increase in impervious surfaces, impacts from noise and vibration during launches and impacts of the exhaust from rockets. Both terrestrial and marine ecosystems must be considered for all operational activities. Provide adequate mitigation and management measures for each area in turn.*

*1.3 Identify the potential trajectory of launched vehicles and likely location, extent, composition and amount of debris and spent componentry anticipated to impact on the surrounding area, including the adjoining Marine Park. Propose operational management strategies to limit the impacts on the quantified conservation values.*

*1.4 Describe the rationale for the major design elements of the proposed development and measures to mitigate the impact.*

*1.5 Describe the effect of the proposed development on coastal clifftop dunes, cliffs, limestone and calcrete formations of the site, and associated heathland shrubland communities, and outline management and rehabilitation measures for these areas.*

*1.6 Describe any alterations to the physical landforms by the construction (e.g. levelling of sand dunes, filling of low lying areas) and describe management and rehabilitation measures for these areas.*

#### Effect on Native Vegetation

**Assessment Requirement 2:** The proposed development is located on land which currently holds significant stands of native vegetation within the Coastal Conservation zone.

*2.1 Describe the location, condition and significance of native vegetation on the subject site, including individual species and communities. Include reference to areas that have Heritage Agreements under the Native Vegetation Act 1991 and any proposed alterations to or implications for the Heritage Agreement.*

*2.2 Describe the location, condition and significance of native vegetation species and communities that may need to be cleared or disturbed during both the construction and maintenance phases. This should include clearing for all buildings, structures, exclusion zones and access arrangements.*

*2.3 Describe the potential impacts on native vegetation fragmentation and the ability of communities or individual species to recover, regenerate or be rehabilitated during all phases of development.*

*2.4 Identify the habitat value of native vegetation and the potential for habitat fragmentation during both construction and maintenance (and decommissioning). Include a description of the effects of any fragmentation that may occur over the life of the project.*

*2.5 Detail any likely changes in remaining vegetation surrounding the launch pads, which may be impacted by the proposed operations. Mitigation measures should be documented to minimise the impact on remaining species and communities in the immediate vicinity of the launch pads.*

*2.6 Outline any compensatory activities proposed, making reference to guidelines produced by the Native Vegetation Council.*

*2.7 Identify the potential impact of fire on native vegetation, and the effects of fire risk management processes during both construction and operation.*

*2.8 Describe the location, extent, condition and significance of native vegetation species and communities in the marine environment within the impact area of spent (discarded) launch vehicles.*

#### **Effect on Native Fauna**

**Assessment Requirement 3:** The proposed development will be constructed on land, but will also operate in the airspace and over adjoining waters with potential impacts on terrestrial and marine habitats which support significant populations of native fauna.

*3.1 Describe the location, extent, condition and significance of native terrestrial and marine fauna populations, including individual species and communities in the surrounding area, including on land, cliffs and in adjoining waters, including Liguanea Island.*

*3.2 Describe the nature and extent of the impacts likely to affect native terrestrial and marine fauna species and populations during both construction and operation. Describe the ability of communities and individual species to recover, especially threatened or significant species (including those listed under the National Parks and Wildlife Act 1972). Specifically consider the impact of marine debris.*

*3.3 Identify the effect of the proposal on terrestrial habitat fragmentation including the ability of populations or individuals to recover during both construction and operation.*

*3.4 Identify the potential impact of fire and explosion on native fauna, and the effects of fire risk management processes during both construction, operation and maintenance.*

*3.5 Identify the potential impact of noise and vibrations on terrestrial, coastal and marine native fauna, and the mitigation and monitoring strategies during both construction and operational phases.*

*3.6 Detail appropriate buffer distances that would be required between proposed development (including coastal access points) and threatened terrestrial and marine species, including feeding areas, nesting sites and roosting sites.*

*3.7 Outline measures to avoid, minimise, mitigate and monitor the effects on native fauna, including any compensatory activities.*

#### **Hazard Risks**

**Assessment Requirement 4:** The construction and operation of a launch complex involves a range of general and specific risks.

*4.1 Undertake a risk assessment to quantify hazards and potential eventualities involved with operating the orbital launch complex.*

*4.2 Articulate the measures taken to mitigate the risks involved in launch operations. Detail the site emergency response strategies, specifically in the event of an explosion or incomplete launch. Quantify the impact of launch vehicle failure on the pad and throughout the trajectory.*

*4.3 Evaluate the fire risk and danger zone for the proposed launching complex and high voltage power lines. Document measures to minimise fire risk, resources, and training required and firefighting water sources.*

*4.4 Identify the publically restricted buffer and exclusion zones for each launch pad. Describe the methodology to establish the various buffers and zones and the corresponding distances, including airspace and marine waters. Articulate the anticipated security measures to ensure public safety.*

*4.5 Outline any risks for workplace safety procedures which mitigate and manage the operational phase of the development ensuring all activities on site are described.*

*4.6 Describe any hazardous materials, including propellants, with reference to storage, use, handling and disposal of these materials during construction and operation. Document the physical and operational mitigation strategies to contain propellants and eliminate spills.*

*4.7 Identify any potential effects on airfields and aircraft movements, and consult with the Civil Aviation Safety Authority Australia and the District Council of Lower Eyre Peninsula (Port Lincoln Airport) about the requirements for development within the vicinity of airfields and on flightpaths.*

*4.8 Consider and quantify the impacts of the development on commercial shipping and aircraft routes during operations.*

*4.9 Consider and quantify the impacts of the development on commercial and recreational fishing areas during operations i.e. safety of commercial fishermen from falling debris and the need for temporary exclusion zones.*

*4.10 Describe the potential impacts on the Cathedral Rocks wind farm.*

*4.11 Describe the likelihood of bird and bat strike and the management of such a hazard.*

*4.12 Evaluate the wind recirculation zones and the corresponding potential impacts on operations.*

*4.13 Describe risk minimisation, management and response requirements.*

*4.14 Identify the impact of coastal erosion due to expected sea level rise of 0.3 metres to 2050 and 1.0 metres to 2100.*

## **Economic Effects**

**Assessment Requirement 5:** The proposal will have an impact on the local and State's economy during construction and operations and may result in immediate and long terms effects on residents, businesses and surrounding uses.

*5.1 Describe the proposal's anticipated effect on State and local investment, research and development, educational effects, employment generation and flow-on impacts on business.*

*5.2 Describe potential employment opportunities and the expected impacts on the local workforce during construction and operational stages.*

*5.3 Identify any potential economic effects on tourism, recreation, mining and petroleum related activities.*

*5.4 Identify any secondary economic effects, including the potential to attract new industries and commercial ventures. Describe the positive and negative effects of this, including the current situation.*

*5.5 Identify any economic implications for the State and the region if the proposal does not proceed.*

*5.6 Consider and quantify the impacts of the development on commercial fishing areas during operations i.e. impacts on business if there is a need for temporary exclusion zones.*

*5.7 Document the consultation undertaken with mining and petroleum tenement holders (onshore and offshore). Describe how the development is anticipated to interact with mining and petroleum interests and operations, during the construction and operational phase.*

## MEDIUM ASSESSMENT

### Noise and Vibration Impacts

**Assessment Requirement 6:** The proposed development has the potential to disturb fauna, nearby residents and visitors through the creation of noise and vibration impacts.

*6.1 Detail the predicted levels of environmental noise and vibration associated with construction and operation of the proposed development, identifying all potential noise and vibration sources and assessing the impact upon sensitive receivers in the immediate and wider locality (including residents, visitors, marine fauna, terrestrial native animals and livestock, and avifauna including migratory species).*

*6.2 Provide information on the anticipated frequency of launch events, initially and into the future. Include information regarding individual launch events and predicted noise and vibration impacts to be generated.*

*6.3 The location of noise and vibration sensitive receivers should be identified on an appropriately scaled plan.*

*6.4 Information, including noise contours from a suitable acoustic model, should be provided for all significant noise generating activities when operating under worst case meteorological conditions.*

*6.5 Describe current background noise and vibration levels at sensitive receivers and changes to these levels as a result of the project (during both the construction, maintenance and operational phases). Sufficient data should be gathered to provide baseline information for comparison with any future monitoring undertaken during the construction and operational phases. Details of any noise or vibration monitoring undertaken should be incorporated.*

*6.6 Detail the predicted noise levels against the Environment Protection (Noise) Policy 2007 and section 25 of the Environment Protection Act 1993 at the nearest noise sensitive receivers when operating under worst case meteorological conditions.*

*6.7 Identify what reasonable and practicable measures will be used to minimise impacts from noise and vibration and assess their effectiveness. Details of how any such measures will be monitored, audited and managed should be included.*

*6.8 Identify the potential impact of noise and vibrations on native fauna (terrestrial and marine), and the mitigation and monitoring strategies during both construction and maintenance.*

### Visual Amenity and Tourism Impacts

**Assessment Requirement 7:** The impact of permanent structures and visually prominent operations on a highly visible peninsula with substantial landscape value. There will be significant changes from the existing natural landform and conservation use, currently utilised for ecotourism purposes. Ongoing coastal tourism access is proposed along the eastern coastal boundary. Cape Wills Radio Station in the lower south-east is excluded from the lease area.

*7.1 Describe how the visual landscape and amenity will be altered by the development, for residents and visitors, for both near and distant views.*

*7.2 Describe and illustrate the development when viewed from the publically accessible coastal reserve (Crown Land Allotment 102 – CR5993/375) or from the adjoining waters, on launch and non-launch days.*

*7.3 Outline the methodology adopted for classifying landscapes and assessing visual and landscape impacts.*

*7.4 Describe the impacts (amenity and economic) on the region's ecotourism sector and the existing caravan park in the north-east portion of the site.*

*7.5 Describe alternative measures for minimising potential loss of visual amenity.*

*7.6 Identify lookout / viewing locations and anticipated delivery timing of these facilities.*

*7.7 Identify any potential impacts on Cape Wills Radio Station.*

#### **Effect on the Physical Environment, Water and Air Quality**

**Assessment Requirement 8:** The proposed development has the potential to alter the natural landform, introduce air quality impacts, release greenhouse emissions and affect water quality in the vicinity.

*8.1 Describe the nature and condition of the existing physical environment in the proposal's environs, including reference to geology, geomorphology, soils, hydrology and atmosphere. Include any baseline data or monitoring established prior to development on the site.*

*8.2 Identify the potential for pollution (e.g. fuel spills and launch debris) of watercourses, coastal drainage and groundwater, and what design, construction and management measures will be adopted to minimise such impacts. Document mitigation and monitoring strategies to limit any adverse impacts.*

*8.3 Evaluate the potential for air quality to be impacted as a result of the proposal (e.g. fuel emissions, combustion products and generators, gases, steam etc.) and describe any sensitive receivers (including residents, land uses or environments) and the extent to which they may be impacted. Air quality impacts need to be assessed against the Environment Protection (Air Quality) Policy 2016 in accordance with the EPA Ambient Air Quality Assessment 2016 publication. Document mitigation and monitoring strategies to limit any adverse impacts.*

*8.4 Identify the potential for soil/ surface erosion and sand drift hazard, including the implications of these processes. Describe measures for the remediation of erosion or sand drift should it occur within the cliff-top dune system as a result of the development.*

*9.5 Describe stormwater and wastewater management and the potential impact on groundwater resources, surface water resources and the marine and coastal environment, in particular with regard to fuel and chemicals used in the operation of the development. Include measures proposed to manage stormwater and wastewater.*

*8.6 Undertake a high level estimate of whole of life greenhouse gas emissions associated with the construction and operation of the facility and outline measures to minimise emissions through material selection including recycled products, operating methods and offsets. Estimates shall cover Scope 1, 2 and 3 emissions and as a minimum include:*

- embodied emissions of construction materials used in construction of the facility and consumables during operation (e.g. quarry products, concrete, asphalt, metals, fuels);*
- extraction, production, transportation of fuels;*
- transportation of purchased materials and waste;*
- disposal of waste; and*
- electricity.*

#### **Effect on Communities**

**Assessment Requirement 9:** The proposed development has the potential to affect the local community through the establishment and ongoing launch complex operations.

*9.1 Describe and illustrate the proximity of the proposed development to local communities and individual dwellings.*

*9.2 Describe the impacts which may impact on nearby communities and residents (e.g. businesses, employment, visual amenity, ecotourism).*

*9.3 Outline potential impacts on the use of the land by Aboriginal people, or on cultural values held by Aboriginal people that relate to the areas affected by the project (land and water).*

*9.4 Detail the impacts of the increased workforce on the communities and evaluate the necessary accommodation, and other local infrastructure such as schooling and health facilities, for peak periods of construction and operation.*

*9.5 Describe any community consultation processes conducted by the proponent, specifically detailing the support and / or any concerns raised about the proposed development.*

*9.6 Identify any potential effects on education and skills, or opportunities to retrain and upskill workers, in the State and local area.*

*9.7 Identify any impacts on recreational use of coastal land on and around the site, including recreational fishing and access to coastal crown land.*

#### **Introduced Plant and Animal Species**

**Assessment Requirement 10:** The proposed development has the potential for the spread of introduced or nuisance plants and animals and soil pathogens such as Phytophthora.

*10.1 Identify the potential for the introduction or dispersal of new pest or nuisance plant and animal species, and soil pathogens and the associated implications for native species and habitat.*

*10.2 Identify the potential for increased distribution and abundance of existing pest or nuisance plants, and soil pathogens and the associated implications for terrestrial and coastal environments.*

*10.3 Outline mitigation measures and their effectiveness in reducing or avoiding the introduction or spread of pest or nuisance plant and animal species.*

#### **Security and Safety**

**Assessment Requirement 11:** The proposed development requires a level of security which complies with National requirements and extends across land, water and airspace.

*11.1 Where appropriate, provide information on the proposed physical equipment and structures, personnel and procedural security measures for the launch complex for construction and operational phases.*

*11.2 Identify the safety and security measures anticipated to be developed for the publically accessible areas, including any roads or viewing locations. Articulate the anticipated security measures to ensure public safety.*

#### **Effect on Cultural Heritage Values**

**Assessment Requirement 12:** The proposed development has the potential to impact on sites / locations of Aboriginal or non-aboriginal heritage through disturbance during construction and operation.

*12.1 Quantify any Aboriginal sites of archaeological or anthropological significance, including but not limited to those listed in the SA Register of Aboriginal Sites and Objects.*

**12.2** Identify any effects on Aboriginal sites of archaeological or anthropological significance. Indicate any consultation with local Aboriginal organisations that have an interest in the area, specifically addressing Native Title Claim Naou No. 2.

**12.3** Quantify any non-aboriginal settlement heritage places or elements on or adjoining the subject site, including but not limited to those listed in the SA Heritage Places Database (state and local heritage value).

**12.4** Identify any impacts on non-aboriginal settlement heritage places or elements on or adjoining the subject site.

**12.5** Outline measures adopted to avoid or minimise impacts on Aboriginal and non-aboriginal sites of archaeological or anthropological significance.

#### **Spent (discarded) launch vehicle management**

**Assessment Requirement 13:** The proposed development has the potential to cause spent (discarded) launch vehicles to accumulate on the seafloor and coastlines.

**13.1** Detail how spent (discarded) launch vehicles and associated debris will be managed, including any retrieval of spent vehicles. Document the likely impacts on the adjacent Marine Park. Take account of State, National and International legal requirements, agreements and conventions (e.g. Commonwealth Environment Protection (Sea Dumping) Act 1981, London protocol etc.).

**13.2** Identify how the movement and accumulation of spent (discarded) launch vehicles and associated debris will be monitored, including any tracking.

**13.3** Outline how potential environmental impacts will be monitored, associated with spent (discarded) launch vehicles (including any impacts at the species and ecosystem level) and associated debris.

**13.3** Propose operational management strategies to minimise potential environmental impacts of spent (discarded) launch vehicles and associated debris, including any retrieval of spent launch vehicles/debris that may wash up onto coastlines.



## STANDARD ASSESSMENT

### Transport and Access

**Assessment Requirement 14:** The proposal requires access for the transportation of infrastructure and construction material to site and ongoing access for materials transport, workforce attendance and public viewing purposes.

**14.1** Undertake a Transport Assessment that involves end-to-end supply chain (input and output) to determine transport impacts (including traffic impacts on the local and arterial road network) and measures to manage and / or mitigate the impacts during the construction and operational phases. The impacts on the arterial and local road networks are to be considered to an extent which encompasses Port Lincoln.

**14.2** Describe the existing transport and access arrangements to and around the site, including access from the arterial and local road network, private roads and gated areas. Detail the road surface treatments and minimum vehicle types for each road and track (e.g. 4WD).

**14.3** Describe and identify on plans, all primary and alternate access roads (including arterial and local roads), tracks and parking proposed for the construction and operational phases.

**14.4** Identify all vehicle types required to utilise the existing and any proposed access routes, specifically the heavy vehicles anticipated. Identify any road surface upgrades required as a result of the development and any heavy vehicle movements (including over-size/over-mass) that require approval through the National Heavy Vehicle Regulator.

**14.5** Identify the anticipated construction and operational vehicle movements per day, making provision for any increases in either phase of development. Include the likely transportation of large-scale materials or componentry and method of transport (e.g. heavy vehicles, airfreight, and shipping).

**14.6** Document the anticipated publically accessible areas, including roads to be utilised, parking and turnaround facilities.

**14.7** Describe the right of way access easements required to facilitate public access to the site for public viewing purposes.

**14.8** Identify any potential effects of construction traffic including noise and dust and associated mitigation measures.

**14.9** Describe the location, extent, number and purpose (e.g. commercial or otherwise) of helicopter pads. Identify the potential impacts of helicopter operations with regard to the intended flight paths, downdraft below cruising height, wildlife (e.g. bird and bat strike) and noise implications.

**14.10** Describe the risk involved in transporting materials to the site, including any specific safety and security requirements to be implemented when travelling on roads, including the dangerous goods code requirements.

### Construction and Operational Environmental Management

**Assessment Requirement 15:** The proposed development would require a range of impacts to be minimised, mitigated and monitored through an environmental management plan framework across the construction and operational phases.

**15.1** Provide information on any baseline data or monitoring established prior to development on the site. Document the anticipated monitoring on site throughout the construction and operational phases.

**15.2** Document the development's construction techniques, methodology, including site preparation works, activities, timeframes and staging (if proposed). Detail the proposed management arrangements to mitigate the negative environmental, public health and amenity impacts and subsequent implementation of these procedures.

**15.3** Outline the timing of construction and the time of year it is likely to occur.

**15.4** Describe the soil erosion and drainage management plan to be implemented, including the proposed stormwater management solution. Document any storage, detention and treatment proposed for the development. Surface water and groundwater quality is to be addressed with specific regard to spill containment. Detail the dust management mitigation measures for the construction phase, in particular for the concrete batching plant and site access.

**15.5** Identify the water sources for construction and operations, in particular for the site amenities, firefighting and concrete batching plant.

**15.6** Identify the location, extent and details of all infrastructure and site services required on site to support the launch operations including, but not limited, to solar arrays, water tanks, propellant storage, generators, lighting rods, anemometer towers, fibre optic and satellite communication systems and high voltage powerlines (including alignment). Detail all utilities to be provided or connecting, including water, gas, electricity, wastewater treatment and disposal, drainage, trenches or conduits.

**15.7** Describe the volume and source of cut and fill required for all proposed built form and associated works, including access tracks, launch pads, permanent and temporary structures, and the effect on the natural topography of the site.

**15.8** Identify the location, extent and details of any temporary buildings, structures and activities proposed, including but not limited to the concrete batching plant, offices, assembly buildings, laydown areas, fuel and chemical storage locations and access tracks.

**15.9** Identify the anticipated launches and activities carried out on site and the operational management regimes for each. The OEMP is to demonstrate mitigation of negative environmental, public health and amenity impacts. The plan is to collate the key operational information for the project, including hazard and risk documentation, waste and debris procedures, fire and explosion response strategy, noise and vibration monitoring and transport and access.

**15.10** Prepare a waste management and minimisation plan which documents all waste streams during construction and operation, identifies the location of waste storage areas and disposal facilities. Identify the opportunities for recycling and reuse of equipment and componentry.

**15.11** Document the site rehabilitation and decommissioning strategy for all temporary and permanent elements.

#### **Land Use Effects**

**Assessment Requirement 16:** The proposal will have an impact on land owners and surrounding uses, in the immediate and long term.

**16.1** Identify the existing land uses of the subject site and surrounds (e.g. coastal conservation, tourism, mining and petroleum related activities).

**16.2** Describe the new land uses proposed for the subject site (e.g. launch complex, helicopter landing pads, electricity generation etc.).

**16.3** *Identify the types and extent of land tenure in broad terms, including reference to Crown Land. Outline any implications for Native Title and Native Vegetation Heritage Agreements.*

**16.4** *Identify the level of interference to landowners, land uses and activities in the immediate and surrounding environs.*

**16.5** *Evaluate the change in land use, resulting in a loss of coastal conservation area, visual and amenity impacts being introduced and impact on mining and petroleum related activities.*

**16.6** *Outline any mitigation measures to alleviate or avoid impacts on land owners and land uses.*

#### **Planning and Environmental Legislation and Policies**

**Assessment Requirement 17:** A range of planning, environmental and space related statutory requirements would need to be met for the construction and operation of the proposed development.

**17.1** *Describe the launch complex and site activities in terms of the consistency with the relevant Development Plans, Planning and Design Code, the Planning Strategy and the State Planning Policies.*

**17.2** *Describe the development in terms of its consistency with relevant State and Commonwealth legislation and initiatives.*

**17.3** *Provide information on the operational requirements to be met with regard to the authorised space activities under the Space (Launches and Returns) Act 2018 and compliance with any relevant national and international obligations.*

**17.4** *Identify any potential implications of the proposed launch complex for International Conventions and Agreements to which the Commonwealth of Australia is a party.*

**17.5** *Provide information on activities which will require a licence pursuant to the Environment Protection Act 1993.*

**17.6** *Provide information on the operational requirements to ensure compliance with the Environment Protection Act 1993 and associated Air Quality and Water Quality policies.*

APPENDIX 1 – SITE PLAN

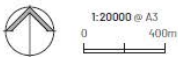


- Subject Site
- Lease Boundary (Northern Extent)
- Council Boundary
- Zone Boundary

- Zones**
- CP Caravan & Tourist Park
  - CstCon Coastal Conservation
  - PrPro Primary Production

- Launch Site Options**
- 200m x 500m
  - 150m x 300m
  - 200m x 200m
  - 500m x 200m
  - 400m x 150m
  - 350m x 120m

- Main Access Road
- Alternate Access
- Lookout
- Tourist Coastal Access
- Gate Access
- Cape Willis Radio Station



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Site Plan

WHALERS WAY  
ORBITAL LAUNCH COMPLEX  
for Southern Launch

## APPENDIX 2 – USEFUL DOCUMENTS

### Legislation

- *Development Act 1993*
- *Development Regulations 2008*
- *Environment Protection Act 1993*
- *Native Vegetation Act 1991*
- *Coast Protection Act 1993*
- *Fisheries Management Act 2007*
- *Marine Parks Act 2007*
- *Marine Park (Zoning) Regulations 2012*
- *Natural Resources Management Act 2004*
- *Mining Act 1971*
- *Petroleum and Geothermal Energy Act 2000*
- *Native Title Act 1994*
- *Aboriginal Heritage Act 1988*
- *Heritage Places Act 1993*
- *National Parks and Wildlife Act 1972*
- *National Parks and Wildlife (Protected Animals - Marine Mammals) Regulations 2010*
- *Commonwealth Environment Protection (Sea Dumping) Act 1981*
- *Space (Launches and Returns) Act 2018.*

### Strategy & Policy

- Development Plan
  - District Council of Lower Eyre Peninsula
- Planning and Design Code
  - Phase 2 – Rural Areas
- Region Plans
  - Eyre and Western Region Plan
- State Planning Policies, 2019
- *Environment Protection (Noise) Policy 2007*
- *Environment Protection (Water Quality) Policy 2015*
- *Environment Protection (Air Quality) Policy 2016*
- South Australia's Waste Strategy 2015 – 2020, Office of Green Industries SA
- Building Code of Australia
- Australian Civil Space Strategy 2019-2028

### Guidelines

- Stormwater Pollution Prevention Code of Practice for the Building and Construction Industry, 1999
- Guide for applications to clear native vegetation, 2017
- EPA Concrete batching guidelines, 2016
- EPA Construction environmental management plans guidelines, 2018
- EPA Bunding and Spill Management guideline, 2016
- EPA Evaluation distance for effective air quality and noise management, 2016